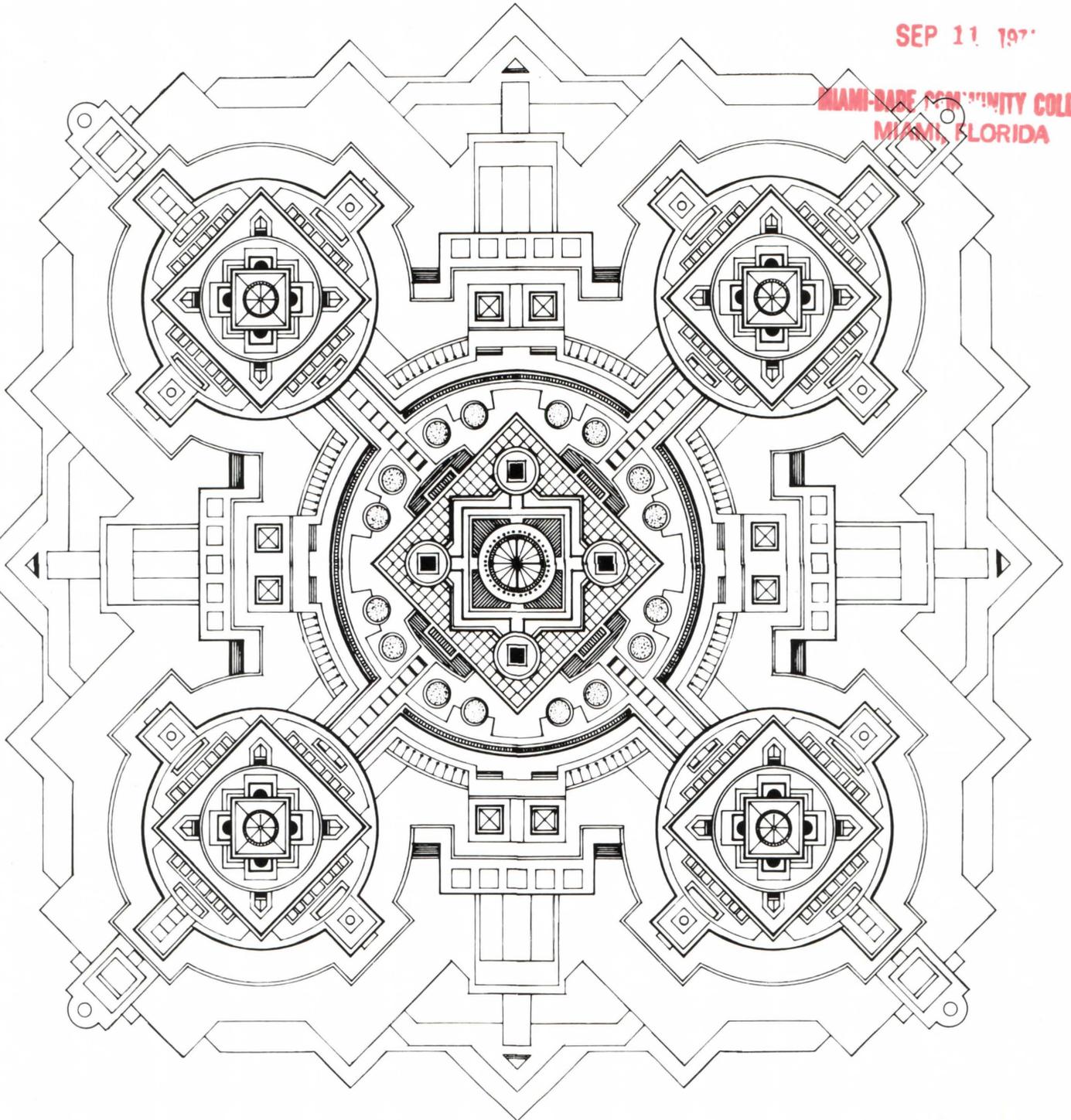


FOR REFERENCE  
NOT TO BE TAKEN FROM ROOM

SEP 11 1974

MIAMI-DADE COMMUNITY COLLEGE  
MIAMI, FLORIDA



"COMPACTNESS, AS A PLANNING CONCEPT, WITH ITS ECONOMY AND DIVERSITY, MAY OFFER MANKIND THE ONLY RATIONAL SOLUTION TO URBANIZATION AND ENVIRONMENTAL PRESERVATION."

LOWELL LOTSPEICH

If you're building a school and it's needed now, here's a way to go that offers speed of construction plus other economic and functional advantages.

**STRUCTURAL INTEGRITY...** precast-prestressed construction provides maximum protection from violent winds, and minimizes the hazards of fire. **ECONOMY...** exposed precast-prestressed provides a finished surface for ceilings and walls.

Pic #1...East Side Elementary School  
Haines City, Florida  
J. Clyde Parlier, Architect, Lake Wales, Florida  
Pic #2...Stanley Switlik Elementary School  
Marathon, Florida  
Architects: McCoy-Severud-Knight-Boerema  
Miami and Key West, Florida  
Glenn Allen Buff, A.I.A., Partner in charge of design.

**MECHANICAL, ELECTRICAL AND AIR CONDITIONING...** there's plenty of room for integrating these systems within the structure.

