The AMERICAN REGISTERED ARCHITECT
Architecture wrote the history of the epochs and gave them their names. Architecture depends on its time. It is the crystallization of its inner structure, the slow unfolding of its form. That is the reason why technology and architecture are so closely related. Our real hope is that they grow together, that someday the one be the expression of the other. Only then will we have an architecture worthy of its name, architecture as a true symbol of our time.

Ludwig Mies van der Rohe
CONVENTION, 1963

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WE HAD EXPECTED interested response to our first magazine, but not the overwhelming barrage of congratulatory letters and telegrams that descended on us. Can it be that we have opened a hopeful vista and somehow promised proper relief for those of our profession who have hitherto been inarticulate? That these are the great majority has long been known but little considered. To be their voice is an honor and a responsibility of soul-searching importance.

Architecture as a whole must be heard.

The day of self-perpetuating minority purporting to speak for the entire profession must no longer be.

In this we promulgate the philosophy that brought forth The Society of American Registered Architects. For half a decade its founders have given of their time and money that every architect may be equally heard. How else can we emerge from today's "dog eat dog" kennels into the brotherhood of a true profession? And so we shall be diligent in reporting the commendable and the commiserable across the nation. It is to be hoped that the revealing light of publicity will inspire the former and deter the latter and particularly where the latter aligns itself with hypocrisy, concealed behind a screen of sonorous but self-serving ethical concepts.

This is your magazine.

May it serve you well.
It begins to appear that the Atlantic and Pacific have decided to merge. This job with which you have honored me, has so completely transmuted miles into minutes that my horse and buggy mind has lost all sense of space. North, South, East and West, no longer compass points, are days marked on a calendar.

From up here this is truly a wondrous land. Forgive me my effusion. The copper convolutions below are, according to my schedule, the Rockies. The twisted blue ribbon of an hour past was the earth's greatest river. The Badlands are a splattering of two iridescent colors. The salt lands reach white to the horizon but their lake is unbelievable in its cerulean brilliance. A shaded carpet, more black than green, is the forest of firs punctuated by peaks of world wide fame. The desert named for death is an expanse of effervescence and the green flecks thereon are the homes of those who give it its limited life. The gray growth of the south land, the Bayous and the lowlands all sing the same muted ballad. The cubic patterns of the flat midwest made more angular by the precise tracery of white highways. The sudden mirage of a city floating in shimmering distance. The rolling woodlands of the east coast. The undulations of New York State, of Pennsylvania and Ohio. The brilliant wound we call the Canyon. The yellow miles of the west's great basin. The chartreuse springtime. The explosion of the spectrum that New England calls the autumn. Even the frame of cobalt seas and leaden lakes share this pristine picture . . . which are a lot of words to fail to say what Whitman said so well.

But some such background was needed to introduce the thought that we who are architects are the creators, the adaptors of this precious space to the needs of men, contributing, we hope, a bit, however infinitesimal, to the glory that is this nation.

Why, then, are there the unhappy small among us who would destroy the least part of this aspiration? With a destiny so tremendous, what place exists in our profession for the little man who restrains the good that you might do, that his wallet might thicken? Why are the sins of envy, resentment and greed so entrenched in this profession? Hiding but poorly in a morass of meaningless words, they sound that siren song, ethics on the tongue of a liar.

You know this man! It is he in whom the maggots of discontent fester into criticism of his brother. It is he who would dim the sun of another that he might seem to shine more brightly in the murkiness of his own creation. Names are not of consequence here. In your community you know him for his markings never change. Who has planted the seeds of doubt about a fellow architect? Who permits his envy to undermine a more successful firm? Who would restrain those to whom success has not yet come and in particular, those to whom success seems sure. Who clothes himself in sanctity that his fellows may not know the awful thing he does to his profession, a profession that thus escapes nobility? Point out this man . . . and pity him.

Fellow architects, you have a nation yet to be conquered — miles of good architecture exist nowhere in this hemisphere. There is no place for the petty. Turn your thoughts toward the temple. May your dreams become the realities of the little time God has given you. May your mark be that of beauty on the grandeur that is America. May the malicious find no sanctuary. May the evil that is envy wither in the fire of inspiration.

May our common objective be greatness.

To this are we dedicated, we of this Society.

REGION ONE
John R. Hellman, F.A.R.A.

A regular meeting of the Massachusetts Council was held on June 8th, in Falmouth. The following officers were elected for the coming year:
President — Bernard E. Holy; Vice President — Theodore Brodeur; Secretary — Edgar Wood; Treasurer — Bernard Diles; Regents — Mayo Larkin, Claude Miquelle, George Ross, David Schubert.

A detailed account was presented relative to the success of the Massachusetts Council in getting one of our members appointed to the Board of Registration of Architects. It was gratifying to report on the tremendous growth of membership in the New England area. It is expected that plans will be formulated to place members on the Boards of Registration in Rhode Island and Connecticut, where A.R.A. membership has grown by leaps and bounds.

Activity continues healthy in this area, and it is gratifying to note the exchange of interests on the part of A.R.A. members whenever they meet.

There is further interesting news from Region 1. President Thurston Munson has been in Providence, Rhode Island conference with A.R.A. attorneys in preparation for filing of an injunction leading to a restraining order preventing the expenditure of public money for a competition which excludes certain qualified architects. Immediate action is anticipated.

The state of Rhode Island is conducting a competition for a civic center. At the moment the competition is restricted to architects living in that state who are members of an architectural fraternity. Here again we have a situation where registered architects have paid taxes to their state and federal government and then found themselves unable to equally share in the benefits.

This seems as professionally unethical as it obviously is illegal.

Three
REGION TWO
R. A. Thoenig, F.A.R.A.
Ray's recent illness has prevented him from investigating and reporting the happenings within his region. However, he was able to make the Boston meeting. Ray and M. O. Foss share the responsibility of organizing a scholarship program and letters have already gone to selected schools outlining the contributions the Society is prepared to make. Ray's territory includes the site of the New York World's Fair, which might be called the most architecturally activated area in the world.

REGION THREE
William R. Frampton, F.A.R.A.
In reporting on Region 3, as to the coming year, there seems to be an indication that the profession in this region will enjoy some prosperity and this will be better than it has been in the past two years. This indication is expressed in various trade journals and other periodicals and publications in this area. Early indications of this are shown in our own office, where we are working on a maintenance shop for the National Guard and a Junior High School. We all enjoyed the last issue of the A.R.A. magazine!

REGION FOUR
Robert W. Stickles, F.A.R.A.
The Ohio Council held a meeting in Cleveland on May 13th which was well represented and several decisions of great importance were reached. First of all, to stimulate more interest, it was suggested that the A.R.A. wives participate in the monthly get-togethers. It was thought that perhaps a motel or hotel where refreshments and entertainment were available would serve as a suitable location for the meeting at which the officers for the 1963-64 would be elected. This would also be an installation meeting. Consequently, wives and members were cordially invited to participate in a dinner-business meeting at the Hotel Sheraton, Cleveland, Ohio, on June 10, 1963.
Pre-dinner refreshments for members and their wives were obtained at the “Bunch of Grapes” Room starting at 6:00 p.m., followed by dinner at the Falstaff Room at 7:00 p.m. The business meeting started at 8:00 p.m.

REGION FIVE
Howard Fiedler, F.A.R.A.
Florida Council's annual meeting and election of officers for the coming year will take place in Orlando, July 20th, at the Robert Meyer Hotel. Any A.R.A. members of Region 5 who are in the vicinity are cordially invited to join us. Activity in the medium-to-small size offices is picking up as more work becomes available from Florida organizations, in addition to the steady flow of work being sent into Florida from organizations whose headquarters are in other areas.

REGION SIX
Chester A. Stark, F.A.R.A.
Region 6 recently held a meeting at the Swedish Club in Chicago to inform its members on the following subjects of great interest to them: (1) Insurance Program, (2) Fee Schedule and A.R.A. Client Assistance Program, (3) “Meet Your Architect” brochure, (4) Specifications, (5) Alternate months of the publication of the A.R.A. magazine, the region will issue a news letter which will contain helpful professional information, (6) Stationery, (7) Exhibits at the National Convention, (8) Decals for A.R.A. members, (9) NCARB assistance, (10) Legal advice which is available to members, (11) Aid and advice when in trouble, (12) To meet with architects on an equal basis. Also to be held in our area is the national A.R.A. convention at the Edgewater Beach Hotel on September 11, 12, 13 and 14. We are proud to report that plans are coming along well, and look forward to seeing all of you there.

REGION SEVEN
Spencer J. Warwick
I regret to report that I have no report for you at this time. This is due mainly to the fact that I have not had sufficient time or information to achieve anything particularly noteworthy. However, these conditions are being remedied and I trust that there may be something of value the next time you are ready for publication.
I want to add my personal congratulations to those of others for the outstanding work you have already done and are doing for A.R.A. It is inspirational and memorable. Time itself will provide your reward and it will be a grand one, I know.

REGION EIGHT
Herst John, F.A.R.A.
How can any State Council of A.R.A. function effectively when some of the architects in that state are members of the national organization, but not members of the State Council? We are going to need a real unity of our membership in each state before we can successfully represent the profession before our legislators, our law enforcement agencies and the general public. All laws governing the practice of architecture are made and enforced at the state level. One architect who claims direct national affiliation can make any claim on behalf of the profession by claiming he, instead of the State Council, represents national policy. Can an architect be a member of a State Council of A.R.A. and not affiliate with the national organization.

REGION NINE
Walter H. Simon, F.A.R.A.
Now that summer is really here, most architectural offices in this Region are showing an increase in building activities, especially in the larger commercial and institutional field. Competitive bidding among reliable contractors is healthy and keen and there has been little difficulty in awarding contracts within realistic budgets. The first issue of the A.R.A. magazine has made more than a favorable impression on Region 10, and architects look forward to the next issue. Meetings have been held with A.R.A. members to plan for the Chicago convention and for fall programs beginning in September.
REGION ELEVEN
Allan Scott Watts, F.A.R.A.
The Society of American Registered Architects appears to have created considerable interest in the state of California. There seems to be considerable talk about establishing a state council. One idea, advanced several times, is the feasibility of three separate councils to better cover the unusual length of the state. Rumor has it that Hal Stonelbraker may soon be in California to help in any way the realization of this step ahead for the Society.

A general call has gone out for qualified architects to contact the Bay Area Rapid Transit Authority for subcontract work on structures for the Authority.

REGION TWELVE
L. E. McCoy, F.A.R.A.
In this area, building activity is in a good state of progress. Most architects are busy and there appears to be a great deal of work coming up in the near future. A point of great interest to the architectural profession all over the nation is the four-state western region where a standard examination is set up and each successful applicant may be readily certified in the other three when registered in one by examination. The writer has discussed this plan with Board of Examiners members as to the intent behind such a move. They have assured me that this is not intended to eliminate the tie with NCARB and each person so licensed will be encouraged to register with NCARB and the Boards of Examiners will continue to process applications for reciprocity via NCARB as in the past. This group of four state Boards of Examiners are in no way hostile to NCARB.

