1970 has already proved that the 70's will be a dynamic decade. Our country is experiencing major changes in attitudes and priorities. The construction industry is evolving from antiquated techniques into techniques which reflect the great potential of human ingenuity. The nation looks to its architects to exhibit leadership. Several are...including several in Florida. In order to do this, architects need help. They need help from all people...the users of space (school kids, office workers...everybody), those who are responsible for retaining architects on behalf of their corporations or the government, construction industry representatives, allied professions, and other architects.

The talent of an architect affects the lives of many for long periods of time. Users of poor quality space rarely realize how much more enjoyable life could have been in an environment that was well designed. Good architecture pays. Good architects produce (within a budget!).

There are some exceptionally talented architects in America, and Florida can boast its share. They are helping their fellow practitioners and others. The professional organization which has drawn these architects together is the American Institute of Architects and the AIA influences life across our land. The members of AIA operate most effectively at "Grassroots" level...in their own community. Some of that effort needs assistance at State and national level. Those in positions of leadership at these levels had their "Basic training" in their communities and they continue to practice there on a day-to-day basis. The FAAIA this year is composed of several talented architects...they are organized for maximum team effort into "commissions," and our committees function within those commissions. The leadership team this year consists of men you will recognize as leading architects in their home areas.

Rudolph M. Arsenicos, AIA, Commissioner for Professional Society. Arsenicos is a practitioner in Palm Beach, who, on behalf of the FAAIA, has the responsibility of coordinating efforts with the student chapters, the convention committee, the programs which honor fellow AIA practitioners as well as craftsmen in construction, and coordination with the AIA chapters within the state.

Nils Schweizer, AIA, is Commissioner for Public Affairs. Schweizer heads his own firm in Orlando, and on behalf of the FAAIA has the responsibility of coordinating our public relations activities. We have a very active program this year to advise the members of AIA of the importance of being effective in public relations, and, under Schweizer's leadership we are carrying this through to an active public relations program at state level.

James Garland, AIA, is Commissioner for Education and Research. Garland is a member of an architectural-engineering firm in Miami, and on behalf of FAAIA has been the originator and stimulator of the architectural guilds functioning at the University of Florida and at the University of Miami. His position is that of liaison between the architects in practice and the professional schools in the state. Garland is also the President of the State Board of Architecture, and, as a board member of the FAAIA, he's our liaison with that body.

Howarth L. ("Hap") Lewis, Jr., AIA, is Commissioner on Environment. This was formerly known as the Design Commission and still concentrates on that comprehensive facet of architectural practice. Lewis is a practitioner in Palm Beach, and his activities with FAAIA this year will concentrate on the professional development programs...which are seminars specifically geared to improving the practice of architecture within the State of Florida.

Thomas H. Daniels, AIA, is Commissioner on Professional Practice. Daniels heads his own office in Panama City. He has had much experience with the activities of the AIA, and on behalf of FAAIA this year will be concerned primarily with liaison to the Florida State Board of Architecture. His Commission is also conducting an in-depth study of insurance programs which might be developed exclusively for members of the Florida Association of the AIA. He also will head liaison efforts with professional consultants and with the production of an updated fee schedule.

There are also standing committees...the Publications Committee and the Committee on Finance and Budget, both of whom are doing an outstanding job in evaluating our needs and reporting through the Executive Committee to the Board. The Executive Committee, composed of the officers of the FAAIA together with past president Harry Burns and Regional Director Hillard Smith are acting as the government liaison committee on legislative matters.

The FAAIA concentrates on three main areas of effort...legislative, educational (statewide as well as continuing education for the architect himself) and public affairs. The Executive Committee, the commissioners, and the committee chairmen as well as the board members are all dedicated to help the architect members of the AIA in the state of Florida to be more effective to all.

For some proof...look at the full page ad on Page 81 in the February issue of Time magazine (it's appearing in other leading magazines also). Help us prove it day-to-day...if you are a member of AIA, be active. If you are an architect who is not a member, join us. If you are a client...is your architect a member of the AIA? Are you satisfied with his answer!
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The FAAIA Board of Directors has approved the 1971 tour for its members. The 18 day tour EUROPEAN HIGHLIGHTS will include Paris, Pisa, Florence, Rome and London. Arrangements are being made by the FAAIA to set up short seminars with the local architects' association in Paris, London and possibly Florence.

A European Highlights Tour

The tour dates are August 9 — 26, 1971 and point of departure and return is Miami International Airport. The cost of $895 per person is based on a minimum group of fifteen people and includes, air fare, transfers, twin-bedded room with private bath, breakfasts, dinners, all gratuities, local taxis and English speaking guides.

Descriptive brochures may be obtained from FAAIA or the Lorraine Travel Bureau, 179 Giralda Avenue, Coral Gables, Florida 33134, (305) 445-8853.

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The purpose of the center is to train personnel and provide research, diagnostic and treatment facilities in the diversified yet specialized fields within chronic handicapped conditions in children. The center, when working at full capacity, is able to house 1250 staff members, patients and visitors. It is part of the University of Miami Medical Center Campus and is adjacent to Jackson Memorial Hospital in Miami. The facility will primarily serve the local community and the State of Florida at large, but being a pioneer in the field and due to its strategic geographical location, it will also serve as a center for training, aid and knowledge at the national and international level.