**ENERGY CONSERVATION...** precast-prestressed concrete provides excellent thermal insulating qualities. **SPACIOUSNESS...** precast-prestressed gives you greater flexibility for open planning. **AVAILABLE LOCALLY...** precast-prestressed units produced in your area using local labor and materials are readily available.

You'll save in reduced **CONSTRUCTION TIME** costs too. Take East Side Elementary. The entire structural frame of the school... over 23,000 square feet...was erected in just 14 working days.

For more information on how precast-prestressed construction can help you, contact Market Manager, General Portland Inc., P.O. Box 22348, Tampa, Florida 33622.

**Florida Cements  
General Portland Inc.**



## **Problem: Today's crowded schools Solution: Precast-prestressed concrete**



# The Florida Architect

Volume 24 Number 4 July/August 1974

FOR REFERENCE

NOT TO BE TAKEN FROM STUDENT ROOM

SEP 11 1974

MIAMI-DADE COMMUNITY COLLEGE  
MIAMI, FLORIDA

4

Advertisers

6

High Hopes For High Density  
Lowell Lotspeich, AIA

9

The Human Yardstick  
William R. Brockway, AIA

10

Energy Conservation By Design

14

A-E Selection Report

THE FLORIDA ASSOCIATION  
OF THE AMERICAN INSTITUTE  
OF ARCHITECTS

FAAIA OFFICERS FOR 1974

Frank R. Mudano, AIA, President  
1189 N. E. Cleveland Street  
Clearwater, Florida 33515  
(813) 446-1041

James E. Ferguson, Jr., AIA, Vice President  
President Designate  
2901 Ponce de Leon Boulevard  
Coral Gables, Florida 33134  
(305) 443-7758

Nils M. Schweizer, FAIA, Secretary  
P.O. Box 1120  
Winter Park, Florida 32789  
(305) 647-0545

Arthur A. Frimet, AIA, Treasurer  
208 South 28th Avenue  
Hollywood, Florida 33020  
(305) 981-0545

1974 BOARD OF DIRECTORS

Thor Amliie  
James Anstis  
John M. Barley, II  
Howard Bochiardy  
William Brainard  
Ellis Bullock  
Bill G. Eppes  
Robert G. Graf  
Mays Leroy Gray  
Robert B. Greenbaum  
James A. Greene  
F. Jack Harden  
Thurston Hatcher  
Al G. Kemmerer  
Robert H. Levison, FAIA  
Steven C. Little  
Bryon G. McIntyre  
Robert A. Morris, Jr.  
Roger Pierce  
Henry A. Riccio  
Roy L. Ricks  
William L. Rivers  
George L. Rumpel  
Craig H. Salley  
Nils M. Schweizer, FAIA  
Donald I. Singer  
Frank F. Smith  
Francis R. Walton, FAIA

DIRECTOR FLORIDA REGION  
American Institute of Architects  
H. Leslie Walker  
1000 N. Ashley Street, Suite 806  
Tampa, Florida 33602  
(813) 229-0381

EXECUTIVE DIRECTOR  
Florida Association of the  
American Institute of Architects  
Fotis N. Karousatos  
7100 N. Kendall Drive  
Miami, Florida 33156  
(305) 661-8947

GENERAL COUNSEL  
(Branch Office)  
Mike Huey  
1020 E. Lafayette St.  
Tallahassee, Florida 32301  
(904) 878-3158

PUBLICATIONS COMMITTEE  
Frank Sheehy, Chairman  
Lyle Fugelberg  
Isaac Keith Reeves

THE FLORIDA ARCHITECT  
Fotis N. Karousatos/Editor  
John W. Totty/Assistant Editor  
Kurt Waldman/Photography

THE FLORIDA ARCHITECT, Official Journal of the Florida Association of the American Institute of Architects, Inc., is owned and published by the Association, a Florida Corporation not for profit. It is published bi-monthly at the Executive Office of the Association, 7100 N. Kendall Drive, Miami, Florida 33156. Telephone (305) 661-8947. Opinions expressed by contributors are not necessarily those of the Editor of the Florida Association of the AIA. Editorial material may be reprinted provided full credit is given to the author and to THE FLORIDA ARCHITECT and copy is sent to publisher's office. Single Copies, 75 cents, subscription, \$6.50 per year.

# Complete Reprographics Service

- *Blue Prints*
- *Micro Filming—35mm / 105mm*
- *Photo File Tracing*
- *Black & White Prints*
- *Photostats • Sepias*
- *Photo Drafting*
- *Photographic Reproductions*
- *Diazo Papers*

## AREA DISTRIBUTOR



**KEUFFEL & ESSER CO.**

*Drafting and Engineering Supplies*

## *Hamilton*®

*Drafting Room Furniture*

**THE MOST COMPLETE  
INVENTORY  
IN THE SOUTH**

*Pick-up and Delivery  
Miami Showroom*

*Open Saturdays 'Til Noon*



**T-SQUARE**  
**MIAMI/FT. LAUDERDALE**

635 S.W. First Avenue  
Miami, Florida 33130  
(305) 379-4501

415 N.E. Third Street  
Ft. Lauderdale, Florida 33301  
(305) 763-4211

## In Memorium

Dr. Robert S. Bolles, dean of the college of Architecture and Fine Arts at the University of Florida since 1966 died at his home in Gainesville Sunday, June 23.

Dr. Bolles announced his retirement, effective June 30, and planned to live permanently in Flagler Beach. He and his wife Georgia Coy Bolles have been long time residents of Flagler Beach.