REGENT AT LARGE
M. O. Foss, F.A.R.A.
A.R.A. activities have carried me across the nation three times so far this year and this is only June. There are tangible rewards. It is gratifying to see the gradual emergence of this Society in all parts of the country. Our magazine has penetrated the cloistered areas and awareness of the altruism that motivates us is general. Last month's meeting of the Executive Board in Boston was well attended and very productive. Our objectives are now pretty clearly defined. I rode back to Springfield with President Munson and no phase of A.R.A. activity was left unexplored. The publishing and continuing improvement of the magazine is a high priority item. All of the regents seem agreed that better public relations follow in its wake. Perhaps we will yet convert those whose blindness is only that they will not see.

From the office of the Recorder
An amazing situation that reflects the stability of architectural practice was recently encountered in the mailing of the first issue of The American Registered Architect. Since 1962, almost one-third of all registered architects in the United States, (totaling 30,311 as of April 30, 1963), have moved, dissolved or reorganized partnerships, died, retired or left the profession for other reasons.

The tremendous job of obtaining and checking the current registration from the fifty-one state registration and licensing boards (the District of Columbia is the fifty-first) has been completed, counted and cross-indexed, and this is only one of the services that the A.R.A. performs for the profession as a whole.

If you did not receive your copy of the March-April issue of The American Registered Architect write the A.R.A. Publication Office, 485 Union St., Springfield, Massachusetts.

Occasionally an A.R.A. certificate is displayed in the office of a non-member. Usually it is the office of a previous member who has resigned but has failed to return the certificate to the recorder. Obviously this bit of paper must still mean something to this individual and we would like to remind him that reinstatement is a simple process. Otherwise may we suggest that he return the certificate to us.

A new facet of professional interest will appear on the 1963 convention agenda. To honor gifted practitioners the Academy of Architecture will appear on the scene for the same reason that brought the A.I.A. into existence a century ago. The electoral college will be composed of Fellows of the Society of American Registered Architects and the honorary members of the Academy. These men will be selected yearly on a world-wide basis. The exact provisions of the new Academy will be a subject of discussion and organization by the attending convention membership.

Hal Stonelbraker, F.A.R.A.

From the office of the Treasurer
The publication of the American Registered Architect made something of a dent in our reserve, but the memberships that resulted from it are again smoothing things out. Elsewhere in this magazine is a description of the Architectural Register of America, Inc., a subsidiary corporation which, being profit motivated, may soon start contributing to the Society's coffers. However, it is not the intent of the Society to build up a non-purpose reserve and any surplus will eventually find its way

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into some project for the betterment of American architects. The Register will have a variety of objectives but from the standpoint of the treasury its happiest result will be the ability to forever keep A.R.A. dues to a minimum. This is consistent with our desire that no architect shall ever be denied membership, even by economic pressure. Obviously, the annual dues of $15.00 cannot finance the many things we are doing for the profession and even less the additional things we plan. The same inventiveness that creates buildings is now engaged in developing the means for reconciling these diametrically opposed objectives.

Fred W. Raueber, F.A.R.A.

Reports from Committees

Convention

All A.R.A. members will be delighted to learn that our convention will act as a background for a discussion that may influence the entire pattern of American architecture. The principals of six of America's largest architectural firms will meet at the Chicago Yacht Club at 5:30 p.m., September 10, 1963, to discuss problems of common interest. This meeting will be under the auspices of the American Institute of Architects and will be their first meeting open to all architects everywhere. Two of the panelists will be from the Society of American Registered Architects, two from the American Institute of Architects, and two will be architects who belong to no national architectural organization.

Representing A.R.A. will be Wilfred J. Gregson, founder and past president, whose firm is the largest in the state of Georgia, and Thurston Munson, whose work has assumed national stature. Representing the A.I.A. will be Philip Will, past president of A.I.A., from the well-known firm of Perkins and Will; and Alfred Shaw, whose firm of Shaw, Metz and Associates is of national consequence. The two independent members of the panel will be Sidney H. Morris, of the firm of Sidney H. Morris & Associates, well-known on the American architectural scene; and A. Epstein of A. Epstein and Sons, among whose recent better-known buildings are the new Sarah Lee plant, and the Abbey at Lake Geneva.

It is particularly noteworthy that this discussion will be directed at the improvement of the status of the American architect and in no way reduce itself to a debate between the relative merits of individual organizations. It is expected that the discussion will carry through and on to the floor of the A.R.A. convention on September 12 or 13. The writer feels that this is at last a harmonious and purposeful gathering of the architectural clans. It is expected that from this will come a new understanding of architectural problems and the elimination of the little areas of acrimony that have hitherto existed. It could well come to be that this meeting will constitute the first step in the combined effort of all architects towards the advancement of their profession.

Robert F. Brown, F.A.R.A.

Insurance

As you know, the insurance program of A.R.A. is now an accomplished fact. We are, at this moment, accepting applications from our members for participation in what is the finest insurance program offered by any Association in the country. Have you applied for coverage for your firm? If not, you should immediately write our admin-
istrators so that you can be covered without delay. Your enrollment in this program is to your very great benefit for the following reasons:

1. The coverage afforded is excellent!
2. The cost of our program is priced below that of other insurance programs provided!
3. Most of our membership cannot obtain similar coverage except through the A.R.A.!
4. You may now have one source to look to for all of the coverage involved!

As a reminder, the coverages offered are:

1. Group Life Insurance
2. Group Accidental Death & Dismemberment Insurance
3. Group Disability Insurance (including Hospitalization)
4. Major Medical Insurance
5. Professional Liability Insurance

You may select only those coverages which you want for your firm, rather than the total program. However, in order to hold the excellent rates which we offer, we do need the support of our Membership for all of our programs.

A.R.A. is the only architectural organization which can present three separate companies, and consequently get competitive rates covering your insurance program. When you apply, please give your A.R.A. number and state your membership.

It will be necessary for you to fill out an application form which covers your type of practice so that a fair basis may be obtained in securing your insurance.

Should your errors and omissions policy be close to termination, don't wait until it expires to apply for new insurance, as there is some little time consumed in getting the policy agreed upon by you and the company.

All other features of the insurance policy are now available and we suggest that you take full advantage because the more architects using it the lower the cost will be. It is already lower than you can get anywhere else. As chairman of the insurance policy committee and because I have full faith in it, I have turned over all my personal and office insurance to Marsh & McLennan.

Act today without further delay; you owe it to both yourself and to A.R.A.!

Wilfred J. Gregson, F.A.R.A.

Forms and Standards

There are many definitions for the word "form," but in this case, the word "form" is a manner or method as regulative or prescriptive; method of expression for a way of proceeding; a prescribed set or order of words; a formula; as a matter of form. The word "standard" also has many definitions, and in this instance, it is that which is set up and established by authority, custom, or general consent as a model or example; criterion; test, etc. There are a number of meanings for the word "guide": such as, to put in orderly manner and in sequence, etc.

In keeping the above in mind, there should definitely be a Table of Contents; divided possibly into three divisions. Namely, First: the Building Documents; Second: Contract Forms; Third: Specifications. It is our belief that it is to the best interest of the membership and architects, as a whole, to stay with Sections and in sequence to meet the requirements of the specific project or any project.

In looking over various sets of specifications, it is found that they are more or less of a "build-up" rather than considering the requirements specifically. We feel the forms should be a standard so that all registered architects and the construction trades or industry would be familiar with their contents.

The Forms and Standards Committee hopes to obtain uniformity by setting up a pattern which could be followed. The Exhibit "D" Series was presented at our last Executive Board Meeting in Boston, and was tentatively approved.
The Contractor's Affidavit and the Contract for Architectural Services (Long Form) have been approved and adopted. They have been distributed to the membership and are available to all members of the Society at a cost set by the Recorder.

The important item for development and passage at present is the General Requirements. They have been presented to the Executive Board and have been revised in line with comments received from Board Members and other individuals. The General Requirements have been formulated out of much research and study with all agencies and groups interested in this subject.

After receiving further comments, the Committee will again revise the General Requirements and present them to the Executive Board Meeting in Chicago on September 10, 1963. When they are approved and adopted, they will be ready for publication and distribution.

There will be further articles written on the Exhibits, as previously mentioned in this report, in the A.R.A. Magazine and the Newsletter.

Wm. R. Frampton, F.A.R.A.

Public Relations

It is my pleasure to report that all of our activities have been well received and the public is beginning to understand our objectives. Several members have described an improved reception by potential clients who might earlier have looked for fraternal membership rather than ability. The determination to say nothing but good about another architect seems to be paying off especially in those circumstances where the other architects have been less gentlemanly. Clients are far from unintelligent and can easily evaluate the man who will criticize his competitor in an effort to make himself look better. The Golden Rule still seems to be an effective yardstick.

The area of public relations is so completely tied into everything we do that it is impossible to isolate it for the purpose of this report. The day is soon coming when a professional P.B. program will be necessary but until then we can do no better than to continue to improve our communication with architects everywhere and to continue to practice what we preach.

Ted Samuelson, F.A.R.A.

Arts and Crafts

We were saddened to learn of the death of Mr. David Campbell, President of the American Craftsmen's Council and a writer in the last issue of our magazine. He had planned a more extensive article for a future issue and we had not thought his illness this serious. Although there had been but this one contact we feel that a friend has been lost.

At the Boston meeting of the Executive Board approval was given my suggestion for an exhibition of arts and crafts at the convention. Mrs. Vanderbilt Webb of the American Craftsmen's Council indicated that they could put on a good exhibit of craft items as far as photographs go but that most of the items of architectural interest would be too large. She did not exclude the possibility that some of the local craftsmen might put actual pieces in. She suggested the possibility of a panel discussion of "Craftsmen Meet the Architect" with their regional supervisor as part of the panel. Mrs. Webb felt that the limited time precluded a complete juried show.

In view of the need for affiliation between architects and architectural craftsmen it seems that the possibility of incorporating such a display and the panel discussion into our convention program should be completely explored.

John Mullins, F.A.R.A.

Interprofession

As a result of efforts by the Interprofessional Relations Committee of the American Society of Registered Architects, a meeting was held at the convention of NCARB with its officers. Mr. Walter Simon, a regent of ARA, met with the NCARB officers to discuss the great number of cases of applicants who have written to A.R.A. for advice and assistance on the expediting of their applications. The results of this meeting were reported at the Boston A.R.A. Executive Board meeting.

We received encouraging information that the evaluation of all applications will be expedited promptly, and that answers will be mailed to all of those cases that were presented by the Interprofessional Relations Committee of the Society. It is quite evident that the move to Washington, D.C. of the NCARB Board was an element in the delay that occurred. With the increase in office staff, the work load will be taken care of with greater efficiency under Mr. Sadler's direction.