The center consists of three major elements, an eight story tower, a two story building and a plaza.

The curving, rising fins arose from clearly functional requirements: a large out-patient clinic had to be easily accessible, the administrative floor required one floor of 13,000 sq. ft., floors of approximately 10,000 sq. ft. met requirements of flexible space, study and laboratory spaces. Stacking these requirements to allow for a plaza and play areas gave form to the tower.

Most of the teaching is to be practical training. Due to the nature of the patients, these could not be brought to the classroom or directly exposed to a student group. Much is to be learned about the subject by observing him act while on his own. To overcome these difficulties, the design had to be developed around an arrangement of spaces for direct observation. These rooms have one-way mirrors into the patient rooms and classrooms. The mirrors are veiled on the patient room to minimize distraction. The observation rooms vary in size from the individual room to the small group, which may double up for other functions, to the large observation room which can hold a whole class and usually doubles up as a conference room.

Remote observation is achieved by a television network designed into the building. Any room has the capability of becoming a television studio by means of portable cameras. The learning resources area of the building has a closed-circuit television facility system which can handle up to 80 programs simultaneously. These programs can be monitored in any room in the two buildings, including the 120 seat teaching auditorium on the 8th floor. Eventually, they will also reach all parts of the medical campus via an already built underground communications raceway.

The two story building is designed to relate to the lower tower floors. This building houses a school and in-patient living areas for the children and their parents. Each classroom of the school is designed as a multi-use activity area and taking advantage of the Florida climate, opens out into enclosed play areas. The clinic and the school building, being closely related in function and use, are connected by an enclosed air-conditioned walkway on the second level.

The plaza presently will provide a place of repose at the intersection of two busy streets. With future expansion of the entire medical campus, it will become a central congregation point within the campus.

The teaching auditorium housed in the upper floors of the tower is an impressive space built as an amphitheater raising 16” at each row. The auditorium is designed with a sliding chalk board at the bottom level which may be opened into a preparation room into which patients may be brought and also has a demonstration laboratory counter. Above the chalk board is a screening arrangement for single or multi-image front or rear projection. Next to the front projection booth, there is a booth for simultaneous translation wired to earphones at each seat.

The exterior of the building is exposed concrete and bronze glass. The concrete egg crate acts as sun protection to the glass openings as well as structural support. The exposed concrete is treated with a clear water sealer thus obtaining a maintenance free exterior finish.

The plaza and play yards are pleasantly landscaped, scattered with concrete benching, and courts are created with concrete walls and steel gratings. A sculptural element for the plaza was created out of the enclosure of the air-conditioning cooling tower which sits on the northeast corner of the site.

In contrast to the roughness of the outside, the interior spaces, those in contact with the children, are soft. Carpeting was used throughout the clinic, classrooms, in-patient and office areas. In some areas, such as stairs and railings, carpet folds up and covers vertical surfaces as well.
DESIGN TEAM

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Project Manager — Jorge Delgado, AIA
Engineering — Art Martinez, P. E.
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Interview: Earl Starnes, AIA

EARL STARNES, ARCHITECT, OF MIAMI RECENTLY FURTHERED A DISTINGUISHED PUBLIC SERVICE CAREER BY BECOMING THE FIRST ARCHITECT EVER APPOINTED TO A HIGH-ADMINISTRATIVE POST IN FLORIDA'S GOVERNMENT. STARNES WAS FIRST ELECTED TO DADE'S BOARD OF COUNTY COMMISSIONERS IN 1964, WAS RE-ELECTED IN 1968, AND HAS SERVED ON VARIOUS ADVISORY COMMITTEES RELATED TO GOVERNMENT AND PUBLIC SERVICE. HE IS A NATIVE FLORIDIAN, A GRADUATE OF THE UNIVERSITY OF FLORIDA AND HAS MAINTAINED A PRIVATE PRACTICE PARTNERSHIP SINCE 1957 IN MIAMI.

What is the exact title of your new position?
STARNES
The exact title is Director, Division of Public Transportation, Department of Transportation, State of Florida.

Where does this fit in the hierarchy of state government?
STARNES
In the second echelon. The Secretary of the Department of Transportation is a co-ordinator of the four divisions in the department so it is one step removed from the Governor. The other divisions making up the department are: Division of Administration, Division of Transportation Planning and Division of Road Operations.

What would be your "job description"?
STARNES
Basically, the director will be planning, developing and operating systems for mass transportation in Florida. The operation may be direct or through subsidy to local agencies. He also serves as a filing office for federal aid coming to the state for all systems of transit: water, surface and air. The function of the department is to determine transportation needs as they relate to non-highway needs, and develop systems and ways and means of meeting those needs. It is a very broad commitment. The department is young and at this time is operating on a very small budget. This year the budget should be larger and will include a great deal of study money as well as actual program implementation money and direct subsidies to transit systems in need of such subsidy.

You said the department is young. What has been its brief history?
STARNES
It came out of governmental reorganization about 18 months ago as a new division under the Department of Transportation. In this time it has been barely staffed, but in the next few weeks the staff will increase to 24 people and over the coming months and years will approach a hundred or more persons.