A graduate of the Juillard School of Music in New York City, Dr. Bolles also held bachelor's and master's degrees and the doctor of education from Columbia University. As a member of the Florida Music Educator's Assn., he was a member of the state certification committee from 1950-1960.

A World War II veteran, Dr. Bolles was a commander in the Naval Reserves.

Listed in Who's Who in America, Dr. Bolles was a member of several professional organizations, Tau Kappa Epsilon social fraternity, the Gainesville Kiwanis Club and the First Presbyterian Church. Born in McCook, Neb., he received the "Notable Nebraskan" award in 1964.

Dr. Bolles is survived by his wife, Georgia Coy Bolles and two sons Robert Coy, 28, and John Lewis, 24.

## Advertisers

Caldwell-Scott Construction Co.

5

Dantzler Lumber & Export Co., Inc.

8

Dunan Brick Yards, Inc.

15 (Third Cover)

General Portland, Inc.

2 (Second Cover)

McPhilben Lighting

14

T-Square of Miami

4



# Who built one of America's showcase showhouses?

Same people who constructed Yankee Stadium and Nova University. Same people who built fifteen apartment buildings and motels in the last six years. Caldwell-Scott.

Makes sense to call us — for five reasons.  
Our South Florida longevity. Our work. Our cost.  
Our speed. And our empathetic banking and legal plug-in's.

## Caldwell- Scott

Construction Company  
8751 West Broward Blvd.  
Fort Lauderdale, Florida 33317 • Phone: 792-3000

A Subsidiary of  
 Gulfstream Land & Development Corp.



## High Hopes for High Density

Lowell Lotspeich, AIA  
Vice-President  
EDG Planning, Incorporated of the  
Environmental Design Group Incorporated

It would not be an exaggeration to say that the greatest majority of our "planned communities" have been either conceived or actually built during the past ten years. This is, in a way, an acknowledgement that the "art of community design", as a large scale involvement, is a relatively new one, and one that is receiving pitifully low priority at every level of our society. To criticize priorities is, of necessity, to criticize the persons or institutions responsible for establishing the priorities. At this point, it is neither meaningful nor necessary to enumerate the "culprits" but only to shed a little light on the magnitude of the problem and its dangerous social consequences.

It is my contention that the majority of our new communities, although esthetically improved, are disastrous failures from the human, or social, standpoint. The problem is one of the most complex issues of our times and our failure in this area is inexcusable. I believe part of the problem lies in our failure to understand the basic relationship between our built, physical environment and "community". As a society, we cannot continue to build or tolerate the irresponsible kinds of developments whose only objectives are to exploit the land and the people. We seem to do everything we can to assist the profit-motivated developer to reap his harvest, ironically, at the expense of the whole society.

A community must be more than a place to sleep if it expects to grow organically into a healthy, viable place for people to live. As our concepts of single-family subdivisions have mushroomed into plans

for whole new towns, we have carried the old thinking into the new area where it simply is not adequate. As land costs and demands for housing increased, we began building more medium density developments (6 to 15 units per acre) and as a contribution to "community", the developer would include a golf course and/or other recreational amenities. These recreational amenities were probably largely responsible for the increasing acceptance of higher density living by many people. On the surface, they may have seemed to compensate for the "short-comings" of a more urban life-style. In fact, they have been much over-rated in their effects on "community" and realistically best served the difficult marketing efforts of the developer. The point is that a golf course, or tennis club, is a nice accessory to a community, but to think that it will, in any way, "round-out" a project into the integrated, lively, viable place a community must be is totally false. Even these newer recreation-oriented communities have proven, in time, to be socially sterile, and have generally become more costly to market.

The failure of these communities, from a social standpoint, has been a setback to the rational urbanization of man.

Unfortunately, "high density" was blamed for the failure and the real problem has yet to be fully understood, much less solved. The problem is increasingly dangerous in high density development (15 units per acre and up), and ironically it is here that we have the best chance of coming to grips with the real problem. It will be in large scale, higher density developments that we will

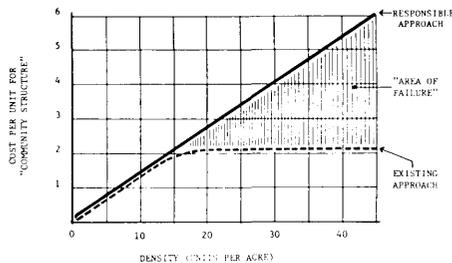
have the magnitude of resources at our disposal to invest more responsibility toward the real human needs.

The following graph illustrates, hypothetically, the relationship between density and the development cost per unit required to "structure" community into a project.

As densities go up, the corresponding responsibility and need to build more "community structure" goes up. The proper amount of community structure is also a function of the size of the project but it has a very direct relationship to density. It is important to understand that the line on the graph representing the "responsible approach" continues to go up as densities increase. The "existing approach" line would generally level off, incorrectly assuming that the same expenditure for "amenities" at 15 units per acre would also be enough for 30. The shaded area represents the "area of failure" in our responsibility to build sufficient "community structure" into any planned development to satisfy the basic human needs (physical, psychological, social, spiritual, etc.).

We must stop thinking of the "amenities", (which are generally only recreational in nature) as the only ingredient necessary to add to the basic living units in order to create a community.