The standards for certification that have been set up by NCARB will be maintained. This means that all applicants will be obliged to qualify under these standards. In any event, those individuals who have not received prompt reply here-tofore will now be given attention and assistance in the preparation of their histories and other required qualifications. A.R.A. in its cooperative approach to this matter is working for all architects whether or not they are members of our Society.

At the Boston meeting of the Executive Board of A.R.A., a resolution was passed to proceed with the creation of a separate division of the American Society of Registered Architects to be known as the Academy of Architecture. A format has been created, and will be presented at the annual convention which will cover complete standards and processes by which members of our profession will be elevated to the Academy for distinguished honor and accomplishments. Members of A.R.A. are looking forward with great interest and pride to this new worthwhile addition.

J. J. Liebenberg, F.A.R.A.
The philosophy that brought forth the Society of American Registered Architects was a growing hope for half a century. With the coming of state registration came also the jurisdiction of selected architects over their peers. The selection, as often political as meritorious, created a stratigraphy in which ability was second to favoritism by a majority. The voice of the little man disappeared from the profession. The maverick, architecture's greatest resource, was decried by the many who prettily packaged their mediocrity. Criticism became rigid with formality and the creative artist was relegated to rarity. Architects gathered in self-selected groups and by ethical concepts of their own manufacture relegated outsiders to obscurity. Economics replaced inspiration, and the architect became the greatest enemy of his own profession. It came to be that our Society was founded on a philosophy that was best stated by Christ two thousand years ago. It has since come to be known as the Golden Rule. Cynics will jeer and the shallow will question but remember well the little and unknown group of men who rebuilt the entire world on the strength of its context.

For these many decades, architects had questioned the lack of a professional society which truly and democratically represented all licensed architects. Caught up in their careers, they waited hopefully for "the other fellow" to have the initiative and enterprise for so tremendous a task. And so it is not surprising that the Society's birth came from the mind and deeds of a single man. Wilfred Gregson, a member of the Georgia State Board of Architects, recognized the need for the honesty and harmony within the entire profession. A handful of architects had set themselves up as spokesmen for the profession. The evils inherent in this situation were articulately deplored by Gregson. He spent over a year in fruitless effort to have this group discontinue issuing supposedly complete lists of Georgia architects which omitted over two thirds of those actually registered. In defiance they stated that they were incorporated and could not be reached through the architectural board. Gregson's attorney filed charges of fraud. It was a moment of great dramatic content when this man, despised by the timid architects who had agreed to support him, stood alone against the skilled lawyers assembled by his opposition, and won.

He took this group to task. His recommendations for a sharp, clean change to unity among all architects were met with a taunt "If you don't like the way we do things, start your own damn organization."

He did! With perseverance and fortitude Wilfred Gregson became the A.R.A. into being. He established as its creed the Golden Rule, and as its basic tenet, the thought that architects, above all people, should help architects. Scoffers notwithstanding, the thought spread. The group grew until the new Society appeared a threat to the bastion of self-aggrandizement that had forced it into being. In counter attack, these recalcitrants attempted to introduce legislation that would have placed the fate of Georgia architects into the hands of a ruthless few. Gregson wrote to all registered architects in the state inviting them to meet to stop this dangerous bill before it became law. They failed to appear and he started a one man campaign that killed the bill before it reached the floor of the assembly.

Like wildfire, the news of this success spread across the country. The dozen members became hundreds. Kansas, under Carroll Hatfield, became the first state council. Texas, under Matt Howard, became the second. On the basis of architectural consequence, sensing here the embodiment of their professional ideals, gave freely of their time and money. Then came the national meetings, the policy board and the gradual crystallization of the format that will forever serve architects everywhere. The conventions at Kansas City and Dallas were brave explorations for so young a group but in them was born the world's awareness of a new and dynamic force in American architecture.

We believe it basic that an organization must exist that will include and speak for all registered architects. Prerequisite is the absolute insistence that no architect will ever be denied membership for any reason or for whatever. Equally indespensible is the need for collective strength to protect the individual practitioner from economic, political or professional attack. The machinery already exists for the exhaustive investigation of suspect situations and for the wide and very public dissemination of resultant findings. It is the determination of the Society of American Registered Architects that there shall be no inequity nor shall there be manipulation of the professional rights of architects, individually or collectively. Although the Society is in no sense a political organization it does maintain constant liaison with federal and state legislative bodies in order to provide its members with early information concerning available work and to protect all architects against the passage of harmful legislation. Already in its short life the Society has twice successfully opposed laws that would have given selected architects the right to revoke the registration of others for any reason they deemed sufficient... with no appeal to any court of law. Think long of this.

No phase of the astounding growth of the Society of American Registered Architects has been as ripe with innuendo as its purported differences with the American Institute of Architects. Of the thirty thousand architects in America, less than half are members of any national professional organization. Approximately twenty per cent of A.R.A. members also belong to A.I.A. The organizations do not always agree in their stated objectives. In fact, the A.R.A. congratulates its sister organization on its many services to architects and architecture. We compliment the A.I.A. on its publications and printed forms that have so long contributed to those services. It will be difficult for us to do as well. The A.R.A. commends the philosophies of ethical conduct which appear between the covers of these publications. The A.R.A. concedes the right of A.I.A. to limit its membership to those of its own selection. The A.R.A. condones the right of A.I.A. to employ its resources for the exclusive betterment of its members. We believe, however, that so long as a single registered architect is arbitrarily denied membership in an organization, that organization cannot presume to be the spokesman for architects in their entirety. For so long as membership is predicated upon selection by incumbents there is no basis for an implication of superiority. Any organization using its cohesive strength to influence the architectural awarding bodies of federal, state or municipal governments is trespassing upon the legal rights of all architects. Legislation for or against any subdivision of the entire architectural membership is both unethical and un-American. We realize that this sort of thing is limited to ingrown chapters and even then is a source of regret and disillusionment to ethical members of the participant groups. Unfortunately, the action of cliques within an organization makes suspect its entirety. There is no doubt but that both national architectural societies are working for the elimination of this sort of thing. Even were there no differences, we believe that there should forever be two national groups. Any one-party system becomes totalitarian. With size and authority come arrogance and delusions of grandeur. If the existence of the American Institute of Architects was ever threatened it is certain that A.R.A. would be in the first line of defense. Pertinent here is that most illustrative Americanism "I may not agree with what you say but I will fight to the death for your right to say it." It is better...
and certainly more American that we each censure the transgressions of the other, duly note our similarities, accept our differences and direct our mutual effort towards elevating architecture to the nobility merited by its purpose.

The Society of American Registered Architects recognizes that a code of ethics is often the personal philosophy of its promulgator and too often designed for his personal advantage. The propounding of the hypocrite are usually louder than those of the sincere. Certain things are undeniable harmful to the profession of architecture and to its clients. Dishonesty, the dissemination of derogatory criticism of another architect, job piracy and similar malfeasance must disappear before architecture can claim its rightful place with the professions. There is, however, a large area of indecision. No facet in the architect’s code of ethics is as fraught with iniquity as the dictates that concern advertising. The large firm can, with impunity, employ a publicity staff and make certain that each day finds laudatory presentation of its name across the nation. The little man lacking the necessary financial or connections, finds himself censured if his name appears in an inauspicious charity brochure. Admittedly, no professional should engage in combative, first person advertising but this fact does not mitigate the basic injustice. This is but one of the several areas of injustices that must be corrected. These are our reasons for being.

One of the larger areas of discontent on the American architectural scene is the difficulty of interstate practice. A competent architect becomes a criminal if he designs a simple structure beyond the confines of a political boundary. The National Council of Architectural Registration Boards was created to expedite the acquisition of architectural registration by qualified, non-resident architect. Webster’s definition of “expedite” is “to hasten the progress of.” Registration in any state is prima facie evidence of qualification. Any elaboration or deviation from this simple criterion is at best not germane. The very involved and time consuming process now necessary for N.C.A.R.B. certification negates its entire reason for being. Many states are returning to a system of mutual reciprocity. The Society of American Registered Architects is establishing machinery for interstate practice through a form of area representation. It is hoped that the National Council will establish a system permitting an applicant to receive his certification within two weeks. The usual applicant has immediate need for the registration he requests and any delay contributes to the negation of the Council’s basic purpose.

These are but a few of the several aspects of architectural practice that are being explored by the Society of American Registered Architects. We are concerned with fundamental right and wrong and seek the elimination of artificialities which are too often contrived by incompetence seeking to restrain competition. We intend that the least successful of our profession shall have a voice, and above all shall we protect his rights. The hard core of the Society is made up of men successful in their professional work and dedicated to the proposition that architecture shall be an honored profession, that inequities shall come to an end, that architects, as gentlemen, shall not speak of each other save in the saying of that which is good. That these men have been financially and politically strong has fortified the Society against the influences which would have destroyed it. Now that the organization has itself become strong, it is hoped that members from all facets of architecture and all degrees of success will seek election to the executive board. This governing group includes a president, three area vice presidents, a recorder, treasurer and one regent from each of ten established segments of the United States. These officers are listed in the office each year at the national convention. Each finances his own expenses to the quarterly and special meetings across the nation. Each has contributed of his time and money far beyond any reasonable call of duty. Such is their faith in the Society of American Registered Architects.

No architect registered in the United States will, for any reason whatsoever, be denied membership in this Society. Nor shall he ever lose his membership except by resignation or the revocation of his license. Should such revocation be protested the Society will conduct an exhaustive investigation into the circumstances and will, if evidence of misuse of authority becomes suspect, use the full force of its collective strength towards the reinstatement of the member. If the evidence of misuse of authority is substantiated the Society will not cease in its efforts until the guilty persons are exposed and proper punishment administered. It is the determination of the Society of American Registered Architects that there shall be no manipulation of the professional rights of any architect.

So limited a treatise can suggest only a few of the benefits that the Society makes available. It can only generalize about its raison d’être. It can only hint at the “blood, sweat and tears” that went into its formation. Consider it, if you will, a printed affirmation that the Society of American Registered Architects opposes nothing except dishonesty and inequity. It will never be an instrument of harm. Its all encompassing objective is a better world for architects and their clients everywhere.

The Architectural Register of America, Inc.

Since the last issue of the American Registered Architect something new has been added to the Society. After a year of exploratory work and preparation the Architectural Register of America has come into being. It is so named because its basic function will be the maintaining of a register of all architects licensed in any of the United States. This register is our answer to certain rosters which purport to list all architects but forget to include practitioners not associated with the compilers. It should be of benefit to non-members as well as members of A.R.A.

This new corporation will serve architecture in a variety of ways. It is completely owned by the Society of American Registered Architects but, under the direction of a business-wise administrator, it will not be subjected to the lack of continuity which emanates from a yearly change of officers. The Register will be housed in a newly decorated series of offices at Six Frost Street, Springfield, Massachusetts. Mrs. Mooney, A.R.A.’s secretary, is moving from Kansas City to better coordinate the activities of the Society, the new magazine and the new corporation.

