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OFFICIAL PUBLICATION OF THE ARIZONA SOCIETY OF ARCHITECTS, THE CENTRAL ARIZONA CHAPTER AND SOUTHERN ARIZONA CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS

DECEMBER 1957 Vol. 1, No.

4

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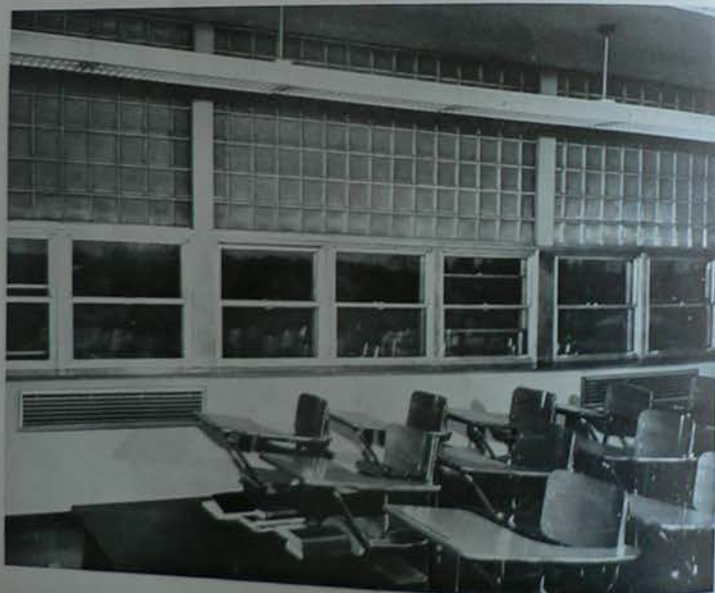
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Phil Stitt Managing Editor

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December, 1957
Volume 1, No. 4

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ARIZONA ARCHITECT

THE PRESIDENTS' PAGE



**CENTRAL
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CHAPTER**

Martin Ray Young, Jr.



**SOUTHERN
ARIZONA
CHAPTER**



Fred Jobusch

WITH THIS ISSUE, I bring toward a close a year full of enjoyment and happiness in serving as your president. It has been a full year and I am grateful for the opportunity that you granted me to serve.

This year has seen our mimeographed "Monthly Bulletin" come of age and grow into the fine magazine, *Arizona Architect*. This has been a very fine achievement for the members of both chapters and will prove a more effective tool for our public relations in the future.

We have been honored with the presence of our National Board of Directors, which proved such a success. Our thanks go to Richard E. Drover and all who helped him make the Board's stay a memorable event. I have heard from every Board member, all expressing their thanks for a fine time.

Steps have now been taken to establish a Chapter office. We not only have a post office box, but in the new phone book soon to be issued we will have a chapter telephone number so the public can find us more easily.

Above all, this year has seen our profession grow in stature, and we are beginning to prove to our fellowmen that the "Role of the Architect" is very important and necessary in their lives. Each of us has the opportunity every day to prove our worth. We can produce better architecture through better design and construction, through better understanding of the public, and through better client relationships.

It is up to each individual architect to prove our worth and ability to the public. The AIA is reflected in our individual actions. How people feel about architects stems from our own efforts in dealing with the people.

The new year brings in a new slate of officers, a new opportunity to do bigger and better things. We hope that we have added strength to the structure so ably built by our past officers and that the connections are such that the new regime can fasten on and build higher and better the Central Arizona Chapter.

December, 1957

WHEN I WAS ELECTED president of the Chapter in February, 1956, I had no idea that my term would extend until now. Otherwise I probably would have declined the nomination. However, it has been an interesting two years, and a period of steady growth toward Chapter maturity.

One of the first accomplishments of the Chapter following its chartering in March, 1956, was incorporation as a non-profit organization, a step that provides a distinct feeling of security and solidarity to the members.