Exactly what "community structure" is will vary according to the size of the community, its location, its environment, and many other factors. Basically we are referring to the part of the man-made environment which is to ensure the most



efficient exercising of routine, daily activities (including recreation) within a framework that is conducive to natural social interaction. Depending on the unique nature of each community, the "community structure" should include such things as retail shopping, neighborhood schools, churches, appropriate recreational facilities, places for "community" or civic functions, medical clinics, office space, etc. All of these elements of "community structure" must be realized with less dependence on the automobile. As the density goes up, the degree of compactness, or miniaturization, needs to increase proportionately. Low density development has been traditionally automobile-oriented. The move to higher density living will carry the blessing of increased freedom from the car which can only come as a by-product of rational urbanization, which implies greater compactness. "Greater compactness" necessarily means more "structure", more construction, and more costs. These additional costs must be seen as inescapable, and an inherent consequence of high density development. They are responsibilities — not luxuries.

On the positive side, there will obviously be great savings also inherent in the compact, efficient community structure. Economies realized by efficient transportation systems, more efficient structural and utility systems will help balance the higher costs. Also, the profit-oriented parts of the community must be directed back into the community to help offset higher costs instead of lining the pockets of some outside entrepreneur. If the financial arrangements are properly established, a

community should be able to afford its "community structure". If it cannot, there is a great inequity somewhere. Either the residents are not paying enough (to support their given density) or someone else is quietly "ripping-off" the gravy and so depriving them of a "total community".

Another manifest by-product of the compact is a proportional saving of the natural environment and its endangered systems. The resultant savings to society in this area are inestimable. The positive aspects of compactness, as a philosophy of community development, affect every facet of life and can no longer be ignored as a viable solution to many of our social problems.

In summary, and in a very generalized way, we see that high density development is likely to increase in the future and that, contrary to the popular misconception of high-density living as anti-life, leading to crime and other social disorders, it will in fact provide us with untold benefits as a movement toward our rational urbanization. We are finally becoming aware that a community can afford, or can finance, whatever "structure" it will support — if — the disproportionate profits currently existent in the real estate, developing, and financing businesses are re-directed back to the community, where they belong and are so desperately needed. Our ability to absorb, or tolerate, low density development will decrease in the future making it more imperative than ever to solve the dilemma of how to build more socially responsible, environmentally conscious communities, particularly at higher densities. ●



## Protect them better...with Non-Com<sup>®</sup> Fire Retardant Wood.

Animal protection wood. Wood that retains its structural integrity far longer than wood treated with surface paint or spray . . . even unprotected steel. Wood that has been deep pressure treated with inorganic salts. Salts that — under actual fire conditions — automatically release non-flammable gases and water vapor that choke out flame. Other chemicals in the wood cause a self-insulating, hard layer of carbon char to form . . . further retarding the spread of flames through or along the surface.

Non-Com doesn't compete with untreated wood. It does

compete with steel and masonry. Many times, Non-Com will have a lower in-place cost than these competitive non-combustible materials. Chances are, building with Non-Com can lower insurance rates. Dantzler-prepared Non-Com Fire Retardant Wood has the Underwriter's Laboratory label.

If you're an architect or contractor specify Non-Com. We have weather-sheltered supplies in all of our warehouses. We can fulfill any of your specification requirements whether you're building a stable, a factory or school.

Specify Non-Com Fire Retardant Wood . . . Animal protection wood. People protection wood.

Non-Com<sup>®</sup> is produced by

**DANTZLER LUMBER & EXPORT CO.**

P. O. Box 6340, Jacksonville, Florida 32205.

Telephone: (904) 786-0424 or 781-1853

P. O. Box 1419

Pompano Beach, Florida 33061



For more information about Non-Com<sup>®</sup> Fire Retardant Wood, write Dantzler at Jacksonville Headquarters.

# The Human Dimension

By William R. Brockway  
AIA Architect

Ever wonder why most chair seats are 16 to 18 inches off the floor, hallways are a minimum of 3 feet wide, and bars and ticketcounters 3 feet 6 inches high? These dimensions, and many thousands of others, are the size they are because of the size people are. Almost everything we come into contact with of an architectural or utilitarian nature is sized to accommodate the human frame. If it isn't, it won't work very well.

Now, not all people are the same size, as a quick glance up or down any city street will assure you. However, with the possible exception of children and people with physical handicaps, most of us can accommodate our bodies to standardized furniture and house dimensions without too much trouble.

Doorways were originally made 6 feet 8 inches high to permit an average man to go through without removing his hat. Today, people are growing taller and very likely we will have to increase the heights of our standard doors in the very near future.

## HALLWAY

A person carrying a suitcase is just about 3 feet wide. Thus the standard minimum size residential hallway. Two people passing each other require 3 feet 2 inches, if one of the passers turns sideways, almost 4 feet if neither is willing to give ground. Thus, a better minimum for residential halls might be 3 feet 6 inches. It requires 3-1/2 feet of arm waving room besides the bath tub to towel yourself with a full size towel, less with the kind of towels many motels provide. Since all tubs are 2-1/2 feet wide, this means that any bathroom less than 6 feet wide across the tub will cramp your drying off style.

Stand-up work surfaces, shop benches, kitchen counters, drawing boards all seem

to work best when the top of the counter is at the same level as the top corner of the worker's hip bone. Since, on most women, this point occurs about 3 feet off the floor, that is the standard height for kitchen counters. It is so standard, in fact, that if you choose to make the counter an inch or two higher or lower than 36 inches, you will have trouble fitting appliances under the counter top. Nearly all dishwashers, under counter refrigerators, ice makers and hot water heaters are made to fit under 3 foot high counters and won't fit anything else.