Like the Society, the Register is expected to be of help to all architects everywhere. Besides maintaining the architectural roster and publishing the magazine it will provide the machinery for interstate architectural alliances. It will act as agent for designers and creators of architectural items which could not sensibly be obtained by competitive bidding. It will maintain a file of renderers, muralists, mosaicists, sculptors and other participants in the architectural arts. It will be a source for architectural literature, supplies and equipment. It will establish a library for loan, rental, reference and sale. It will forever maintain a watchful eye for other services that might be of help to the profession as a whole.
Chicago joins us in inviting you to A.R.A.'s Fifth Annual Convention. The summer heat will be replaced with the just right temperature for a ride on the lake or a coatless excursion to the city's cosmopolitan shops and restaurants. We might elaborate on the theatres and clubs except that much of the top talent will be with us at our cocktail parties and dinners. Chicago's renown skyline is now more dramatic than ever with its new hi-rise buildings of variety and architectural innovation. Lake Shore Drive separates America's most beautiful apartments from miles of well designed public beach with an invitation should you prefer the lake to the hotel's popular pool. The youngsters will be back in school so take this opportunity to combine a highly informative architectural program with a few days of leisure . . . and fun.

Since last summer a dedicated convention committee has explored every avenue of interest to architects. It has put together a program which, by itself, will make the trip worth while. In addition there is something quite unique about A.R.A. conventions which probably finds its origin in the Society's philosophy of Architect helping Architect. There is a friendliness and a vivacity which permeates the entire convention. You will make new friends. There will be architects from all parts of the nation with a wealth of experience to be shared. It may well come to be that you will find more solutions during a convention coffee break than in the thickest book on your shelves. It may come to be that you will make a contact that, in some way, some time, some place, will make your 1963 trip to Chicago an investment of great profit.

And the wives will have a ball! Fashion shows, teas, excursions and what have you are planned and for the few who prefer to do their own exploring, Chicago is a fascinating place. From the Pump Room to the stock yard steak houses, from the giant department stores to the almost hidden specialty shops, from the opera to the street singer, from the Art Institute to the back street gift shops, a cornucopia of the unexpected awaits you. We have planned that there shall be no dull moments for the wives while their husbands are solving the problems of the architectural world.

The list of events which follow is too factual to truly express the spirit of this gathering. For the convenience of those who successfully read between the lines we have placed a tear-out page in the front of this magazine. Pre-registration saves a few dollars and, of greater importance, it guarantees you pleasant accommodations for your Chicago sojourn. You sign and send it and we will take care of everything else.
LADIES PROGRAM
$15.00 Registration
Wednesday, September 11, 1963
Convention Registration
"Old Town Tour"
Founder's & Presidents' Cocktail Party

Thursday, September 12, 1963
Luncheon and fashions, followed by Arts and Crafts tour
Exhibitors Cocktail Party

Friday, September 13, 1963
Convention Program
Annual Banquet and Awards Presentation

Saturday, September 14, 1963
Convention Program
A.R.A. Races at Sportsman Park

MEN'S PROGRAM
$20.00 Registration
Wednesday, September 11, 1963
Convention Registration
Convention Program
Founder's and Presidents' Cocktail Party

Thursday, September 12, 1963
Convention Program
Luncheon
Exhibitors Cocktail Party

Friday, September 13, 1963
Convention Program
Luncheon
Annual Banquet and Awards Presentation

Saturday, September 14, 1963
Convention Program
Luncheon
A.R.A. Races at Sportsman Park

AND ENTERTAINMENT
Wednesday
Founder's and Presidents' Cocktail Party
Governors Room
Diana Kirby Trio

Thursday
Exhibitors Cocktail Party
Paul Witt and his music

Friday
Awards Banquet
Bob Kirk, his orchestra and entertainment

EDGEWATER
BEACH HOTEL
CHICAGO
SEPT. 11, 12, 13, 14
Matt E. Howard, Jr.

Matt gave much of himself to this organization. It is the unhappy truth that the president of A.R.A. is the target of malediction from little men across the country who see in this Society a threat to self-serving methods and practices that they would prefer continued. This malevolence, particularly in the area of his home city, took its toll and it is only recently that Matt has regained the thriving practice of his earlier years. We congratulate this man for the tenacity that enabled him to overcome the snide and devious machinations of his brethren. It is Matt's opinion that only by the exposure of such malignancy can the public become aware of the right and wrong of professional behavior.

Matt's record of service to the Society is enviable. One of the original members of A.R.A. he began his active assistance in the development of the Society in 1957. Early in 1958 Wilfred Gregson visited Matt and from this meeting came the decision to implement the growth of A.R.A. through the formation of local and state organizations. The policy committee, under his direction, developed the framework for A.R.A., proposed bylaws, established procedures for setting up state council organizations, designed format for literature and generally crystallized the idea conceived by the founder. During his presidential tenure the A.R.A. had its first executive board with meetings across the nation. Policy, procedures and bylaws were developed and perfected. Matt, almost single handedly, organized the Dallas convention and from then throughout his term, he worked unceasingly to establish the mould which has since shaped the Society.

Matt Howard is the sort of host that makes Houston a happy place to visit. Interesting examples of his work grace the Texan countryside. He is an inventive designer with an excellent balance of engineering and aesthetics. He has maintained his own office since 1952 with a staff that varied from five to thirty-five. He has received his share of awards and his work has been published in national magazines. His firm has maintained an annual scholarship fund for needy architectural students. An expert pilot he makes the entire nation his own back yard. In his many interests and devotion to his profession Matt is a credit to architecture and to the Society he so skillfully directed.

The American Registered Architect
It is inevitable that the salesman and the advertisement often intrude on time the Architect might hope to use otherwise; but imagine, if you will, the obsolescence that would creep into any office denied these contacts with the manufacturing world.

ON ADVERTISING

As tyros in the field of magazine publishing we find ourselves questioning many of the "sacred cows" of this highly specialized profession. We are particularly prone to depart from the angels and rush like fools into those areas of advertising hitherto considered sacrosanct. We are impressed with the thought that the purpose of advertising is to sell a product. Irrespective of the theoretical nuances and the involved philosophies of printed salesmanship we, as architects, have our own opinions on how to best present this product to us.

To begin with, the average advertisement in an architectural magazine has little effective impact. We pause for a moment to admire the more attractive presentations and to occasionally relegate a provocative idea (seldom the manufacturer's name) to the back of our vacationing mind. However, when in the heat of creative design the need for a product becomes apparent we reach not for the magazine but for our more disciplined file. From this galaxy of available items one finds its way on to our drawings and into our specifications. As professional men we are not greatly impressed by the cleverness of an advertisement nor by its location in a magazine. To be included in an architect's file is infinitely more valuable than inclusion in a hundred "inside back covers." For this reason and contrary to the adamantine dictates of the agencies we are placing our advertisements in the center of our magazine from where they may be easily removed for filing. Thus may they reappear at the precise moment of greatest value to the architect and the manufacturer. We are doing this because we sincerely desire that those who advertise with us will thus reap a greater reward.
CLOSER REINFORCING SLEEVE

In order to assure proper reinforcing of standard frames for closers... the Steelcraft distributor can reinforce frames with this sleeve for surface hardware requirements and give instant service.

This is another of the many advantages gained from the use of Steelcraft metal doors and frames. Write for other ideas... and the name of your technically trained Steelcraft distributor.

The Steelcraft Manufacturing Company, 9017 Blue Ash Road, Cincinnati 42, Ohio, U.S.A.
To accent your creative design...

RUSSWIN

...the doorware that lives up to your reputation
At the risk of overdoing this convention bit we, the architects who edit this magazine, would like to add our few cents worth.

A.R.A.'s previous conventions were milestones in the progress of the Society. From the first hopeful gathering of the clan five years ago in Kansas City to the array of fact, frivolity and friendship awaiting you in Chicago on the eleventh is progress indeed. We are proud of this presentation and in particular the item of friendship. Our philosophy of architect helping architect here finds fruition. No architect exposed to the manifestations of this philosophy can completely return to the narrow, combative and truly unhappy attitudes that too often characterize competition within our profession.

We are trying to practice what so many have only preached.

To be with us in Chicago will be to see for yourself. This is an invitation from the Society of American Registered Architects to all architects everywhere, and in particular to the doubting Thomases and those who correctly see in us a threat to an unfortunate status quo.

And to repeat, we promise you a wealth of information, a good time and a glimpse of what friendship between all architects could do for our profession.

Invitation to see for yourself at the Edgewater Beach Hotel, Chicago.

September eleventh to fourteenth
MR. WILLIAM CLOSE has been a creator of distinctive interiors since 1933. Representing such firms as Nathan Strauss, John Wanamaker and Irving & Casson, he has done considerable work for the state department, Columbia College and more recently, the United Nations Building. Three years of wartime service as expeditor for the Navy contributed to his practical concept of interior decoration. Much of his work has been done through architectural offices.

The profession of interior decoration is an anathema to many architects. Occasionally this is justified. We are all familiar with the superficial and the ineffectual which characterize much interior design but almost invariably this is the work of the dilettante decorator possessing neither knowledge of nor sympathy with the architecture that produced the space. Actually, the craft of interior decoration is a valid one and a legitimate member of the architectural family. It accepts the role of child and not the father.

The ancient Greeks, seconded by scholars of the middle ages, established a science of priorities which remains unchanged. "That which treats the greater is indeed the leader." It is obvious that architecture performs the primary and greater part and so, except in the case of poor architecture, the decorator should contribute to and advance the architectural concept. The competent professional does just this.

This is a day of complex structures. The architect sensibly draws on the abilities of those whose sciences were devised to serve him. These services are many and some can effectively come into being only after years of training and a wealth of practical experience. The amateur with a "flair for decorating" is the joke of my profession but the joke, unfortunately, inspires little laughter. This is the sort of thing that causes you, the architect, to consider lightly, if not at all, the services of still another engineer, one who deals in optics, furnishings and harmonics.

The picture is improving. The larger firms are establishing departments of interior decoration under competent professionals. Too often, however, the duties of the decorator are delegated to some member of the organization whose flair for design can never substitute for the missing years of specialized experience. The smaller firms are too often guilty of the false economies that send a boy to do a man's job. The results may be passable if not inspired but this is hardly the objective of a dedicated architect. I can only see this as a lack of communication between your profession and mine.

Too often an ill considered scheme results in an impractical set of specifications. The wrong selection of material and furniture is as much the rule as the exception. The absence of a philosophy of decoration or a lack of appreciation of human variables may result in an academically acceptable interior which is at the same time totally unacceptable to the client. This sometimes results from insufficient probing of the client's personal preferences but more often it is the result of his limited knowledge of decoration potentials and supply sources. Even as you with your Sweet's Catalogs and the continuous bombardment of brochures advertising methods and materials, so must the decorator's knowledge be current. I must be aware that on the opposite side of the world is the precise thing needed to complete your decorative scheme. Not only must I know that it exists but I must be aware of the means necessary to economically place it at your disposal. Only by such knowledge of potentials and methods can I, the decorator, bring to final fruition the concept your structure suggests.