What kind of staff development will this be?
STARNES
The staff development follows along two lines, research and development, which include planning analysis, analysis of programs, analysis of modes of transit and project implementation. Actually, project implementation comes under the Department of Operations which will be the field thrust arm for the DOT.

Are the terms "mass transit" and "rapid transit" interchangeable?
STARNES
Generally people do use mass transit and rapid transit to mean the same thing but I think there is quite a significant difference. Mass transit refers to a complete total comprehensive inter-motive public transit system whereas rapid transit simply implies high speed movement, not a complete system.

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FA What systems are now in operation in the state which might be called mass transit?
STARNES There are several bus systems, both privately and publicly owned which are probably the closest thing to mass transit. Also, the commuter air service is considered mass transit. But there is no really strong commuter system in Florida and this is one of the things we want to address ourselves to.
FA In what ways do you plan on approaching this job and what priorities, if any, will you set?
STARNES I think the priorities will have to run to where the people are and the problems are, so we’ll be directing ourselves to the urban areas: the impounded southeast coast, northeast Florida, Tampa Bay area and the far west. I think we’ll find these are the areas where we’ll spend most of our time and money in the next few years.
FA Will most of this effort be in research and planning and will any be in the operational phase?
STARNES Some of it will be operational in terms of experimental systems or pragmatic field applications. Most of it will necessarily be in research and development although we’re going to have field applications. For instance, we’re going to try a water transit system in Biscayne Bay and try mini-bus systems in cities all over the state to really see what sort of public reactions we get to these small 20 seat buses. We’ll be testing these reactions as well as the efficiency of the systems.
FA Do you have any specifics you hope to accomplish?
STARNES Of course, one of our real problems in Florida as well as anywhere else in this country is to accomplish the division of traditional sources of money for transportation, that is, taking the gas tax monies and converting them into mass transit operational systems, instead of just devoting them to highway construction. There will be a political problem, but the Governor’s office is committed to doing just exactly this, and emphasizing the need and planning for the development of mass transit rather than the promulgation of additional road systems that encourage the multiplication of ownership of private automobiles.
FA Do you think the creation of your department, and other factors in government reorganization, are a beginning in Florida to develop coordinated statewide planning?
STARNES Yes, I think that in almost every area of state government Florida is beginning to plan on a statewide basis. Not only transportation systems, but health care, housing and others are all being looked at by planners in a broad way rather than in a haphazard manner as in the past.
FA How would you co-ordinate statewide planning with local authorities?
STARNES We would anticipate in every instance attempting to establish, if they are not established already, local government agencies that would be most responsive to the need. By that I mean local agencies which have more than just local responsibilities. For instance, if we have a transportation system within a city we would look to the county as the agency to develop the mass transit system for the entire area rather than restricting ourselves to the geo-political boundaries of our municipal corporations. In south Florida we will begin to look very seriously at regionalizing transportation, including all three southern counties and perhaps ultimately without regard to the county boundaries. I think our efforts in every instance will be to regionalize the functional systems rather than letting the existing system of small or limited scope exist.
FA Turning to another tact, how do you think your background as an architect has prepared you for this new job?
STARNES I think that the architect is uniquely trained as a problem solver and accordingly he fits well as a professional in almost any kind of governmental applications, and I think most particularly where there are actual feasible problems being solved, the architect has almost a natural background for this kind of service. The administration of government is pretty much of a learned process through experience. So I think architects have a unique role here and should be more involved at administrative levels than they have been in the past.
FA What led you into the public service arena, first on the Dade Metro Commission and now in this new position?
STARNES I think just a basic interest in the environmental problems of the community, the planning problems of the community and the esthetic quality of our environment which was deteriorating through bad zoning practices, improper planning on both long and short range basis and the lack of emphasis on architectural design in public buildings. There were several circumstances of these natures which first got me involved in running for public office.
FA How could there be increased interest and participation in public service by architects?
STARNES I think architects, if they don’t want to involve themselves politically, should involve themselves with men and women who are involved politically in order to be part of a legislative process or an administrative process so that their ideas as architects will have channels through which they can be expressed. I think too often we withdraw from being directly involved with politics and I think that architects should be involved, not only because it puts them in a position for patronage architectural work, but because it puts them in a position of reviewing legislative and administrative decisions which affect their range of interests. And it builds for them an advisory position so they can assist in these decisions. In this new position I will be involved in architecture in what I consider its broadest sense at this point, that is, in administering at a level of government which concerns itself with environmental problems.
FA Do you anticipate getting architects involved during the course of developing your department?
STARNES I do anticipate it and in reviewing the budget there may be some program studies that might be appropriately handled by an architectural firm. Also, I think we will tend to involve architectural firms as consultants where their disciplines are applicable.
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BE IT RESOLVED, by the Florida State Board of Engineer Examiners and the Florida State Board of Architecture, that these two boards consider the following to be a proper and correct outline of professional practice applicable to the professions of architecture and engineering, and that these boards will exert their influence among the members of the respective professions to the end that these statements of principles be followed throughout the professions:

1. Architecture and Engineering are learned professions legally recognized in this State to promote the public welfare and safeguard life, health and property.