## SIT-DOWN WORK

Similarly, the most comfortable height for sit-down work surfaces is 2 feet 6 or 7 inches. So — nearly all our desks and sewing machines and dining tables are this height. Make it 2 feet 10 inches and your shoulders will tire from lifting your arms onto the work surface. Two feet 4 inches and you may not be able to get your knees under the top without cutting the legs off your chair.

Lavatories are normally 2 feet 7 inches high, presumably on the theory that you need to bend over that far when washing your face to keep the water from running down your shirt front. I tend to disagree with this particular standard, preferring a 2 foot 10 inch height, with its attendant drip hazard, to an early morning crick in the back. Lack of attention to these seemingly minor details has caused an untold amount of misery over the centuries to designers of houses and to owners alike. Frank Lloyd Wright, who did so many things so well, was a persistently unsuccessful furniture designer. In his attempt to bend his house and their furnishings into an organic whole, he used to come up with things like 3 cornered chair seats. Which would have worked very well except for the fact

that very few of his clients had 3 cornered bottoms.

## STAIRS

Other people have made similar, if less spectacular errors. A common one is the malproportioning of stairs steps, in the mistaken belief that the lower the vertical step, the easier the stair is to climb. The truth is that stairs can be made with risers of almost any height from very low to extremely high without being difficult to climb. But only if the width of the tread is altered proportionately. A high riser demands a short tread and vice versa. The optimum height for risers, according to most authorities, will fall some where between 6-1/2 and 7-1/2 inches. If you stick to that height and ask your architect to design the width accordingly, you can't go wrong.

Some other common problems: The office door that is too small to get a desk through — should have been at least 3 feet wide. The casement window or projected window which opens out between the heights of 3 feet and 6 feet above the ground — a black eye maker. The double hung window with meeting rail 4 feet above the floor — you can't see out side without getting up out of your chair. The 8 x 10 breakfast room — too small to put breakfast room furniture in. The pool room with less than five feet clear all around the table — no rail shots unless you saw the end off your cue.

And so it goes, we can alter and stretch and play historical novels with our houses as much as we like, but the one set of criteria we dare not tamper with is the human body; its size and shape, extensions and limitations. These determine, more than any other thing, what we can do and cannot do, in architecture. ●

*The two-day, FES/FAAIA sponsored seminar, "Energy Conservation . . . By Design," was held on March 20-21 and made waves throughout the news media in the state. Eighteen speakers, most of them recognized experts in various fields of design, shared their knowledge of practical and available techniques which could reduce energy consumption as much as 50% in future construction and 20% or more in existing structures. The following articles are excerpts of some of the professional philosophy and energy-conserving measures presented during the conference.*

## Obligation of Design Professionals in Conserving Energy

PAUL G. DAVIS, P.E.  
PRESIDENT  
Davis-Yohalem & Assoc., Inc.  
Ft. Lauderdale

The overall magnitude of savings in energy can be significant. We, as architects and engineers, have the duty and obligation to seek out and find these savings in new buildings and old. The design professionals also have the obligation to work with the code governing bodies to establish effective regulations in energy conservation.

The question arises — how can all this be done? One answer lies specifically in the continued growth in the technology of the architect and engineer, but the real solution requires a far greater response by the entire professional design team. The architect must select construction materials and the engineer must design environmental systems which will help solve the problem. Each need to cooperate in a team effort to design buildings in which the problem is effectively solved.

Another far-reaching problem is **selling**. The concept developed by the joint effort of the architect and the engineer must be sold through joint effort to the owner or the man who is putting out the first cost dollars.

The design or selling team must be prepared to convince the owner that the First Cost is not the proper criteria. He must be convinced that the Long Range Cost is the one to eye with concern. The owner must not only be sold on the concept, but must be so convinced that he remains sold even to and beyond that fateful day when the bids come in. •

## Responsibility of Professionals

NILS SCHWEIZER, FAIA, Chairman of the Board  
Environmental Design Group, Inc. Winter Park

In the search for a more rational way of life, I would like to examine our existing professional attitudes as I perceive them.

**The attitude of specialization.** Our profession has become increasingly compartmentalized, fractured and fragmented with increasing technological burdens. This requires new thrust in learning the interdisciplinary interface.

**The attitude of irresponsibility.** Fostered by intellectual stagnation and unconcern, this is an ever-growing problem caused by growing numbers of people and a migrating population. We need innovative research projects. Some two billion dollars in federal funds will be spent on research in terms of energy conservation. Some should come to the architects and engineers of this state. We must begin to require more of each other. The friction, if nothing else, may produce a better product.

**The attitude of convenient myopia.** The short-sighted reliance on old ways is passe. It may be true that new attitudes may only be formed in the near future with creative economic problem solving, i. e., economic incentives.

**And what about ourselves?** Architects never have had any research capability. They are woefully uninformed as to the integrity of systems, as well as the mechanisms of the engineering world. As far as engineers are concerned, it seems that structural engineers rely upon the code safety factor, the handbook safety factor and then a personal safety factor — that is conversation? Illuminating levels in lighted areas to simply cover design inadequacies. Mechanical engineers do not fully understand the human physiognomy. They seem to be ignorant of our true comfort requirements, and they always forget that our thermostat is in our feet.