For the architect to abandon his project before the decorator enters is today's unhappy norm. The many decorative possibilities that might emerge from the meeting of two professional minds is thus forever lost. No one knows as well as you the subtleties and hopes that you planned into your building. It is possible that in the decorator's kit is the tool needed to complete this concept. A good decorator can act as an educated sounding board for ideas you might like to explore. He can assure you of their validity for he is the master of his craft as you are of yours. Experience has taught him to distinguish between the practical and impractical. He knows the pros and cons of a variety of treatments and the economics pertaining thereto. He knows techniques so detailed that you could not be expected to have familiarized yourself with them. Knowledge of quality and value is basic to his reason for being.

The decorator, as your consultant, guides you in the area of his specialty. The destination is a harmony of furnishings, surfaces and structure. Interior design ability is a fusion of talent, training and experience. It is more rare than plentiful but you, as an architect also schooled in aesthetics, will be quick to recognize it. You will sense a philosophy that permits no rationalization affecting the basic truths of design. With normal observation you will have no difficulty in distinguishing between the true professional and the amateur wearing professional apparel. In fact it is often the insistence upon professional apparel that reveals the neophyte.

The economics of interior decoration vary from those of architecture. The decorator can buy and sell and often has a show room for just that. Available to him are the discounts normal to merchandising. He may work for a flat fee or a percentage but more often his stipend is contained in the normal retail cost of the items which make up his decorative scheme. Thus your client avail himself of a specialized knowledge at no added cost.

Your decorator is available to you to the precise extent that you desire. These services need be no more than a single consultation or they can include a complete interior design package. This includes space and traffic analysis as well as decorative schemes, color charts, perspectives, samples, material presentations and costs. He can prepare detailed and tight specifications covering his work. He can establish a time schedule with proper integration into the demands of the progress of the total job. He is available for client consultation. He can select, purchase, expedite and install. This is the area of decoration.

None of us are unaware of the trepidation with which one profession watches another when it seems that trespass is involved. Admittedly there are designers and decorators who trespass in the realm of architecture. Much if not all of this will disappear when the boundaries are better defined and suspicion is replaced with mutual understanding and respect.
T. Munson's Capitol Office Building, Washington, D.C.

Howard Fiedler's 106 Room "Holly House" at Melbourne, Florida.


Arcadia Town Center, Arcadia, California by Marion Varner.

Women's Dormitory at Hampton Institute, Hampton, Virginia. Alfred Panepinto, Architect.

Eric Eriksen's Tri-State-Bank, Markham, Illinois.

Senior Citizens' Housing, Minneapolis. Liebenberg, Kaplan and Glotter.
Matt Howard's split level field house, part of a two million dollar building program at La Porte, Texas.

Chester Stark's Park Towers Apartments, River Forest, Illinois.

Latest of Wilfred Gregson's Hospitals, Atlanta's 500 bed G.M. and S. building for the Veteran's Administration.

Laundry building for Jacksonville (Illinois) State Hospital, Samuelson and Sandquist, Architects.

Bob Stickles' Residence Hall at St. John College, Cleveland, Ohio.

Newport Tennessee's Electric System Office by George Belleville.

Alfred Kastner's Atlantic Research Corporation, Alexandria, Virginia.

Foss and Hall's Messiah Lutheran Church, Fargo, N. D.

"Am Bodensee" a 256 room German Hotel designed by Martin Guttman, F.A.R.A.
CHEMISTRY and THE ARCHITECT


THE mother art, architecture, divides itself into two camps. There are the artists and there are the assemblers. We call the assemblers "the nuts and bolts men." What they call us won’t bear repeating. Actually both are necessary in the overall scheme of things. The artists of the profession, the Frank Lloyd Wrights and the Corbusiers, open new vistas and blaze new trails. The assemblers perfect, extend and convert these trails into well paved highways. There are a hundred assemblers for every artist. The assembler better fits the role of the successful man in today’s society. The artist usually dies broke. It is not illogical that you, the chemists, have greatly developed the arsenal of the assembler but have done nothing for the artist. The economic road concerns itself with the number of its travellers … and little else.

A scant century separates us from the days when the builders’ arsenal was limited to the ledger, the tree and overtones of impure glass and hand shaped metal. Today our office contains twenty feet of tightly packed catalogues describing tens of thousands of construction items, nearly all of which were in some way touched by the chemist … and you have but started. The average specification separates into some twenty sections. Each still needs your help.

Number one is usually excavation and backfill. This contractor would think it utopia were there some inexpensive ingredient that would transform organic earth into concrete. Inversely, his lot would be easier were there some way of dissolving boulders and ledge. Another early section is devoted to foundations and footings. Here there is the hope that concrete may some day possess a tensile strength, be free from pitting and dusting and finally that it be malleable in the manner of putty, removing the usual need for forms. In masonry it would be a tremendous step ahead were there available a truly waterproof mortar with adhesive tenacity so great that there would be no need for flashing. You have already taken the first steps in supplying us an epoxy base liquid flashing. Further exploration in this direction would uncover a tremendous market.

The problems that confront us in the related fields of waterproofing, damp-proofing and caulkng are great. We still do not have a trouble free, all purpose waterproofing liquid. It must be flexible and yet impervious to the corrodors. It should permanently bond to virtually any surface even though moist and within reason should not be affected by dirt. Many of today’s materials combine some of these qualities but none that I know of incorporates them all.

Framing materials are still wood and steel. The present methods of fireproofing wood are too expensive for normal construction. It does not seem too remote to hope that there will soon be a method for strengthening wood fibres and for hardening wood after it has been shaped. Equally attractive is the possibility of softening wood while it is being shaped. Steel is continuously undergoing experimentation and many of the newer alloys hold promise and yet it may be that the chemist will give us a stronger, lighter framing material and one that will not disintegrate under the heat of a burning building. The erection of frames has progressed from the peg to the nail, to the bolt, to the weld and is now at the door of adhesives. Most of us feel that a few years will find building frames being pasted together. To a degree, epoxies have already made this possible.

The manufacturers of windows have long hoped for a substitute for glass. It cannot be more expensive, it should resist breaking and should easily be cut into complicated shapes. There are a half dozen plastics now on the market that almost fill the bill but the precise one has not yet arrived. Perhaps the glass manufacturers will themselves provide the answer but it does seem a bit ridiculous that for a century unauthorized entrance to the usual structure demanded only something sufficiently hard to shatter glass.

Ceramic tile is still looking for the perfect adhesive. The perfect floor tile does not yet exist. Ceiling tiles installed by adhesives is seldom satisfactory over a long period of time.

The plumber needs a pipe that will expand in the event of freezing and will return to normal size when the pressure is removed. He needs the flexibility and longevity of copper without its cost. He is looking to the realm of plastics for entirely new conveyances of gas and liquid. He greatly needs a simplified means of sewage disposal that will eliminate extended filter beds and permit the erection of buildings in those areas where the soil has no absorption. Perhaps it is the chemist who will find the answer to our water depletion problem.

It would appear that great strides have been made in the production of architectural surfaces. Certain small construction has changed the appearance of our cities. There are hundreds of catalog pages describing a great variety of surfacing materials but other than the quality of light weight, they are not appreciably better than the walls of a century past. Brick, stone, wood, glass and metal, historic materials all. But look about you to see how few buildings are built without them. We have machinery to lift them higher and carry them farther, but we still assemble them much as did our colonial ancestors. Their virtues are few in number but they are significant. They are flexible, lending themselves to the many required architectural shapes by the mechanical in the field. They are relatively weatherproof for a long period of time. They expand and contract in moderation as the seasons change. They are relatively inexpensive — but they are heavy, demanding excessive footings. The relationship of manpower to completion time is far from satisfactory. The construction industry has been looking for improvement since the turn of the century. The architects think the answer lies in chemistry.

Little more can be said about paints and other liquid surface than has already been covered by their many manufacturers. There is no doubt about what is desired. In our uncountable and ever growing collection of tints, formula and trade names there is not yet the perfect liquid protective coat, the material that once used never need be replaced. Here too, the epoxies promise a step ahead. Whether this step will carry us to an all purpose, permanent, flexible material rests with the future … and you.

It would be possible to continue for an hour describing the many little and big things that would contribute to the building world. I have an idea that...
nothing I have mentioned comes as a surprise or is even slightly news-worthy, for all of these things are evident needs for the industry as we know it today. If they are evident to us, they are no less so to the research departments of your various companies. I believe the real question and the great unknown is in what direction is architecture going?

Reduced to simplest terms, “architecture is the purposeful encompassing of space.” The need is the father of the building. Expressed more familiarly, “form follows function.” Too many architects interpreted this to mean that not only should function determine the form but it should also limit it. The interpretation of the word “follows” permitted no latitude and a rather sterile architectural period followed, against which we are now rebelling. As is usual, the pendulum of public taste will probably carry us much too far into the realm of ornament but somehow along the way we are sure to experience a more human architecture than was permitted us during the past thirty years. I cannot quickly see a specific effect on chemistry except to suggest that the appearance of things will greatly affect their saleability. I think too that today’s better understanding of aesthetics will demand more than surface prettiness. It would seem to me that you have an opportunity to give everyday things an aesthetic character they never before enjoyed.

People have grown wheels. They have become nomadic. No distance on earth is particularly great. The philosophy of the family center, the homestead, is disappearing and in its place appear the apartment and the temporary home. This suggests that there will be an expanding market for the quickly assembled house. The migratory worker is no longer the laborer who goes all day in one strata of the large corporation employee. This suggests that these temporary homes must vary in quality. New techniques and new materials will be required. It would seem that the latter must come from the chemist.

As the problems of urban traffic become better organized buildings may go even higher. Vertical transportation is swift and businesses still seem to prefer to huddle in tightly knit sky scrapers groups. Urban building materials must become still lighter if we are to further pierce the clouds.

Contrarilywise industry is becoming rural. Enormous plants have sought the necessary space and greater safety in underdeveloped areas of the country. Already there is the threat of a new sort of factory town. It is the hope of my profession that they will be airy, clean, and livable communities, and possess none of the unfortunate characteristics that gave the words “factory town” its unhappy connotations. We will look to you for help.

There is always the possibility that architecture will be forced to move under-
ground. I believe it was a combination of mathematics and chemistry that created this compass so we will look to you for the means to live happily though subterranean.

All of which brings me to my personal belief in the future of architecture. The necessity to appear completely sane prevents me from often, and never before publicly, revealing in a fantasy that I believe will be a reality in a hundred years.

It was this opportunity to float around on cloud nine that made the invitation to speak here so very attractive. The invitation suggested that each speaker explore his field for the next ten years but in my profession it may be that far sight will suggest more immediate objectives.