It is a matter of public interest that these professions discharge their professional duties with such fidelity to their clients and the public as to warrant the utmost confidence.

This statement is adopted therefore by the Florida State Board of Engineer Examiners and the Florida State Board of Architecture as rules of conduct which form an ethical guide for all licensed architects and engineers in their dealings with the public and their relationship with the members of both professions. All persons registered to practice in these professions in this State have the obligation to observe it as such.

2. That a registered Engineer should not have the privilege of calling himself or setting himself forward as an architect, or practicing architecture, unless he is also a registered architect, meeting the requirements for such registration for the State of Florida and that if he so designates himself as an architect without being registered, he is in violation of the law.

That a registered Architect should not have the privilege of calling himself or setting himself forward as an engineer, or practicing engineering, unless he is also a registered engineer, meeting the requirements for such registration for the State of Florida, and that if he so designates himself as an engineer without being registered, he is in violation of the law.

3. Each Engineer and Architect shall familiarize himself with the registration laws of both professions and shall not violate such laws.

Each Engineer and Architect shall undertake to participate only in those phases of a project in which he is competent by education and experience, and shall retain registered professional associates for those phases in which he lacks such competency.

Each Engineer and Architect is directed to refrain from signing or affixing his seal as Engineer or Architect to any plan, specification, drawing or other related document which was not prepared by him or under his immediate supervision.

4. It is recognized by these boards and the law that there are certain areas of overlap in the practice of engineering and architecture. However, each Engineer and Architect has the responsibility of giving the term "incidental to his practice" the strictest interpretation. This privilege shall not be abused.

5. Each Engineer and Architect shall assume the responsibility for compliance with all state, Federal and local laws, rules or ordinances relating to the projects with which each is engaged.

6. That these boards will make a continuing study of the existing laws of the two professions in order to coordinate more closely the qualifications and practice under the laws. Any legislative changes will be recommended jointly by these boards.

7. The respective boards have the ultimate responsibility for the implementation of the above Policy.
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I FINANCIAL MANAGEMENT FOR ARCHITECTURAL FIRMS
Orlando / March 27, 1971
$ PERSONNEL COST & OVERHEAD

PROFIT

CONSTRUCTION COST

1960 1970

THE SQUEEZE
Throughout the nation, many small as well as substantial architectural firms are finding that it is becoming increasingly difficult to function within a reasonable profit structure. The demand for increased services places an additional burden upon the practitioner. The rising cost of construction no longer offsets the parallel cost of personnel and overhead.

The architect does not find himself in a position which enables him to neglect consideration of the financial management of his practice. He has the responsibility not only to his staff, but to his community as well, to control his financial position. Management becomes the key to future success. This seminar is designed to inform the practicing architect of methods and techniques presented in the AIA Publication, "Financial Management of Architectural Firms."

Presented by John Konvalinka, CPA, Patrick D. Murphy, CPA, and Charles E. Hemphill, CPA, all representatives of Arthur Andersen & Company, nationally known accounting firm, who authored the manual under the direction of the Institute, the seminar speakers will discuss:

- Overall firm management.
- An improved method for calculating compensations.
- How to estimate project retail value before contract negotiations.
- How to exercise more efficient project and manpower control.
- Newly developed accounting procedures for handling billing.
- Payroll and outside payments.
- The reporting of time and expense.
- The preparation of financial reports.

The morning session of the seminar will consist of a slide presentation to give an overview of the entire financial management system. The afternoon will consist of a workshop session exploring in detail the ways in which a principal architect can install and use the financial management system in his firm. Numerous illustrations of forms and reports showing the new procedures and systems in actual use will be made available. Informal discussion periods will prevail for as long as any of the architects would like to ask detailed questions regarding the system or its application in his firm.

II DESIGN PROFESSIONAL AND THE LAW
Gainesville / April 30, 1971
Ft. Lauderdale / May 1, 1971

What do you have to lose? A lot: Money, Practice, Professional Reputation

Considering the increasing amounts of litigation now piling up in the courts against architects and engineers engaged in the construction industry, architects, their attorneys and consulting engineers, will not want to miss this timely and highly informative seminar. The most vital answer to litigation problems lies in the education of professionals before-the-fact rather than legal action after-the-fact.

Conducted by the eminently qualified George M. White, Vice President of the AIA, the seminar is an outstanding event of the seminar series for 1971. Architect, lawyer, engineer, Mr. White holds both B.S. and M.S. degrees from M.I.T., M.B.A. from the Graduate School of Business of Harvard University and J.L.B. from Western Reserve University. Mr. White has practiced as a registered consulting engineer and registered architect in Cleveland since 1948 and is also active in association work, licensing, insurance, education and writing in all of his fields.