We have been actively trying to acquaint the public and government officials with the work of architects and their profession. We have conferred with Tucson's mayor and council members on problems of building codes; worked with the board members of the Arizona Children's Home in formulating a master plan for future expansion; joined in panel discussions and conferences with the Tucson Home Builders' Association, Arizona Pipe Trades Industries, Electrical Contractors' Association of Tucson, and other groups in the building trades. In these activities it has been our desire to enlighten all concerned, bringing problems out into the open, and trying to solve them for the public benefit.

The Chapter has made frequent use of the film, *Architecture U.S.A.*, among civic, fraternal and church groups throughout Tucson. The picture has been most helpful to the public and the profession.

All of these activities and many more were made possible only through the excellent cooperation and enthusiasm of my fellow officers, board members, committee chairmen, and all the members of the Chapter. No matter what task was assigned, results were forthcoming. I thank them one and all for making my term as president a real experience that I shall always remember.

A chapter is only as good as its members are active, and I ask the continued support of the membership to our incoming president, Santry Fuller. I hope his term of office will be as eventful as mine has been.

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The Editor's PERSPECTIVE

WHAT ARE PROFESSIONAL ETHICS? And why? Webster defines ethics as "the science of moral duty; the science of ideal human character."

Every profession has its standards. The Hippocratic oath, for example, taken by recipients of the M.D. degree, is the doctor's pledge to use his highly developed skills and professional knowledge to protect the public interest. The medical profession goes much further, and any doctor who seriously violates its standards of ethics may be expelled from the Medical Association and deprived of his license to practice.

Certainly public interest would not be well served if doctors freely and openly criticized each other and attempted to take patients away from other doctors. After a patient has selected a doctor on the basis of his reputed skill and knowledge, no good can come from irresponsibly undermining the patient's confidence in his physician. His well-being often depends very largely upon that confidence.

The American Institute of Architects has a similar standard for its members and for like reasons. But where the medical doctor is bound by law to observe "recognized standards of ethics", the architect is not so regulated. But he voluntarily accepts this obligation when he joins the American Institute of Architects and subjects himself to its mandatory standards. If he violates those standards he may lose membership in the AIA, though he may still practice as an architect.

Thus the "AIA" after a name provides assurance to a client that the architect accepts the obligations inherent in the word "ethical". Among other things he may not accept any compensation for his services other than from his client or employer, and he may not engage in building contracting.

The reason for the latter standard should be obvious: an architect who does his own contracting may not be able to impartially serve his client in selecting the best contractor or in guarding "equally the interests of the contractor as well as those of the client."

There may be cynics who say that codes of ethics are designed to advance the interests of the professionals. If following "the science of moral duty and of ideal human character" gives an advantage to a person, let's have more of it. After all, the idea of ethics started long before the AIA agreed that "an Architect shall not knowingly injure falsely or maliciously, the professional reputation, prospects or practice of another."

In fact, nearly the same thing was said a very long time ago: "Thou shalt not bear false witness. . . ."

The ethical factor is a definite safeguard to the client. The surest way to find it in an architect is in a name that is followed by the letters, "AIA".

ARIZONA ARCHITECT

CHAPTER NEWS

CENTRAL ARIZONA CHAPTER

At their annual meeting December 5, members of Central Chapter elected the officers who will serve in 1958. They are:

President, David Sholder, vice-president, A. John Brenner, secretary, Jimmie Nunn; treasurer, Kemper Goodwin. Outgoing president Martin Young was elected to a three-year term on the Executive Committee, replacing Dick Drover, whose term expires.

New officers will be installed at a January social affair, the date and place of which will be announced to all members.

The chapter will not hold a meeting on the normally scheduled first Thursday, due to its proximity to the holidays.

On Thursday, January 23, members of Central Chapter are invited to join with those of the local unit of Arizona Society of Professional Engineers to honor new registrants in architecture and engineering. The dinner will be held at Valley Ho, Scottsdale, at 6:30 p.m. and will be addressed by a prominent speaker yet to be announced. Dave Sholder, and Dwight Busby of the Engineering Society, are in charge of arrangements.

Murry Harris, CR 7-7226 will sell a K&E 24-inch-arm drafting machine for half cost.

SOUTHERN ARIZONA CHAPTER

The annual chapter and corporate meeting of Southern Chapter was held at the Elks Club in Tucson December 4.