**What should we do?** We need to search for an integrity we have been giving lip service to for years. A good building is a work of art; a supreme fashioning of technologies and social constraints and

functions. Basically, a building should be open to the sun and breezes, planted on three sides with deciduous trees to do both the shading and encourage convection currents and also the cleansing and replenishing of our air. All of these factors are the beginning of an understanding of a process of comprehensive diversity in terms of energy conservation. This leads us to a commitment.

**A commitment to an interdisciplinary posture** never once before tried successfully, unless it has been in the area of space teams. The entire professional group needs a single character of mind, a single response to a major problem.

**A commitment to more research,** particularly in the areas of replenishable energy sources, solar and biological. We need an understanding of diversity in terms of systems to be used and as a concept. Hybrid systems which supplement and complement each other are generally more successful than mono-systems.

**A commitment to the process of developing performance standards or criteria** for all projects prior to design. These criteria should be honed by the life cycle analysis treatment.

**A commitment to the new aesthetics** or forms which may emerge from these design processes.

**A commitment of the re-valuation** of our educational systems to provide for the enlightened professionals of the future.

**A commitment to view the total man-made environment as a whole;** for we are on this spaceship Earth — a closed system with limited resources. We need to understand this fully with every fiber of our beings. It is with this understanding that we became responsible and our attitudes began to change. Let us remind ourselves of where we are, what we have left and what we are able to do with the capabilities that we have in our training and in our grasp. •

KENNETH L. LAY, Director of Corporate Development  
Florida Gas Company, Orlando

## The Energy Crisis: Can We Turn the Corner?

The current and foreseen energy shortages **do not** result from inadequate domestic resources, but rather they result in large measure from government policies which have slowed the development of these resources. We must now change these policies to enable us to more fully develop and utilize our indigenous energy resources.

The policy which cries loudest for changing is the regulation of wellhead natural gas prices. Presently, the average price received by producers for our most premium fuel is less than one-fourth the price received for domestic oil at the wellhead and less than one-sixth the price paid for foreign oil or natural gas imported into this country. This is hardly a policy which encourages the investments necessary to develop our domestic natural gas resources. The sharp decline in natural gas drilling and supplies in the 1960's surely indicates that Federal regulation of producer prices has simply not worked.

Other prices which contributed to the current crisis — and which are being and must be changed — are an import quota system which was used to fill the growing gap between domestic supply and demand with foreign oil, rather than to encourage domestic drilling; by environmental laws which made our most abundant fuel, coal, unusable, which slowed the development of new supplies of clean energy (e.g., Alaskan pipeline, nuclear power plants, off-shore drilling), but which did not provide effective measures to reduce our energy needs; and finally by price controls which are holding domestic fuel prices substantially below world prices at the same time that we are committed as a nation to achieving domestic self-sufficiency.

Above all else, the energy crisis results from a national energy policy over the past decade and longer based on cheap energy and rapid growth, with little thought given to what happens when we run out. We have demanded more energy, cleaner energy, more secure energy, but have accepted policies which guaranteed this energy would not be available.

There is sufficient blame for everyone, and it is high time that the Administration, Congress and the American people get on with solving the energy problem instead of trying to find someone to blame it on.

### Where Do We Go From Here?

The United States must begin working aggressively toward achieving the "Project Independence" which the President first announced in his speech last November 7. This will require bold initiatives — some of which will not be politically popular.

Although we must continue to push ahead with our R & D efforts to clean coal up, over the next several years we must mine coal in pretty much the conventional manner, including surface mining, and burn coal in pretty much the conventional manner. We must insist that the lowest sulfur coal available be used.

We must also expedite development of this nation's oil and natural gas reserves on the Outer Continental Shelf. The other two resource areas which must be developed aggressively are the Artic Slope, including the Naval Reserve, and onshore in the lower 48 states.

The current energy situation is an unparalleled challenge and opportunity. If we do the things we must do, we can get through the short-term crisis without suffering a deep recession and over the somewhat longer term, we can develop an alternative to Arab oil by 1980. If we do **not** do what we must do, the economic dislocations will be severe and chronic, and our independence as a great nation will be threatened. ●

## Shading and Orientation

FRANK R. MUNDANO, AIA

Mundano Associates, Architects, Inc. Clearwater

The tremendous increase in the use of air conditioning throughout the U.S. and especially in Florida has greatly changed the demand curves of electric utility companies. They experience their peak loads on the hottest summer afternoons and in some areas have encountered brownouts, voltage reductions and even complete blackouts.

One of the most effective means of reducing air conditioning loads particularly on glass, is through the utilization of proper shading techniques and orientation.

In buildings which feature large expanses of glass solar heat gains through the fenestration and heat from electric lights used in rooms which have their blinds or drapes tightly drawn, account for one-third to more than one-half of the total cooling load.

The object then, is to admit natural light while keeping out or minimizing the

amount of solar heat gain. Solar heat gain is the amount of the sun's heat that makes its way into a building, and windows provide the primary route for the admission of solar heat.

For every 100 square feet of unshaded, unfavorably oriented glass in air conditioned buildings, an additional ton of cooling capacity must be provided. In a year's time this accounts for many dollars in operating costs and is very wasteful of energy.

Glass facing north receives the least solar radiation, and glass facing south receives the next least. Therefore, if a building can be oriented so that most of the glass faces north and south, it will have a much lower solar load than if the glass areas face east and west.