The course outline includes such subjects as:

- Introduction to Law
- Law in its proper perspective
- Owner-contractor-architect inter-relationships
- Common law and statutory civil law
- Law and equality

CONTINUED PAGE 22
Torts
Definition
Traditional approach
Legal wrong vs. moral wrong
Negligence as primary professional liability concern
Libel and slander

Arbitration
Comparison with civil law

Contracts
Definition
Express vs. implied-in-fact contract
Mistakes
Offer and acceptance
Unilateral vs. bilateral contracts
Silence as assent
Consideration
Assignment of right and delegation of duties
Conditions

Comparison of Tort and Contract Problems
Privity
Tort arising out of contract
AIA Standard Documents
Contract significance of drawings and specifications

Case Examples
To illustrate legal principles

III PROJECT FINANCE AND LOAN DEVELOPMENT
Orlando / July 16, 1971

Financing techniques are changing more rapidly and more dramatically than any other aspect of land development. The many problems associated with lender participation in equities, standby commitments, gap financing, and real estate syndications will be discussed at this seminar. Requirements imposed by lenders and the role of the developer also will be considered.

Highlights of the program include:
1. The Land Development Decision Process
2. Tax Advantages of Real Estate Investments
3. Market Research Studies
4. Project Feasibility Analysis:
   a. Income & Expense Date
   b. Debt Service Computation
   c. Cash Flow vs. Taxable Income
   d. Sample Project Studies
5. Land Acquisition Techniques
6. Project Ownership & Organization for Profit
7. Financing Debt & Equity
8. The Costs of Inadequate Project Management
9. Sales and Rentals Management
10. Tax Consequences of Investment Liquidation.

Each of these key areas of interest will be reviewed in language familiar to the architect.

The program will be conducted by Dr. Carl J. Tschappat, Chairman, Department of Real Estate and Urban Affairs, Georgia State University and Paul B. Farrell, Jr., an attorney, urban planner and graduate architect, who is currently at Cornell University doing research on land acquisition strategies for New York State's Urban Development Corporation.

PDP Schedule & Registration Fee

I FINANCIAL MANAGEMENT FOR ARCHITECTURAL FIRMS
Date March 27, 1971
Location Gold Key Inn, Orlando
7100 South Orange Blossom Trail

AIA Member Firm Registration Fee $50
Additional AIA Firm Participants $10 each
Non-Member Registration Fee $75

II DESIGN PROFESSIONAL AND THE LAW
Date April 30, 1971
Location Student Senate Room
J. Wayne Reitz Student Union
University of Florida, Gainesville

AIA Member Firm Registration Fee $35
Additional AIA Firm Participants $10 each
Non-Member Registration Fee $75

III PROJECT FINANCE AND LOAN DEVELOPMENT
Date July 16, 1971
Location Gold Key Inn, Orlando
7100 South Orange Blossom Trail

AIA Member Firm Registration Fee $50
Additional AIA Firm Participants $10 each
Non-Member Registration Fee $75
AIA member firms may participate in all three PDP seminars at a reduced pre-registration fee of $120. Individual participants from each firm may vary depending upon the area of interest covered. This package plan does not preclude individual seminar registration.

In order to encourage greater participation from within the firm, a nominal registration fee of $10 for each additional attending member from a participating firm has been established.

Seminars will begin promptly at 10:00 a.m. and conclude about 5:00 p.m. depending on audience participation with regard to questions. The noon meal, coffee breaks and distributed literature is included in the registration fee. Travel and lodging shall be the responsibility of the registrant. Advise your accountant, attorney, engineers, mortgage lenders and bankers of these seminars. They may wish to take advantage of one or more of these PDP seminars.

FAIA will have available at the PDP seminar on Financial Management copies of the AIA publication “Financial Management For Architectural Firms” for purchase by participants who have not already obtained a copy. The price to AIA member firms is $9.60 and to non-members $12.00. Please indicate on the registration form your desire to have a copy reserved for you.

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Gentlemen, it would be most presumptuous to address your group as an expert in all the facets involved in building school facilities. I even question whether anyone could set himself as the prophet that will lead out of the wilderness of such complex and ever-changing domain.

Whatever statement and opinion I make, there will be many among you who will know a heck of a lot more about it than I do. So much of what I will say will be obvious and "old hat" to one or another of the specialists that make up this gathering. Please be patient and tolerate it, recognize that it is done for the sake of clarity.

My role as a speaker is to help bridge and interrelate the judgment that you as a group combine. And I hope that I can help in this effort, almost as a jack of all trades with an experience that at least has given me the opportunity to acquire a better than average understanding of the problems that confront the various specialists in the huge team that makes the construction industry of our country.

This bridging, this recognition of the roles performed by the various specialists, is vitally important because radical and even rash decisions are being urged that may not fully take into account the consequences of such decisions, and may be more harmful than beneficial.

Design of schools based on sub-systems that are carefully designed to interconnect efficiently is a logical trend, and one that will be more and more developed and extensively used.

This, Systems Approach, cannot be considered a new conception. After all, one of the outstanding virtues of our Building Industry — especially as compared to the same industries in other countries — is the large degree of standardization and modular coordination of building elements that is done in our country.

The difference, which the virtuous and noble sounding slogan "Systems Design" infers, is in the intensity of efforts aimed at coordinating the principal trades that can best be characterized as the subsystems of the whole building project.

The objective of my talk, then, is not to denegate or derogate such thing called "Systems Approach" but to review the pros and cons in its present stage of implementations in Georgia. Such evaluation will be based on its stated objective: to reduce costs and time of construction.

And before proceeding, it may be of value to review some of the concepts and some of the jargon used in the promotion of this "Systems Approach" panacea.