Early in these pages I suggested that the chemist has contributed greatly to the arts of the artist. I have done nothing for the artist. I prophesy that this will change and I further prophesy that this change will open for human-kind, vistas far beyond my wildest imaginings. I think that here is assembled an audience that will not scoff and who may be tempted to reflect on the century past, from the ox cart to space travel, from smoke signal to radar, from the bleeding of the ill to antibiotics. Who then dares crawl as he looks ahead a hundred years.

The day is coming when there will be but one building material and structures will be shaped by air.

This will be a wondrous material. It will be of any color. It will be transparent, opaque or any degree between. From it will be blown opalescent cities of beauty beyond our ability to visualize, unless perhaps we go back to the days when we were kids and built some pretty fantastic things in the clouds. This material will have such tremendous tensile and compressive strength that the artist-architect will create any shape that beautifully encompasses the space requirements. A mile in the air will be common. Graceful shapes will be formed as a glass blower today produces silicon beauty. Whimsy will not be derided and limitations will only be those demanded by the organizational pattern of the community.

Polarization will control the sun and the rainfall will be diverted into cascades of fumifulent and illuminated decoration. Snow will disappear except where wanted and dirt will be electronically dissipated.

There will be no wires nor pipes as we know them. Voids for the transmission of gas and liquids will be integrated into the structural material. Energy will be invisibly directed to its every need. Moving streets and parklike plazas will exude the future automotive transporter to the thoroughways underground. And while the mind of man may be immeasurably quickened, his body will be permitted to slow down. The staccatto of today’s living will exist only where it is necessary for advancement and production. The home will once again be an oasis from the exigencies of living. The world has already become so small that a hundred more years will place its entirety just outside your threshold.

It will be quite a world, this composite of iridescent scintillating cities and lush foliage and if we do not in the meantime destroy ourselves, some such future is certain to be.

I wonder if you have guessed why I think this story is particularly pertinent for this group. Does it not stand to reason that when the artist-architect is freed from the limitations of structure, that his aid must then be the chemist? In the future city that I visualize, chemical formula will determine strength, color, transparency, texture and whatever else will make the material respond to the architect’s plan. It may well come about that the artist-architect will be a chemist altering the formula to correspond with the demands of the drawings. The year 2003 will no doubt be inhabited by owners who will still drive architects to drink with their requests for changes. How nice it will be to pass the back to the chemist in charge. Then, too, as change requires the removal of a structure I will guess that there will be a solvent which will return this variables building material back to its original form, ready for reprocessing and reuse.

As I look back over what I have written it does not seem so wild after all. You have already started down this road. You cannot help but go farther. It could well be that this prophecy comes not too soon. Somewhere there may be a laboratory, or a research group or even in some remote place a scientific group whose experiment will break through the wall that will give this world the perfect building material. I haven’t the remotest idea what it will do to our general economy nor to the manufacturers of our thousands of today’s materials, but I am certain that it will some day come, that the rewards will outweigh the losses and that the chemist will become the number one man in the construction field.

Tolar House

For a good proportion of our formative years Tolar House of Cleveland, Ohio, has worked with this Society. Their help in the organization of our conventions and our magazine has been substantial. Although they plan to devote a greater percentage of their time to their basic business of architectural porcelain panels and curtain walls, they have their assurance that their interest will continue and their cooperation will forever be available. And so to Ray, Tom and Larry thanks for everything and stay close by.
THE LAW AND THE ARCHITECT

CONTINGENT LIABILITY OF THE ARCHITECT

by J. J. Liebenberg, F.A.R.A.

WITHIN THE LAST DECADE the conventional fiduciary status of the architect as relates to his responsibility to client has come into close scrutiny. Architects are more frequently being included in lawsuits initiated by clients, by contractors and by the public as well. Recent cases that have come to our attention reveal distinct weaknesses in the area of liability relationship as far as the architect is concerned.

Some of us are prone to shrug off comments such as these, thinking that this involves the other fellow and not us because we are careful in our obligations. Even though this may be the case we still may have to engage legal counsel to protect our assets and our very license to practice. One unfavorable jury decision may prove to be cause enough for a judgment of incompetence or negligence.

Lawsuits have been started many years after a structure has been completed, and accepted. Nevertheless, the architect often becomes involved due to some oversight of maintenance or for the other reasons. A recent case where a person was injured by walking through a side-light of glass adjacent to a well-marked exit door with appropriate hardware, still cost the architect a substantial sum to defend his status. These claims usually base their logistics on incompetence or negligence in design. Such claims are based in many cases, where manufacturers have been sued for damages due to incorrect design of equipment and where injuries have resulted during the normal use of such equipment.

How can we protect ourselves in such cases? Good practice dictates that we should include requirements that provide for proper liability insurance coverage. Proper liability insurance coverage means that the Specifications shall state under General Conditions, that the contractor, the owner and the architect shall be covered by liability insurance, without reservations or exceptions. This can easily be done by endorsement on the regular policy. In addition, Errors and Omissions insurance is also a definite necessity. This policy, however, must be carefully examined and weighed as to provisions and exceptions. Certain policies do not provide full coverage.

In another recent case an architectural firm was sued under subrogation by a bonding company after it was established that the architectural firm did not follow through with reasonable care in preparing certificates for payment of the contractor's monthly estimates. After considerable legal expense, a settlement was finally arrived at in which the architect finally settled in a sum near $50,000. In this case proper Error and Omissions insurance would have been a valuable asset to the architect.

It is good practice to require that each and every request by a contractor for monthly payout, be accompanied by receipts from subcontractors and suppliers, including waivers of liens for the amounts set out in the contractor's estimate, as evidence that he has paid his subcontractors and suppliers. It is considered good practice that a provision requiring such data be set out in the General Conditions of the Specifications. Before final payment is made, the contractor should be required to provide a properly notarized affidavit, stating that there are no outstanding commitments or obligations as far as his contract with the owner is concerned, and that all have been paid in full for material, labor and services performed to the premises. A copy of such affidavit, included in monthly request for payment, could be mailed to the bonding company so that they are fully aware of the progress payments. The Society of American Registered Architects has prepared a new form which is a protective measure that all architects should utilize. Herein a copy of the form.

One of the largest insurance companies handling our errors and omissions insurance, when actually called upon to meet their obligation, had an architect subjected to cross examination by their attorney. They admitted they would take care of the situation, only to reverse their findings the following day, making it necessary to sue the insurance company to see that they properly complied with their policy.

In addition to the shiftiness of some insurance companies when actually brought face to face with a settlement, there is a new problem facing architects. Lawyers are beginning to find out that architects have such policies. They have also found out that architects are vulnerable. The Courts have been rather harsh in their judgment, making errors and omissions and professional liability insurance a definite "must" in the practice of architecture.

Another recent case included the architect in a suit by the owner for damages to the structure caused by incorrect installation of a vapor-barriered type of insulation, in that the insulation was installed upside down. The owner claimed negligence and incompetence in the part of the architect as well as the contractor. The judgment in this case was substantial. Errors and Omissions insurance of the proper type would have eased the burden of the architect.

In conclusion, it can be stated that an architect has the same responsibility and liability to his client as far as errors and omissions are concerned, or even as far as malpractice is concerned as that of the doctor and the lawyer. The fiduciary status rests upon the adequacy of the architect's performance and whether or not this performance was given with due care, and skill. In a lawsuit judgment depends upon a jury of 12 "good men and true." The practice of an architect must include protective devices as well as careful business practice relationship between himself and the client and contractor.

AFFIDAVIT OF CONTRACTOR

STATE OF

COUNTY OF

SS

deposes and says that he is the

(Title of Office)

of

the Contractor in a construction contract entered into between the Contractor and

the Owner, for the

And that he is authorized to and does make this affidavit on behalf of said Contractor. Affiant further says that all persons who have furnished labor in connection with this construction have been paid in full and that all men, laborers, materialmen and subcontractors that furnished any materials or services have been paid in full.

(Signature of Affiant)

Title

Sworn to and subscribed before me this day of , 19 .

My commission expires .

Notary

ACKNOWLEDGMENT OF SURETY

In consideration of Architect's Certification of Completion, surety waives any actual or implied responsibility of the Architect and Owner with respect to further determination that the contractor has paid his obligation for labor, material and services under the contract above identified.

(Authorized Signature for Surety)

Sworn to and subscribed before me this day of , 19 .

My commission expires .

Notary

Twenty-two
Frank Mahoney, F.A.R.A., has started his five year membership on the Massachusetts Board of Architectural Registration. It is expected that this appointment will contribute to the democratic philosophies pronounced by all architectural societies. It is regrettable that Frank's elevation to this position was so bitterly contested by the Western Massachusetts Chapter of the American Institute of Architects, the very group that he, many years ago, helped to found. The temptation to respond in kind is human but the descent to the level of a deprecator serves no good purpose. Rather, it is to be hoped that the failure of this vanity will inspire a bit of healthy reflection. Perhaps it will bring us one step nearer to the brotherhood of all architects for, without this, architecture can never become a true profession.

The decision to present a factual account of Mahoney's experience with his brother architects stems from the hope that it will reveal elements of guilt that have too often hidden in the guise of proper ethics.

The basic requirement for election to the Massachusetts Board is ten years of architectural practice. Mr. Mahoney opened his office thirty-five years ago. At the request of A.R.A., Governor Peabody, after a thorough investigation, nominated Frank. This nomination needed the approval of the majority of the Governor's Council. The Western Massachusetts Chapter of the A.I.A. organized opposition and publicized criticism to the extent that the Governor called a hearing to determine the truth. No member of the criticizing group appeared at the hearing and their charges were presented by two members of the Boston Chapter and an attorney whose first stimulation was that nothing said at the hearing should ever be a basis for court action. A written statement was presented claiming that Mahoney had never done a major job, that while working for Munson & Mallis the Security National Bank of Springfield, on which he had worked, had been taken away from the firm, that a garage designed by this firm had been forced to close because of structural deficiencies, that Mahoney had overcharged a client (the City of Northampton), that an earlier employer had found his work unsatisfactory and that Mahoney had permitted his seal to be used by another architect in the designing of a school.

Without exception these were lies. Mahoney established the fact that he had done work totaling many millions of dollars and included projects of some consequence. The Security National Bank proved to be under construction and has since opened with plaudits for the architects. The garage issue referred to a previous attempt by members of the Western Massachusetts group to discredit Munson & Mallis. The garage has never been closed except on Sunday and has been officially determined to be structurally sound. The disputed fee proved to be of political origin and was paid without dispute by a succeeding administration. The disgruntled "employer" based his allegations on two weeks of drafting done THIRTY FIVE YEARS PREVIOUSLY. The school in question had been completed in 1938. There were no Massachusetts registration seals until 1941.

Both the Governor and the Lieutenant Governor ruled that no evidence of either primary or secondary nature had been introduced that could disqualify Frank Mahoney.