Santry Fuller was elected president for 1958; Edward Nelson will be vice president; Dave Swanson secretary; and Bob Ambrose treasurer. Burr DuBois was added to the Board in the spot vacated by Ambrose. New officers will be installed in January.

Warm tribute was expressed by the outgoing president to his fellow officers and committeemen. The membership, in turn, heaped high praise for the two-year stint handled so well by Fred Jobusch.

At the request of Tucson public school officials, Southern Arizona Chapter is undertaking to analyze the local school building situation and make suggestions to the board.

Emerson Scholer, chairman of the chapter's schools committee, has sent questionnaires to AIA members giving them an opportunity to express themselves freely on all facets of the problem. Answers, to be returned unsigned, will be tabulated and a report prepared for the school board and public.

With two bond issue defeats behind them, school officials are welcoming unbiased professional counsel on their problem. It appears to be a sound means of dealing with a persistent and growing problem.

December, 1957

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They Enjoyed Their Stay

"There is nothing like a trip to Arizona to puncture the ego of a Florida Cracker when dealing with the subject of sunshine. I do want you to know how much I enjoyed both the sunshine and the hospitality of the Arizona architects."

The above, from AIA Director Sanford W. Goin, Gainesville, Florida, is but one of dozens of letters received by arrangements chairman Richard Drower and other chapter officials and their wives, following the Fall AIA Board meeting at Scottsdale, November 11-16.

Arizona is glad they came. We hope they come again.



The western cook-out at Phoenix South Mountain Park was thoroughly enjoyed by all — the visitors and members of both Arizona chapters. Many lingered until after 11 p.m.

In his canvas-roofed living room at Taliesin West, Frank Lloyd Wright reminisced and philosophized with the national directors. With him, at right, Edmund R. Purves, Edward Wilson, Mrs. John N. Richards, AIA Journal Editor Joseph Watterson.



On their tour of Taliesin West, an architectural student describes the school program to (left to right): Bradley P. Kidder, Robert Eger and Polly Shackleton of AIA staff; Edward Wilson; Leon Chatelain; John H. Pritchard.



Eight

ARIZONA ARCHITECT



(Above) AIA Directors inspected the new facilities and work of students at Arizona State's Division of Architecture (left to right) R. Max Brooks, John H. Pritchard, Bradley P. Kidder, David C. Baer.



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ARIZONA ARCHITECT

THE ROLE OF THE ARCHITECT

THERE ARE THREE principal stages in the work an architect performs for a client: (1) preliminary study and planning; (2) preparation of working drawings and specifications; (3) securing bids to do the work, and then supervising to see that the construction fully conforms to the specifications.

This complicated process of converting a client's ideas into a useful, attractive building must be done within the reasonable limits of an available budget and in compliance with building and zoning codes or — where none exist — in accordance with all known factors governing health, safety and public interest.



EVALUATING THE CLIENT'S PROGRAM

The architect's first job is to assimilate all the ideas presented by the client and those which can be gained by his own direct study of the client's problem and need. Often, when the client is a committee or board (or even a husband and wife), there may be conflicting ideas presented. These the architect must reconcile. The ideas are obtained by conferences in his office, and sometimes by visits to the client in his own home, office, church, plant, or present store.

Visiting the Property. If the architect is consulted early enough he can apply his knowledge to selecting the site best suited to the needs. His knowledge of such diverse things as the sun's changing path, excavation and other site preparation costs, zoning ordinances, and construction methods help him suggest values, opportunities and obstacles the client may not recognize. In any event, the architect's visits to the property will permit him to plan for its best use.

Preliminary Studies and Estimates. After the architect has been formally retained to design the structure, he begins to pull the ideas together into preliminary

plans, with sketches that show size and arrangements of rooms and general characteristics of the building, indicating appearance and function.

Building codes governing such things as set-backs are checked with proper public agencies. Materials and the latest construction methods are discussed with the client and tentative cost estimates secured.

After trial and revisions, and evaluating the costs at each step and for each alternative, the proposed plan is finally evolved and agreed to.