Everyone involved and experienced with the building construction process is aware that all too frequently installing one item is made unnecessarily laborious because something else doesn’t fit, or is in the way. It is only logical that if an effort were spent, such problems could be simplified or at least minimized.

One of the cliches used in the jargon of this nascent trade is "interfacing," a most apt word borrowed from the electronic industry. The goal is that, for example, the ductwork of HVAC and the lighting fixtures in the ceiling system should be so modularly coordinated that there occur no special problems fitting them together. Thus, that these three systems "interface," that they be designed to fit together.

In fact, in most of the so-called "Performance Specifications" of systems approach is the requirement that any given sub-system interface with at least 3 or 4 of each of the other prescribed sub-systems.

As a recent issue of ENGINEERING NEWS-RECORD noted, there have been so many proposed "Systems Approach," each with its own initials: SCSD, GSSC, SSP, SEF, RAS, BOSTCO, URBS, GHSP, that they form quite an alphabet soup. Furthermore, the results have been all too frequently disappointing.

CONTINUED PAGE 28
And such disappointment stems from a failure of such given systems from delivering their sole objective: economy. They have not brought school costs down at all. They have, more generally, cost more than orthodox designs — and this, without taking into account possible higher maintenance costs. The only attempt in our state brought out the simply astonishing fact that a few such GSSC “Pods” built in Hall County cost 60% more than similar facilities built by conventional systems — and what dismaying “Pods” they were.

Why have systems failed to deliver, when they are based on such logical grounds: the standardization of components that are modularly coordinated?

The one obvious general answer is that quite probably they so alter the complex and sophisticated way our building industry operates that they cause greater mark-ups, in the unit prices used to estimate the cost of a project. This very general and abstract sounding idea deserves elaboration.

It is impressive and astonishing when the process of our Building Industry is analyzed. A vast array of specialists design and erect our buildings — each optimizing their efficiency by their specialization. And all such work is coordinated by contractual agreements that constantly attempt to clearly define the responsibility of each member of such a large team of specialists.

One claimed virtue of the “Systems” approach is the benefit of the slow and laborious process of experience and evolution, honed to a fine degree, the quality of which is best indicated by the fact that though our labor wages are the highest in the world, our building costs in actual dollars are not drastically different from those found in other countries. It is this speaker’s opinion that one of the chief weaknesses of the laudatorily promoted “Systems Approach” may stem from an inadequate regard for this carefully developed contractual system in our industry.

These general statements can be better explained by one or two illustrative examples.

One claimed virtue of the “Systems” approach is the benefit of pre-purchase. A given building authority can pre-purchase various building components which may expedite building schedules and possibly accrue the economies of circumventing a middle man.

Such benefits are not that easily obtained.

The economy of mass purchases, of large volume discounts may be possible for one thing — only in the very special cases where there exist a school building authority that can plan in such large scale. This is not feasible everywhere. It is not applicable in a large proportion of our school systems wherein the financing responsibility is more localized.

However, in evaluating the assumed economy it is wise to ask the question, “Who can buy at a cheaper price and manage it at a lower cost, specialists in the field of purchasing and installing building materials, or school organizations that have among its many responsibilities the additional one of pre-purchasing building products?” When specialists or professionals manage the pre-purchasing they may be able to buy more cheaply if the cost for managing such chore is lower than that charged by the contractor.

It takes time to administer such functions, and it would be most fallacious for a school organization to neglect evaluating their own cost of doing such function, and not deducting it from the first appearing savings.

And to that cost must be added the contractor’s cost of administering the same. Anyone who knows anything about construction management knows that a certain sum of money must be added to the bid estimate for the time it must take to coordinate the use of WHATEVER ANYONE may have pre-purchased.

In brief, then, excepting the discount accrued when mass purchasing is possible, to this economy must be deducted many costs easily overlooked, and one can well question if any actual economies accrue.

But, the shortcoming of such procedure is that other unnecessary problems may arise.

For example, if the material is faulty in any way, ordinarily the owners will look to the architect for correction, who in turn, as the owner’s agent, will demand compliance with specifications from the contractor. The owner-architect could care less who made the mistake, whether supplier, or sub-contractor. That is the contractor’s problem, who is asked to live up to the contracts.

But in pre-purchasing, this relationship is confused. Although the owner, the school organization transferred the supplier’s obligation to the contractor, certainly it would not be reasonable nor fair to make the contractor responsible for the supplier’s fault. The supplier, at least, was not the contractor’s choice.

And other complex problems can also arise. It is a fortunate building project wherein the low bid comes in below cost estimates. Too often they do not, particularly in a market in which it is evident that prices fluctuate and increasing construction costs are a way of life.

If low bids come in markedly above estimated costs, it may even be necessary to reduce the size of building facilities. If this happens, the project will be stuck with the excess amount of pre-purchased components, not to neglect the important fact that the project is wedded to such purchase which will obviate the possibility of substituting lower cost alternates.

Last but not least is the coordination of delivery schedules. It is just as bad for a contractor to have materials delivered too early as it is for them to be delivered too late.

On the one hand there is the problem of damage of items that are stored at the site, that can interfere with efficient work progress, and on the other there is the loss in labor time if material delivery is not properly scheduled.