The afternoon that the Council was to have approved Mahoney the Western Massachusetts Chapter of the American Institute of Architects filed charges of deceit with the Board of Registration and caused to be delivered to the council chambers a telegram detailing these charges. This could easily have caused the Council to terminate Frank's possibility of board membership but, in spirit of fair play, the action was tabled until the truth could be determined.

The charges were that in Munson & Mallis' brochure Mahoney's educational background had been misrepresented and that the initials A.I.A. appeared after his name. Even charges as trivial as these required rebuttal. Mahoney, like many of his contemporaries, had been tutored by an architect and an engineer and the graduation had been the completion of the required work and not a formal ceremony. The second charge merited elaboration. Frank Mahoney had been one of the original workers for a Massachusetts registration law. He was then a member of a Boston society that later became A.I.A. He was one of the founders of the Western Massachusetts group that later became an A.I.A. chapter. During the war years his membership lapsed. In 1932 he applied for reinstatement. His application was signed by officers of the Institute and he was assured of membership. A year's supply of the brochure in question was about to be printed and the anticipated A.I.A. was added to Frank's name. For reasons surmised but not disclosed, the very men who signed his application, friends for a quarter century, blackballed him and his application was turned down "without prejudice". Immediately an errata sheet was added to the brochure admitting the mistaken use of the initials.

The Board of Registration found no evidence of deceit and the Council confirmed the appointment.

It is intended that the reader shall evaluate these facts for himself and determine wherein lies the malevolence. One comment is pertinent. Frank Mahoney is not a wealthy man. The emotional and financial drain created by the weeks of calumny took its toll. Without the determined backing of the Society of American Registered Architects a great injustice might have been permanently contrived. This is food for thought.

The Society sincerely believes that neither the parent A.I.A. group nor the majority of its local offspring look with favor upon this sort of thing. In fact, their precepts clearly state "An architect shall not falsely or maliciously injure the professional reputation, prospects or business of a fellow architect."

These words are good. May they prevail.
The subject of my paper is primarily a comprehensive report on the two major concrete works involved in the construction of the Frazee High School addition at Frazee, Minnesota, which is now in the latter stages of construction. These two items of concrete work are the lightweight concrete folded plate roof over the gymnasium-auditorium and the tilt-up, precast, concrete wall panels with an aggregate transfer finish.

Our office originally received the commission for this project in 1959, but because of legal trouble involving the annexation of the Vergas school district located in the next county, we did not receive the go-ahead for final drawings and specifications until the full of 1959.

Due to this long delay the school district had a very acute shortage of classrooms, shops, science, home economics, and gymnasium-auditorium facilities, including all necessary equipment. With some 60,000 sq. ft. to be constructed and equipped from funds totalling $750,000.00, it was decided to first — remodel the existing small gym and student lounge in a cafeteria and kitchen and remodel the existing boiler room for new boilers, and second — utilize reinforced concrete to its fullest extent including all end walls and side walls, in that Frazee is located near one of the largest natural aggregate sources in the State of Minnesota. Thus all masonry work was eliminated, including any back-up concrete block or tile work. Thus, the new school addition did not have any face brick, common brick, concrete block, — no masonry whatsoever. Except where structural glass curtain walls are used for the natural lighted classroom exterior sides, all walls are of precast tilt-up concrete panels 3/4" thick, backed with 1" styrofoam insulation and plastered. A few walls were poured-in-place. The U-factor of the precast walls is 0.166, compared to a U-factor of .02 for a standard 12" masonry wall constructed of 4" face brick and 8" concrete block and plastered. Thus, there is over twice as much savings in heat loss with this insulated 3/4" concrete panel.

The finish of these concrete panels is either a rubbed-smooth finish with vertical striations or a rough reveal texture finish of exposed aggregate, obtained by the aggregate transfer method. The aggregate transfer is a method of obtaining color and texture in architectural concrete by embedding special, selected colored aggregates in the exposed surface. At Frazee the aggregates used were red and black granite aggregates of Cold Spring Granite Co. Briefly the aggregate transfer method of concrete surface treatment is as follows: (1) The granite aggregates are spread on the adhesive on plywood form liners set up for the various panel sizes. (2) Panels are then dried. (3) Concrete is placed and cured. (4) Finally the wall panels are lifted off the liners and placed in their wall position. The granite aggregates become embedded in and bonded to the concrete, thus releasing the bond to the adhesive when the panels are lifted out. There were also two instances on this project where an aggregate transfer texture finish was accomplished for poured-in-place walls rather than precast panels. This was done in a similar manner except that the aggregate liners were placed in the forms in a vertical position and were carefully removed after the concrete had been cured.

Other design data relating to the precast panels is as follows:

1. Type I or III (high early strength) cement was specified with type I used by the general contractor.
2. Fine and coarse aggregates were graded in accordance with architectural concrete specifications.
3. Concrete strength specified for the panels was 3000 psi at 28 days.
4. Panels were cast with exterior sides face down.
5. Lifting was done by the "4 point pickup or 2 point pickup" method with a spreader with anchor inserts located on the interior side of the panels.
6. Aggregate was fastened to the liners with a nitro-cellulose adhesive mixed with perlite to make it into a paste.
7. For the aggregate transfer panels, texture was of the "rough reveal" type accomplished by sand blasting from a distance of 5 feet.

In selecting the type of structure for the gymnasium-auditorium roof, it was feasible to consider long span reinforced concrete construction. Reasons were as follows:

1. Because of the lower insurance rates obtainable with fireproof construction.
2. To coincide with other concrete work in the decision to use precast concrete panel walls, rather than masonry.
3. The existing sand and gravel soil conditions, typical for the area, provided excellent soil bearing capacity for heavier column loads.
4. That the precast wall panels required additional lateral supporting concrete columns and pilasters, the structural members needed for vertical support of the roof construction were therefore dual purpose members.
5. By using a 4" lightweight concrete slab with 1" of styrofoam insulation and acoustical plaster, the U-factor of the roof would be 0.153 compared to 0.19 for standard steel roof design. This would provide a substantial savings to the school district in heating costs.
6. In that the structure was to also include a stage for auditorium use, the application of 1" acoustical plaster and the folds of a folded plate roof would provide excellent acoustics.
7. Final factors influencing the choice of a folded plate structure were uniqueness of the construction and the desire on the part of the architect to provide a modern school building of unusual construction.

On the basis of these considerations the framing of the roof of the gymnasium-auditorium consists of a series of inverted V-shaped folded plates of 96 ft. span and 12 ft. width from ridge to ridge. The height above the floor is 22 ft. The thickness of the plates is 4 inches. The overall depth of the folded plate is 7'-0" and the inclined transverse angle is approximately 20 degrees. At the sides of the gymnasium-auditorium, the plates overhang a distance of 3'-0", horizontally.

The inclined stiffeners at the column center lines are located on top of the V-shaped shells and act as thrust members to carry loads to the ties located at the top of the columns. The tie beams...
were precast on the ground, placed on top of the columns at the low point of the shells, with their overlapping, protruding bars welded, prior to pouring of the plate.

Typical tensile longitudinal plate reinforcing consisted of 3/8" balanced, spaced on 3 inch centers. These bars were 60 ft. in length, alternately placed in 3 end positions, 2'-0" apart, so that no two adjacent bars ended at the same point. At the ends of these 60 ft. bars, 10 #3 bars were placed, extending to the column center lines, and of alternate 18'-6" and 20'-6" lengths. Typical transverse reinforcing consisted of #3 bars at 12'-0" both ways and alternated at top and bottom in the middle 2/3 of the span and #3 bars at 6'-0" both ways and alternated top and bottom at the ends of the span.

The design cylinder strength of the lightweight concrete used in the folded plates was 4,000 psi. Lightweight aggregate was of the expanded shale type. Fine aggregate sizes were from 3/16 inch to dust and coarse aggregate sizes were from 3/16 inch to 1 inch. Original cement content was 6 bags per mix and this was changed to 6% to speed strength for earlier removal of transverse forms. Slump varied from 0 to 3 inch, and although this is considered quite stiff, it was sufficiently workable because of lightweight design. Wet unit weight of the concrete varied from 95 to 100 lbs. per cubic foot. Price of a cubic yard of lightweight delivered to the site was $24.00, compared to $16.00 for standard weight concrete. A total of 350 yards of lightweight concrete were used in the folded plate roof. Curing was accomplished by applying the first coat of plastic roof paint to the shell. Vibration was carried on continuously with 2 - 7300 rpm vibrators.

Each of the eight folds, plus the two overhanging ends, were poured at separate times thus construction joints with plastic strip were separated each fold. Three job cured cylinders and 1 lab cured cylinder were specified for each fold. Two of the job cured cylinders were tested at 3 and 5 days to determine if the minimum strength of 3,000 psi had been reached for removal of transverse forms. Job cured cylinders at 28 days averaged 4,400 psi, while lab cured cylinders averaged 5,200 psi. Impact hammer readings were also taken to verify strengths, but the thin 4 in. slabs proved that this type of testing was not reliable.

Forming was very simple and consisted of a series of inverted V-shaped sections, each 12 ft. in length, resting on ledgers attached to 12 inch diameter tamarack posts, 6 ft. on center, used for shores. Wire job cured cylinders indicated the concrete at a strength of 3000 psi, the 12 ft. section forms were lowered to the ground by removing the attached side ledgers on the tamarack posts, and hoisting the top of the form to the crane cable, thru a sleeve previously provided thru the top of the plate. The suggested forming layout on our plans as prepared by our office was followed very closely by the contractor.

Insulation was attached to the top of the forms so that the concrete would bond directly to it. Forms for two entire folds were constructed, then permitting the installation of reinforcing steel on one set of forms while concrete was being poured and finished on the other. This system also permitted four reuses of forms for construction savings. Shoring at the valley was specified to remain for a minimum of 30 days, thus lessening deflection problems.

In pouring the concrete from an elevated 5/8 yard bucket, a wooden baffle frame was deemed necessary to prevent segregation of concrete. This baffle frame was continuously moved along the sloping sides of the form. This frame, plus the reinforcing in both directions and the stiffness of the concrete made it possible to pour the concrete at a 50° slope. Now to some points on the structural design, in spite of the fact that roof structures are our most usual project and by far our most interesting, the basic concept of structural design is direct and simple.

In accordance with folded plate theory, each transverse slab span in a direction normal to the cantilever span, receives its vertical support from each adjoining slab, at the fold line. At every point there are two planes of bars so that the transverse slabs are always reinforced for both positive and negative moment to provide for non-uniform or concentrated loads. At the support plates are also reinforced to provide for 100% of beam shear - thus shear reinforcing being combined with the transverse bending reinforcing.

An analysis of stresses made use of the latest refinement involving the deflection on the transverse stresses in the slabs.