PREPARATION OF WORKING DRAWINGS AND SPECIFICATIONS



Now comes the painstaking work of preparing working drawings and written specifications in minutest detail. These are often worked out in consultation with structural, heating, acoustical and other engineers, interior decorators, landscape architects, materials suppliers and others. Everything must be covered — from the cement formula in the foundations to the size and number of nails each roofing shingle is to receive. These drawings and specifications allow more detailed estimates to be made, and later will aid the contractor in preparing his bid and will guide him in actual construction. They form part of the contract between client and contractor and are used to check compliance as the architect inspects progress of the actual building.

Working drawings are checked with public agencies, lending agencies and others to be sure they comply in every detail with laws and other regulations that will be involved.

(Continued on Next Page)



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SECURING BIDS AND SUPERVISING

In order to insure the lowest cost consistent with the rigid specifications prepared, the architect usually suggests several dependable contractors, each of whom is invited to submit bids on a certain date.

When these bids are received they are carefully analyzed and submitted to the client with the architect's recommendations. The client may accept or reject any or all of them.

When a contractor's bid is approved, the architect assists in preparing the formal contract between the owner and the contractor. There are various kinds of contracts, and the one best suited to the problem is chosen.



Supervising Construction. When financing arrangements have been completed — often with the assistance of the architect, he issues a proceed order and thereafter keeps a close eye on the work being done. This does not mean constant, daily supervision. It does mean supervision at all critical stages of construction and frequent enough to be sure that all details of the working drawings are being followed explicitly. Often engineers are used to inspect at various stages of the work.



During construction the architect is on hand or available to interpret all drawings and specifications and handle unforeseen problems; to act for the owner in making adjustments for any desired changes or substitutions of material; to order replacement of any defective work or that which is not in accordance with the drawings and specifications. He checks and approves shop drawings prepared by suppliers from which they will fabricate parts of the structure.

The architect — after confining progress — approves monthly payments to the contractor up to a certain portion of the total that will be due.

Assistance is given in the selection of colors, and when the building is completed, the architect makes tests of the building's mechanical equipment. Thus he is sure that lighting and moving parts of the structure are in working order.

There is still more to do on the owner's behalf. The architect determines that the contractor's workmen have been paid and that no liens exist against the building. He gathers guarantees such as those on the life of the roof and mechanical equipment.

Then he approves final payment to the contractor and prepares the notice of completion to be filed with city or county officials.

The architect has completed another complex, little-understood service, in the process of which he has protected and served not only the owner, but public interest as well.



— AIA —

HOW TO SELECT AN ARCHITECT

Deciding to construct a building — be it a home, school or industrial plant — is usually one of the most important acts a person or group ever undertakes. Therefore the choice of an architect should be made with great care:

- Ask your friends whose homes or other buildings have been designed by architects.
- Ask the local chapter of the American Institute of Architects for the names of architects who have designed buildings of the type you have in mind.
- Look at buildings you particularly like, and inquire who the architect was.
- Read magazines and papers dealing with the type of structure you are concerned with. Watch for names of architects in your area whose work appeals to you.

When you have narrowed down the field, do some more checking!

Investigate the architect's professional standing. Has he subscribed to the ethical standards adopted by the American Institute of Architects? (See *Perspective*, page 8). Talk to several of his previous clients, if possible.

Visit the architect. See examples of his work. Decide if you like him personally and his ideas; whether others involved with you will enjoy working with him; whether you feel confidence in his ability.

If so, come to a written agreement, then trust his judgment as you would trust the competency of your family doctor.

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Thirteen

ARIZONA ARCHITECT

ARCHITECTS' FEES EXPLAINED

An architect cannot know in advance the exact cost, or even the time that will be required of himself and his staff of draftsmen and professional consultants and assistants during the complex and exacting process of designing or remodeling a building.

Long and varied experience, however, has shown several methods by which a fair fee may be established and costs estimated.

AIA architects (see page 6) may not "make up" inadequate fees by hidden profits on the side, such as from contracting or financial interest in materials they recommend. Rather, they devote their entire professional talent to the service of the client in return for a reasonable professional fee.