In placing a building on a site, check to see if you can effectively take advantage of adjacent buildings to provide solar protection. Take advantage of trees to also provide proper shading. If these two

factors are not available, utilize one of the many exterior shading devices.

Overhangs can be somewhat effective but are costly and become strong design elements. Heat absorbing glass, insulated glass and reflective glass can all be effective in varying degrees. Exterior louvers, vertical, horizontal or a combination of both can be utilized. Spacing and depth of louvers has a significant effect on solar heat gain amount of natural light admitted, and can become a strong architectural element.

Our energy economy can no longer tolerate either the excessive power demand or the needless consumption of fuel required to remove solar heat which should have never been permitted in buildings in the first place. Minimizing of air conditioning loads and energy consumption through effective sun control and orientation is an inescapable responsibility of all who design, own or operate buildings. ●

## Bright, Dim or Dark: Some Light Ideas on Saving Energy

HENN REBANE, P.E.

Watson and Company, Tampa

Substantial amounts of energy can be conserved by reducing unnecessary lighting. The rules set forth in February 1972 by the Illuminating Engineering Society are aimed at making better use of energy without reducing the quality of lighting:

**Design lighting for expected activity.** You should light "seeing" tasks, while providing less light in the surrounding non-working areas. Always take into consideration the location of work stations, the task to be done at the work station (some tasks require more illumination than others), and the flexibility of providing relocatable luminaires (if these can be moved as easily as desks, fewer units are required since the light can follow the desk to wherever it is moved.) If a seeing problem occurs at a given point, a fixture can be added at that location, rather than providing for the problem uniformly over thousands of square feet of floor space.

**Design with more effective luminaires and fenestration.** Use systems analysis based on life cycle costs.

**Use thermal controlled luminaires.** In practice this has yielded substantial savings and should be investigated on all design. The full potential of thermal controlled luminaires is only realized by the mechanical and electrical design engineers making decisions jointly.

**Use lighter-colored finishes on ceilings, walls, floors, and furnishings.**

**Use efficient incandescent lamps.** Select lamps based on their lumen maintenance quality and consider their output over the entire life of the lamp. Check the lumens per watt ratings — they do vary.

**Turn off lights when not needed.** The design engineer must visualize the several different light levels and make it convenient to the owner to accomplish this by switching.

**Control window brightness.** Large dark or very bright areas surrounding a seeing task reduces the visibility of details to be seen. If the bright area is the problem, the usual answer is to raise task illumination — as per elementary lighting design textbook data, but is wasteful.

**Utilize daylight as practicable.** Daylight, with the sun, sky and ground as sources, can be utilized to advantage.

**Keep lighting equipment clean and in good working condition.** With a good maintenance program you can get up to 50 percent additional illumination at no increase to cost of energy consumption. Follow simple rules: replace burned lamps immediately; use rated-voltage lamps that are rated at the voltage which is in use; be sure that fluorescent lamps operate at a cool ambient temperature; keep lamps and luminaires clean; keep ceilings, sidewalls and floors clean (repaint them when their reflectances fall below their recommended reflectance values); when removing fluorescent lamps from fixtures to reduce light level, disconnect the power to the ballast, or you have done only 80% of what you thought you did.

Post instructions covering operation and maintenance. You may be the greatest designer in the world, but unless you communicate the features you designed to the owner, your reputation will suffer. ●

---

# Answer to the Energy Crisis: Individual Responsibility

SENATOR GEORGE FIRESTONE

Co-Chairman

Florida Energy Committee, Miami

Engineers and architects, as the key members of building design teams, have a special responsibility in helping to overcome the energy crisis. It's going to take the technicrafts, the professionals, to give the guidance on this. Your special knowledge and professional expertise are needed if society is to achieve a realistic and workable balance between energy demand, production and consumption.

As design professionals you're dedicated beyond just advancing your profession and providing dollars for your own benefits; you have a responsibility for the health, safety and welfare of the public through proper utilization of your technical competence. You have to start providing leadership — you can no longer be order takers.

Anyone can make a xerox copy of something that has already been done. That doesn't take a professional background; that doesn't take the education you've gone through; that doesn't take the experience you've developed over the years. It's time to stop talking about running off photocopies of what has been done before and start talking about some innovation and some imagination — certainly also taking part

in research and development of new improved energy sources — making sure that other alternatives are available to us.

Some of these things aren't new technology; some are concepts that were used in the building of the pyramids. We've gotten away from them because it was easier and cheaper to do it another way until recently.

Today more than ever before, your individual responsibility as design professionals needs to take on new dimensions of involvement and service:

1. Educational assistance and guidance to government officials, at all levels, to see that proper and adequate consideration is given to technology utilization in the solution to conservation of energy.
2. Active pursuit of increased funds for research in developing new and improved energy sources.
3. Vigorous efforts to demonstrate to clients, users and project financiers, that increased consideration be given to a life cycle energy and cost analysis on all building design projects.

4. Active participation in the development, adoption and utilization of building design standards that will result in greater energy conservation in the construction, operation, utilization and maintenance of buildings.

5. Greater creativity and innovation by design professionals in the conception, design and construction of buildings and energy consuming systems.

6. Development and utilization of new and improved building materials, insulation material, illuminating equipment, air conditioning systems and control systems — and to promote the inclusion of such developemnts in project specifications.