After studying other folded plate structures located in this country and making use of the estimated deflections, it was decided to camber the six middle valleys, two inches at the center, and one inch for the adjacent valleys and zero inches for the valleys resting on the side walls. After removing of shoring the plates came 3/4 out of the camber, and it is expected that plastic flow and live load will increase this another 3/4 in the next five years to bring the plates nearly to a horizontal position.

For the 96 ft. 8 in. span, the cantilever ends have been considerably longer. However, certain limitations prevented this. At the front, the building line is located 6 feet from the property line with Minnesota State Highway #87, and at the back a lower roof below the folded plate roof deemed "other cantilevers impractical."

CONCLUSIONS

On a project such as this success depends considerably on cooperation between owner, architect, and contractor. We feel we received excellent cooperation from the owner, in that they initially approved these uses of concrete and secondly they have not been sidewalk superintendents on the job.

We have received 100% cooperation from the general contractor, T. F. Powers Construction Co., of Fargo, North Dakota, who spent considerable time in research and study of folded plate and precast panel concrete work when preparing their bid, which came within the monies available.

The lightweight concrete cost an additional $8.00 per yard or a total of 8 x 350 yards = $2,900.00, this was offset by savings in handling lighter concrete, less foundation and reinforcing steel costs; and a future saving in heating costs.

Total concrete costs of the folded plate roof was $21,700.00. Total area of roof including overhangs was 11,350 sq. ft. Thus the cost of the entire roof was $1.91 per sq. ft. Actual gymnasium auditorium building area was 9,260 sq. ft., thus the cost of the folded plate roof for useable area was $2.18 per sq. ft.

Our office feels that with the experience we have received from this job that costs could be lowered somewhat by changing the shape of the folds.

Although it was mentioned that the structural design of this structure followed simple and standard design, it still consumed a great deal of design time in the architects office, particularly since this was our first folded plate and precast panel concrete project.

Some items we found out during construction were that the layout of the building, which was actually a school addition, did not lend itself to efficiency in pouring wall panels.

If the gymnasium auditorium would have been entirely separated from the rest of the school, costs for placing the panels and pouring the roof could have been less.

AN INVITATION

As of this date the American Registered Architect has received a wealth of interesting photographs of buildings and renderings by A.R.A. members... but as is often true with young organizations, this material has come from a small proportion of the members. It is not our plan to confine our space to this limited number of contributors unless you make it necessary by failing to supply alternate material. As a member of the Society of American Registered Architects these pages are available to you.

We are not competing with the more elaborate architectural magazines with their beautifully presented analyses of architectural innovations. This is your magazine. It is by and for architects. Let us know what is happening of interest in your part of the country. Send us snips and snips and snips! What ever you feel might interest other architects across the nation, but above all, send us photographs of your work. Otherwise it will appear that we are pushing a few of the more active members. This we don't want, and neither do they.

Ed.
Sonic Booms and Large Glass Windows

by

John W. Hoover and C. Allen Ross

Energy in some dynamic form was the suspected cause, but the pattern of damage was not believed to be that of conventional blast damage.

A search of the literature reveals that considerable work has been done on the nature of sonic booms and their affecting factors. Representative of this is the work of Warren (reference 2), Daum (reference 3) and Randall (Reference 4), dealing with theoretical aspects. The works of Daum and Smith, Mullens, and Kerr (references 5, 6 and 7) present some actual measurements of overpressures and time intervals in flight tests.

Fig. 1 - Idealized N-wave compared with typical form of blast pressure wave

Based on these works it may be properly assumed that the pressure variation with time, as a sonic boom passes a point, takes the form of an N-wave, if the point of measurement is many airplane lengths from the flight path. The maximum overpressure $\Delta P$ depends on the Mach number of flight, the distance to the flight path, the thickness-length ratio of the aircraft, and the ambient pressures of measurement and flight points. If the wave front is parallel to the surface on which pressure impinges a reflection factor of from 1 to 2 is applied to the overpressure. The time between maximum positive and negative pressure peaks, $\Delta t$, depends on aircraft size, speed, and distance from the observer. Figure 1 illustrates the pressure-time history of a typical N-wave compared with that of a typical blast pressure wave, shown by a broken line.

Measurements of the time lapse indicated that for a typical case of sonic boom caused by a fighter airplane, about 1/10 second elapsed between the positive pressure changes on the oscillograph traces. Two distinct audible bangs were associated with these pressure rises at beginning and end of the N-wave.

Behavior of Windows

To determine the natural frequencies of vibration of panels affected, a displacement pickup utilizing two electric resistance strain gages back to back on a light simple aluminum strip was placed in the center of glass replacement panels. The center was deflected manually, and the natural first-order vibrations were recorded on an oscillograph. Frequencies ranged from about 4 to 8 cycles per second, depending upon panel size. Damping ranged from low to very high, but no panels were critically damped. The types of mountings ranged from old, simple wooden moldings to new, modern aluminum clamp moldings.

Since the broken windows had periods of vibrations of from 5 to 8 second it seemed unlikely that resonance in the ordinary sense could be responsible for glass breakage. Furthermore resonance is usually associated with a repetitive driving force which is a function of time, more or less in phase with and close to the frequency of the vibrating system. The N-wave of pressure is non-repeating in a sonic boom.

A study was made of the center point deflection of an elastic plate, assumed to be simply supported on all four edges, under a time-dependent loading such as the N-wave of pressure normal to the surface. Standard plate vibration relations from Timoshenko (reference 8) were used in the analysis. Two phases were considered: I — the motion under varying driving pressure ($T<1$); and II — the free vibrations of the plate after the passing of the pressure wave, ($T>1$). Time was made dimensionless by using $T = \tau/\Delta t$ as the time coordinate. Plate coordinates and dimensions are shown in Figure 2.

Fig. 2 - Coordinate System of the Plate.

The differential equations of motion were solved to give displacements of the center point. These were plotted in dimensionless form against a parameter $C = W(\Delta t)$ in Figure 3. It is seen that greater displacements occur as $C$ increases toward 5. Maximum values of
displacement as a function of $C$ were obtained by differentiation of the displacement equations with respect to $C$ and are plotted in Figure 4. It is seen that the greatest displacement occurs when $C = 5.5$ in Phase II, after the pressure wave has passed. If $C$ exceeds 7.5 the maximum displacements occur in Phase I, during the time of application of the $N$-wave.

Fig. 3 — Variation with time of dimensionless deflection of the center of rectangular glass panels under pressure $N$-wave excitation, for various values of $C$.

Considering that maximum displacements with least energy input would occur if $C = 5.5$, calculations were made of center point deflections per unit of pressure rise, $v/\Delta P$, inches per psi, for rectangular panels of 3/8 inch plate glass. The flexural rigidity value used in the calculations was determined from experimental frequencies of actual windows, measured as previously described. The natural frequencies of various windows and the center point deflections in inches per psi of overpressure were computed. These are plotted on a logarithmic scale in Figure 5.

Fig. 4 — Variation of maximum center point dimensionless deflection of a rectangular elastic panel under sonic boom excitation, for various values of $C$. Phase I involves the time during which pressure is being applied. Phase II involves time after the $N$-wave of pressure has passed.

Figure 6 gives the natural frequencies of vibration $W$, in radians per second, for simply-supported, undamped, nominal 3/8 inch plate glass panels as a function of smaller dimension and aspect ratio. Figure 7 gives center point deflections, inches per psi, as a function of the natural frequency of a panel assuming maximum excitation by a sonic boom.

**Breaking Deflections of Glass Panels**

There appears to be little information available on failures of pressure-loaded glass. Orr's work (reference 1) gives some data, based on hydrostatic experiments, which may be used to estimate probable failure. It is seen that pressures required were quite high. The panels would have met the requirements of most building codes for wind pressures. It would be quite logical to conclude that the low overpressures of sonic booms, usually about 2 to 4 psi, would not break such panels. Experience has proven otherwise. Figure 8 shows broken windows similar to the size in the last line of the table above. It will be noted that not all the large windows in this new building were broken. Local shielding provided by adjacent buildings is suspected to have saved some of them.

For lack of a better allowable criterion the center point deflection values of the above table are used in subsequent discussions of probable breakage of example panels.

**Use of Graphs**

A suggested method of examining a proposed window for probable breakage using the figures of this paper will be given.

Although the intensity and timing of sonic booms which might occur in any given locality would be difficult to anticipate, reasonable assumptions may be used to check a particular window. Actual measurements reported by Kerr in reference 7 showed that overpressures of 4 psi were caused by flights at Mach 1.08 at about 6,000 feet and at Mach 1.11 at 10,000 feet. Since the use of aircraft capable of speeds at higher Mach numbers is common today the choice of a higher assumed $\Delta P$ is logical. A reasonable value, considered applicable to an aircraft flying at a speed greater than Mach 2 at typical flight altitudes, would be 10 psi. It will be recalled that the graphs showing deflections are based upon a combination of pressure and frequency which should give maximum bending of the glass. These should be the worst conditions for a given pressure.

It should be mentioned that when a large aircraft makes a very low altitude pass at high Mach number overpressures are expected to be high enough that glass may be broken by pressure alone, without the necessity of the dynamic effects considered essential for breakage at low overpressures. Engineering News-Record of November 19, 1959, described the half-million dollar damage done to Ottawa's air terminal building by an F-104 Starfighter flying over it. Like tornados, these conditions are unreasonable for design considerations.

As an example of the use of the figures, consider a window of nominal 3/8 inch plate glass, 72 inches high and 120 inches long. The aspect ratio $h/v = 1.4$. From Figure 5, for $a = 72$, $R = 1.4$, read $v/\Delta P = 34$ inches per psi.

For an assumed $\Delta P$ of 10 psi $= 0.0695$ psi the maximum center point deflection would be expected to be $v = 34 \times (0.0695) = 2.36$ inches. From the table of experimental values by Orr it is seen that a panel having a $a = 72$ and $R = 1.67$ had a center point deflection of 1.40 inches at breakage. It is concluded that the example panel would probably break under the assumed sonic boom conditions.

It can also be seen that a breaking deflection of 1.40 inches could be expected under a pressure rise $\Delta P$ of 6.2 psi or 0.0431 psi. The panel should survive a pass at Mach 1.1 at 10,000 feet, giving $\Delta P = 4$ psi, but a higher margin of probable safety would be desirable.

Suppose that the panel is divided into two equal panels by a stiff mullion. Now the small dimension $a = 60$ and the aspect ratio $R = 1.2$. From Figure 5 $v/\Delta P = 14$, and for $\Delta P = 10$ psi, still assuming the maximum excitation, $v = 14 \times (0.0675) = 0.97$ inches, about 40% of the value for the large panel. However the frequency $W$ of the smaller
whether the architect wishes to concern himself with possible sonic boom damage to large glass panels may depend upon location of his job relative to areas of operation of high-speed aircraft, whether there are design criteria which are more severe (and certainly more definite), or other factors. If these jet-age phenomena continue to increase in number and intensity he may find himself involved in some shock wave damage. Perhaps this paper will be of some assistance.

REFERENCES:
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