RECOMMENDED SCHEDULE OF COMPENSATION

The Central Arizona Chapter of the American Institute of Architects recommends the following as a guide in negotiating the Architect's compensation, for the purpose of insuring complete and efficient performance of full professional services. The Architect's best service can never be at variance with the Client's best interest. While these suggestions are not mandatory, experience has shown that they are

minimum standards if an agreement is to result equitably to both Client and Architect.

The Chapter recommends that the Architect's compensation be based upon (A) a percentage of the total cost to the Client of the completed work, or (B) upon a multiplier of the Architect's technical payroll in cases where percentage fees do not equitably apply, or (C) a fee-plus reimbursement for actual cost of services. Because of the expanding variety in the nature of professional services, Methods (B) and (C) are being increasingly used.

1. THE ARCHITECT'S PROFESSIONAL SERVICES consist of the necessary conferences, the preparation of preliminary studies, working drawings, specifications, large scale and full size detail drawings, the drafting of forms of proposals and contracts; the issuance of certificates of payment; the general supervision of the construction work. The Architect's compensation includes complete architectural services, together with electrical, mechanical and structural engineering services, based on conformity to applicable codes. It does not include full time superintendence, plan checking fees, permit costs, government ap-

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Fourteen

ARIZONA ARCHITECT

proval and inspection charges, costs of material and soil tests, surveys, or costs in connection with unusual problems.

2. WHEN A PERCENTAGE OF THE TOTAL COST OF CONSTRUCTION is a basis for the fee, the following percentages by general type of project are recommended for services requiring usual skill and care. The cost of performing architectural services bears no constant ratio to the building cost as modern building construction becomes growingly more complex. Work may be of great magnitude but yet small construction cost, or it may be simple to perform and of proportionally high cost. Different types of building require different probable costs in performing architectural service. The architect should investigate the nature of the project, informing the client frankly of the pertinent circumstances, as part of the fee negotiations.

GROUP 1 (Conventional Building Types) 6%

Industrial Buildings Hotels and Apartments
Warehouses Stores
Garages Offices
Markets Theaters
Schools Hospitals
College and University Buildings

GROUP 2 (Specialized Building Types) 8%

Churches Banks
Restaurants and Bars

GROUP 3 (Complex Building Types) 8-10%

Residences Monumental Structures
Store Fronts Furniture and Fixtures

3. FOR ALTERATIONS AND ADDITIONS the minimum fee for buildings in all groups should be increased by from 25% to 50%; but this increase in general applies only to the cost of the alterations to the existing structures and not to the cost of additions beyond the alterations.

4. HIGHER RATES THAN MINIMUM are regarded in the interest of both Owner and Architect in cases where the building problem is of greater than average complexity, thereby increasing the architect's costs, or where special services are required, or where the scope of the building project is relatively small.

5. IF SEGREGATED CONTRACTS ARE REQUIRED, thereby increasing the architect's burden of service, expense and responsibility, increased minimum fees should be changed in all groups. The minimum increase is recommended as 3 per cent of the value of the contracts segregated from the general contract but the increase shall not apply to the work remaining in the general contract. Complete segregation of contracts is not recommended.

(Continued on Next Page)

December, 1957



A rizona architects. Serving you and assisting you to protect your clients is a major function of A.T.L.

T he purpose of this column is to inform you of our services available to architects, and to acquaint you with tests we perform that can be of special value to you and your clients. Later in this series we will describe some of these tests. In the meantime, ask for our informative brochure: we will appreciate your interest and always welcome your questions.

Next month: "Soils Investigation"

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FEE SCHEDULE (Continued)

6. **PAYMENTS:** On completion of preliminary studies 20% of the basic rate computed on a reasonable estimated cost; upon half completion of working drawings and specifications, an additional 25% of said rate; upon completion and acceptance of working drawings and specifications, exclusive of details an additional sum sufficient to increase payments to 75% of the basic rate based on a reasonable estimate of cost; or if bids have been received, computed upon lowest bona fide bid or bids. The balance of the fee should be paid on a monthly or periodic basis during the course of construction.