Scheduling a building project is one of the most important and basic chores of a contractor. Any action by the owner that intrudes or affects such operations is undesirable. It can be done, and it is done in large high-rise projects and the like, usually with owners that retain highly qualified specialists to do such pre-purchasing functions. But most school authorities cannot afford to have an organization to do it for them.

This long-winded example is not given to suggest that pre-purchasing is bad, per se. But to indicate that it is no easy problem. To point out that very carefully prepared contract documents are required which, in this writer’s opinion, are not
adequately being done in the current GSSC documents.

When a general contractor states that pre-purchase gives rise to a “loss of control,” it is faulty and superficial to assume he made it because he fears he has lost profits. His claim is legitimate. It voices a sound concern.

This speaker would also like to elaborate on the statement made to the effect that as presently implemented there is a reduction in competitiveness.

The margins of profit in supplying and installing building components is kept low because of keen competition. Competition keeps everyone “honest.” Any adoption of systems, of whatever claimed virtues, that reduces competition, will inevitably fatten overhead and profit margins.

Therefore, any preparation of Systems Contract documents that will reduce instead of increase the number of competing products, will inevitably have to pay the price of less sharply estimated prices.

Corollary with this is the serious concern this speaker has over the selection of components in a building system that are tailor-made for such systems.

A recent issue of ENR reported that one school organization was faced with the need of replacing two or three light fixture grills and found it could not buy that few a number. To replace them, it had to buy one hundred!

The unit price of a building product goes down as the volume of sales goes up—this is a truism of mass production. But it is relevant here when noting the advantages of using stock building components in the construction of a building. Not only competition, but manufacturing volume will keep costs to their lowest possible levels.

The tailor-made aspect of so many components of the “Building Systems” design may be one of the chief reasons why the actual costs of such systems have failed to live up to their promised lower costs.

What about the architect’s viewpoint? (And it is a foolhardy architect who would claim he speaks for the whole profession.)

What could be some of the factors that may cause him deep concern?

Not the restriction in design. Granted that some of the systems approach schools lead to elephantine volumes that dismiss the exploration of means to make a school environment more than a machine for learning or that even the outward appearance is limited to a counted few alternatives. The fact remains that an architect is a professional who, given the problems and limitations, will submit a solution that best solves the circumstance.

He will, however, be highly concerned over the following:

Pre-purchasing can cause great concern depending upon circumstances, for reasons previously discussed. But the hazards of bids exceeding cost estimates can be very burdensome and costly to an architect, since he has the need to have his designs come within a given budget. It is costly because of the time required to revise designs and contract documents.

The Architect may also be concerned over the restrictions a system will impose that will limit his ability to reduce cost. This may sound almost contradictory. But it should be recognized that an experienced firm attempts to be abreast with fluctuating costs, and will base his designs on such knowledge. This is the reason why so many excellent schools are being built at astonishingly lower costs than even the hoped-for costs of, say, the GSSC Pods. The secret for the great efficiency of our building industry stems from that constant inventiveness applied by the whole industry to reduce costs, and an inventiveness experienced architects adopt.

Then there are two other much more subtle factors. For one thing, the open space school concept has not been accepted by all educators, some of their misgivings having validity. Again, such a remark must not be misconstrued to infer that this speaker criticizes or questions the very valid nature of the open plan. He merely must point out that it may not be suitable for all circumstances.

But a second factor may be considered only this speaker’s opinion offered for whatever value or reasonableness may be found in it. There is a tendency in the adoption of, say, the GSSC Pods to have Architect documents be much simpler, more schematic. At first blush this may seem a good thing, since it is bound to lower architect’s cost.

But precisely because they are simpler and more schematic there will be a strong tendency for the Architect to devote much less time to a basic responsibility for good design: detailing. That challenging, exasperating and time-consuming chore in which the Architect visualizes minutely how each piece of a building will fit, how well it will do its job and how orderly it will look.

It will be only too tempting to relegate that responsibility to a mechanic who cannot have the same concern.

Finally, what have been the results of all this systems approach? One must quote the bitter statement made recently by Mr. Charles D. Gibson Chief of the Bureau of School Planning in California’s Department of Education.

“The fact that the press and certain project participants claimed cost of 15% to 20% less than conventional construction was not only unfortunate and misleading, but it also was a bare-faced lie.”

The SEF (Study of Educational Facilities) in Toronto, Canada, has also been a disappointment. After having built over 1.3 million square feet of buildings they look back and find that, for one thing, since the interfacing did not anticipate all possibilities, inadequate interfacing often occurred taking more, not less time from the higher management level people of the architectural and engineering firms. There were delays in completion. But most gratifying of all, communities that disregarded the SEF results have been hardly inspiring. The costs per square foot turned out to be a shocking $25.19/SF to $26.16/SF (depending upon method of computation). In comparison, accordingly not aesthetic, a handsome school designed by the fine firm of Bull and Kenney, also a long-span open space facility, but built using prestressed concrete members, cost $16.10/SF an astonishing difference, made more astonishing if the two buildings were to be compared.