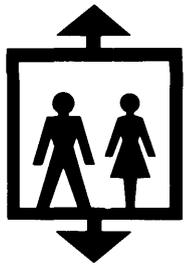
7. Improve and expand the general public's understanding and appreciation of technology utilization in the energy conservation decision and policy making processes. Communicate in less sophisticated, technical jargon.

8. Increase emphasis on energy conservation in the teaching of engineering design and technology courses in the engineering education programs of our colleges and universities.

---

REPRINTED FROM JOURNAL,  
FLORIDA ENGINEERING SOCIETY,  
MAY, 1974.

# Let your signs do the talking.



elevator



phone



women

**NEW 33 Line by  
mcPhilben®**



information

write too . . .

**mc PHILBEN LIGHTING**  
**EMERSON ELECTRIC CO.**  
EMERSON  
270 LONG ISLAND EXPRESSWAY/MELVILLE, N. Y. 11746  
CANADA: P. O. BOX 150, MARKHAM, ONTARIO

## A-E Selection Report

Officers of The American Institute of Architects have commended the General Services Administration for adopting new procedures for selecting architects and engineers to design federal government projects.

Archibald C. Rogers, FAIA, AIA President, praised the decision of Arthur F. Sampson, GSA administrator, to accept the recommendations of the special study committee he appointed in late 1973, to review the agency's A-E selection procedures and recommend improvements. Previously Sampson had announced that he had studied all of the major and most of the minor recommendations by the study committee, and that he accepts the recommendations and is implementing them immediately.

Key recommendations of the committee :

Modification of the makeup of GSA advisory panels for selection of design professionals. Members of advisory panels, who will now serve for only one year, will be ineligible for consideration for GSA work during their terms. The numbers will also be reduced. Establishment of in-house professional evaluation boards who will rankorder the three top firms recommended by the advisory panels. This ranking was previously done by the administrator, who is responsible for the final selection. Under the new procedure, if the administrator departs from the recommendation of the evaluation board in selecting the top-ranked firm, he must document his reasons.

According to William Marshall Jr., FAIA, President-elect, the Institute is particularly pleased with Sampson's acceptance of the study committee position opposing competitive bidding, a position the GSA administrator personally endorsed in a statement at the press conference. The committee report stated: "The committee does not believe that 'competitive bidding,' 'competitive negotiations,' or any other form of price competition in the selection process would reduce the potential for impropriety, provide a practical or

effective tool for selecting the most qualified A-Es, or give young firms a better chance at federal work. No evidence was presented that competitive pricing would improve the GSA process or services to the public and, in the opinion of the study committee, it would be impractical and unwise for the government to select design professionals on this basis."

GSA administrator, Sampson has also announced several proposed changes in GSA's A-E selection methods in addition to those recommended by the special study committee. Starting in January, 1975, he said, design firms interested in GSA work would be asked to submit, in additional information on the firm's qualifications, a proposal which would address specific project requirements. Noting that this process would be developed over a three-to-five year period, Sampson envisions that it may include information on technical and professional distinction; estimates of construction and life-cycle costs; planning and design concepts; and estimated fees. He stressed that he was deferring implementation of the proposal requirement until January in order to explain it fully and explore its implications with design professionals and their organizations.

Responding to the idea of technical proposals, Marshall said, "We accept the GSA's invitation to explore the implementation of these modifications to its current selection procedures. We look forward to the opportunity to clarify the matter of the timing and procedure for determining the cost of professional services, among other matters.

"The Institute has always been gratified," Marshall continued, "by the fact the GSA has included people from outside the agency in its A-E selection process. We were pleased when Mr. Sampson convened the special study committee, and that he has accepted the committee's recommendations. Mr. Sampson's stated desire to secure the best architectural design talent for government buildings should be a continuing benefit to the nation for years to come."

# This Is Zyrian Stone . . .



This is an angle photograph of an actual panel 17' wide.

It began over 500 million years ago . . . in a quarry outside Mineral Bluff, Georgia. Through the ages, it adapted to a multitude of earth changes. Today, it is a fine-grained mica schist that has remained remarkably adaptable. It breaks into slabs of any desired thickness (stocked only in ½" thickness) . . . or cut and saw it to any shape. Variety is infinite. No two slabs show the same color shades . . . they range from greens and bluish-greens through yellows, browns and chocolate tones. Blend them to produce striking, artistic effects. This unusual stone is ideal for veneering . . . future uses are unlimited. It took over 500 million years for Zyrian Stone to reach such perfection of beauty and facility. It was worth the wait.

# **DUNAN BRICK**

DUNAN BRICK YARDS, INC.

1818 North 7th Avenue  
Lake Worth, Florida  
(305) 582-5760

P.O. Box 5  
Miami, Florida  
(305) 887-1525

THE FLORIDA ARCHITECT  
7100 N. Kendall Drive  
Miami, Florida 33156  
Accepted As Controlled Circulation  
Publication at Miami, Florida

Miami-Dade Jr. College Library  
E. G. Eymann, Head Librarian  
11380 NW 27 Ave.  
Miami, Fla. 33167

10

### Quest For Excellence

A search with inward and outward directions . . . a pursuit that is the purpose of our lives. The quest can be achieved. Those who reach achievement are to be honored one of them was Louis Kahn.

FAAIA 60th Annual  
Convention and  
Building Products  
Exhibit

Marco Beach Hotel  
Marco Island  
October 17-20, 1974