7. **THE ARCHITECT'S COMPENSATION BASED ON THE MULTIPLIER OF THE TECHNICAL PAYROLL** is recommended when compensation for his services cannot be reasonably related to the project construction cost. Accurate and efficient records are maintained of time and salaries of technical personnel expended on specific work; and monthly billings are sent to the client based on a multiplier, usually three times payroll cost. Payroll cost should include technical personnel such as designers, draftsmen, staff engineers, specification writers and staff inspectors, at salaries customarily paid them by the architect. In addition, the architect is reimbursed for incidental expenses such as abnormal travel and subsistence, cost of models, printing costs in excess of normal amounts, and like items. Sums paid consulting engineers are reimbursable to the architect at cost. The architect's records are available for Owner's inspection upon request.

8. **THE ARCHITECT'S COMPENSATION BASED ON FEE-PLUS REIMBURSEMENT FOR ACTUAL COSTS** parallels the method of compensation common to certain professions and businesses, and is governed by the time, effort and skill contributed by him to a project, rather than by the construction cost. The Architect is also reimbursed for overhead in an amount sufficient to cover his indirect costs in performing the work (rent, telephone, indirect salaries, taxes, insurance, etc.) The compensation may be fixed by negotiation, may be rendered at agreed rates per hour or day, or may be a percentage of the construction cost.

9. The Central Arizona Chapter recommends the use of standard documents of the American Institute of Architects where applicable.

— AIA —

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— Marcel Breuer

ARIZONA ARCHITECT

STATE A-I-T PROGRAM

Arizona is one of the first states in the Union to examine and certify candidates for "Architect-In-Training." This is done by the Board of Technical Registration.

State law, Sec. 32-101 (3) defines "Architect-In-Training" as "a candidate for registration as a professional architect who is a graduate of a school approved by the board as of satisfactory standing or who has had four years or more of experience in architectural work of a character satisfactory to the board. In addition, the candidate shall have successfully passed the examination in the basic architectural subjects. Upon completion of the requisite years of training and experience in the field of architecture under the supervision of a professional architect satisfactory to the board, the architect-in-training shall be eligible for the second stage of the prescribed examination for registration as a professional architect."

Applications for Architect-In-Training can be made through the offices of the Board of Technical Registration, accompanied by a fee of \$15. Examinations are given twice a year—in April and October—simultaneously with the professional architects exam.

Examination given by the Arizona Board is in accordance with the syllabus of the NCAR Boards. Consequently, when a candidate has completed his professional examination with passing grades in all sections, he is eligible to apply to NCARB for his national certification. This certificate is valuable to any architect desiring to practice in another state since it simplifies the work of the examining board and expedites registration.

A certificate and number is given to each candidate successfully passing the A-I-T examination. This does not, however, grant him the privilege of practicing architecture or using the title "Architect." It is merely a step toward that end.

December, 1957

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will be held sacred because our hands have
touched them, and that men will say as they
look upon the labor and wrought substance
of them, "See! this our fathers did for us."

From "The Seven Lamps of Architecture"

—John Ruskin

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Finish — Shall be of three sizes of veneer: flat grain, beaded, or of quarter round, 1/4" thick and smooth sanded.

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SCHOOL CONSTRUCTION TO BE FEATURED IN JANUARY ISSUE

The January issue of *Arizona Architect* will deal with the knotty and vital problem of school construction.

In Arizona — the fastest growing state in rate of population increase — this is becoming a serious matter. School bond issues in both Phoenix and Tucson have recently been defeated, proving a public concern over the cost factor. Yet the oncoming tide of children must be educated and must have school buildings conducive to learning.

How can the need and the cost be reconciled? Can we afford good and adequate construction? Must or should school buildings be austere and free of ornamentation? What are the so-called "frills"? Who should pay for educating our young?

The State Legislature will be in session and debating these very questions. *Arizona Architect*, with articles by educators, public officials and architects, will try to shed light on the problem and will see that every legislator receives a copy.

School administrators, responsible for planning ahead for increased enrollments, will receive and welcome this special issue — a contribution by Arizona's architectural profession to the cause of better understanding.