CONTINUED PAGE 30
This admirable architectural firm has a careful record of school costs based on many years of practice — an impressive record. But particularly relevant is the fact that, using conventional construction, they consistently show costs lower than even the mythical $20.00/SF many of the Systems have promised.

In conclusion, then, it must be reiterated that this is not a brief either against the development of improved and more extensive interfacing of sub-systems, and certainly in no way should even a criticism be inferred against the exciting and revolutionary approach to the open space dynamic environment of the new school concepts.

It is, instead, an appeal that the greatest of mistakes would be made if the GSSC adopts contract documents that either freeze on one or two chosen systems, and excludes others.

The noble sounding phrase “Building Systems Design” may sound new, but it must be remembered that today our industry is in fact constantly increasing the effective interfacing of components sub-systems. But precisely because it is a complex industry, such improvements will not occur because of a brilliant insight of one or more prophets. It will take place, as the dramatic past improvements have taken place, by the combined efforts of the army of specialists that are eagerly looking for ways to reduce costs, to increase their competitiveness.

If lowering construction costs is the name of the game, the efforts should be to promote competitiveness, and inventiveness, to try to use components easily available — shelf items so to speak; and to continue to define clearly the relative responsibilities of the various members of this immense team. In short, to continue the fine honing of cost reduction.

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Through the development of a series of 64 building problems or patterns, the Center for Environmental Structure hopes to improve the pattern language which architects have available for design — the system of three-dimensional relationships which generate form within the environment. By combining the relevant patterns using a sort of "spatial grammar", the architect can create a structure specifically suited to its functions and its users. Only through environmental research can the architect develop his own pattern language, and it is only when this research is an intrinsic part of design that it is alive and useful to society.

As urban centers grow, noise pollution increases. Architects will increasingly find themselves faced with the problem of limiting sound levels through new construction materials and techniques. Surveys have revealed that noise pollution is one of the most difficult to eliminate because noise levels are often determined by factors the architect cannot control — time of day, traffic, etc. However, noise paths and receivers can be modified by the architect through the erection of barriers, more efficient land use patterns, and the modification of buildings. While often called upon to work with lighter materials, the architect will have to reduce noise as well as keep the cost down — a problem which may call for drastic changes in the building industry, including a change from a "craft industry" to increased prefabrication of buildings.
"I'm a person of the eye — of the hand. I consider myself an artisan, a doer. I do things with my hands.

"What is the miracle of life is the regeneration of people, the way it works in cycles. I think everybody now is being asked to know so much — the young people and especially architects — to divert their energies to such a degree that it must be completely mind-boggling to a young man just starting his profession. And so too for those of us who are at an age where we should be producing that work we were put on earth to do and instead for some reason find ourselves victimized by what the world has become.

"What is the point of architecture? For me to say that the point is to make perfect little stars, little gems of things — I can say very well because it is all that has been given me to do. I know as a fact that my big contribution to architecture is an inborn sense of scale and humanity, love, whatever, that I can give any building of any size. And I know that I would be better doing great and huge complexes.

"I'd like to say something about the young people. I believe in young — the whole concept of young and youth and I participate in it in New York City. I think an architect has to be an involved person in the civilization of his times.

"In some of these lean years to keep from going out of my mind I've recaptured some of the innocence and original things I had about painting and sculpture. Really, I live several complete and different lives. First as an architect and then two nights a week I paint and two nights I sculpt. Through this means I've learned about young people and I've learned a great deal about architecture. For instance, one of the centers of architecture certainly is that it is sculpture. In fact, it is one of the biggest sculptures in the world.

"You know, architects in this country don't really talk together. They can pretend it, but they don't. When you look at the architecture of this country, we're so conditioned to the concept of equality, of making people "equal." We are not equal! There has to be an award of excellence.

"I think a lot of what I'm saying boils down to is that it isn't all that irrevocable. Life goes on. There have been many times in my life of despair and just seeing some of the things man has built made me realize how unimportant it is where the plane takes you back to, or the stack of bills you have to pay. It's a long life. I think we have to hold on to the magic, the mystery, that great art is about.

"I've learned from the young people this whole concept of irreverence. I really love it! It keeps you honest! I learn most from people who don't even respond to what I do because then I worry and start to work harder.

"Maybe these kids. In the way they have of growing, which I don't completely understand but is obviously linked together, somehow history has drawn them to be a moving force together. I don't know that they do, but I hope they really talk together and if they do, then out of all this can maybe come accomplishments of much truer, greater degree than these little fragments we seem to make in this country.

"It's marvelous, this hope of what's coming. But if what's coming is a dehumanizing, working less kind of thing, then people like me are out of it. I sometimes think I'm a man of another age and it's too bad I live now. I'm sort of wasted and I've wasted fantastic time arguing points."
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Clouds of smog hover over our cities. Cities once crowned by canopies of stars. Grime on our windowsills and soot in our eyes no longer surprise us. And we bring tiny babies out of sterile hospitals into an atmosphere so polluted, plants choke on it in a matter of weeks.

America, the beautiful. Our America. The crisis isn’t in our cities; the crisis is in our hearts. With a change of heart, we can change the picture. AIA/American Institute of Architects

Send this page to your Congressman and ask him to support enforcement of our air pollution laws.