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IN THE BOOK WORLD

"Indian Art of Mexico and Central America" by Miguel Covarrubias. (Alfred A. Knopf, \$17.50). Reviewed by Richard Drover, AIA, who traveled in Mexico in 1942-43 on the Francis J. Flynn Fellowship in Architecture, during which time he became involved in the archeological research which had been and was being done.

This is Mexico! I had previously thought that I knew the country and its history well. However, Covarrubias, in this last book written before his death, has convinced me that Mexico is a country not soon to be segmented into proper divisions of time and space. So much has been and is to be discovered that I only can wish to be a part of whatever may yet be learned.

This beautiful book, illustrated by the author, presents the plastic arts of the aboriginal inhabitants of Mexico (including Yucatan), Guatemala, Belize, Honduras, El Salvador, and Nicaragua; the Maya, Aztecs, "Olmecs", Toltecs, Tarascans, Mixtecs and many others, including some rich cultures only recently brought to light.



Human and animal motifs from Mixtec pictorial manuscripts. From a drawing by Covarrubias.

In his text, Covarrubias touches upon the conflicting theories of many individual archaeologists and schools of archaeology — and presents his own judgments, based on years of first-hand experience and — in many cases — of participating in the exacting labors of spade-and-dirt archaeology.

Beginning with an introduction defining and delineating "Middle American", the book then goes on under the general heading "The Early Horizon: The Pre-Classical Cultures" to examine the arts of the cultures known until recently as "Archaic", the remarkable work of the first agriculturists, the still mysterious "Olmecs", and the little-known peoples of Western Mexico.

In the second section of the book, entitled "The Classic Period", Covarrubias discusses the world-renowned architecture, sculpture and smaller arts of Teotihuacan, Monte Alban, Mda, the Vera Cruz

"Estimating General Construction Costs" by Louis Dallavia. Revised. (F. W. Dodge Corp., \$8.50). Reviewed by Robert W. Myers.

This book seems to be a very good approach on estimating. All job conditions, general economy, amount of work, labor, supervision, weather, equipment and delays are taken into consideration and can be adjusted to any local job and condition that might arise. Wage conditions and cost are also explained and a set of tables is provided for each type of work covered. Also the cost of operating a typical shift crew for each trade is shown. Costs for labor and materials are kept up to date by using a conversion factor which is found by looking up the applicable "index costs" in the tables and dividing by actual costs. This conversion factor is then multiplied by unit costs given in the tables.

The book is easy to read, clear and concise. It provides examples to illustrate each step and procedure. Most of the volume is composed of tables and suggested blank forms to be used in estimating. Dallavia suggests what seems fairly obvious, that a good working knowledge of each trade will assist one in selecting the most economical method for each specific type of work. For example, whether to use rebar concrete forms or erect forms, whether to place concrete with crane hoists and buggies or pump it.

The author has had 22 years of experience in estimating in the contracting field, which would account for the fact that his book seems somewhat more suited to contractors than to architects. An indication of this is that there is no method or coverage of subcontractors. The author states that these figures will come to the estimator from the subs. Traditionally, and with reason, however, the architect has limited direct contact with the subcontractors. Therefore, as far as the architect is concerned, the estimating of plumbing, electrical, roofing and similar work is not covered by the book, which, however, thoroughly covers the following fields: earthwork, reinforced concrete, structural steel, masonry, carpentry (both rough and finished).

The entire architectural profession suffers whenever estimates prove to be far wrong. This is true even though the discrepancy may result from factors entirely beyond possible anticipation by the architect. Thus, he owes it not only to his own reputation but to his profession to be as accurate as possible. This book should prove to be a real help.

Coast, and the Maya area of Yucatan and Guatemala. Finally, in "The Historic Period", he deals with the Toltec Renaissance, the wonderful jewelry and other arts of the Mixtecs, and the great metropolitan culture of Tenochtitlan (now Mexico City).

Illustrated by the author with 12 plates in full color and 149 black-and-white drawings, and containing a 64-page album of photographs, this book is well worth reading and possessing.



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