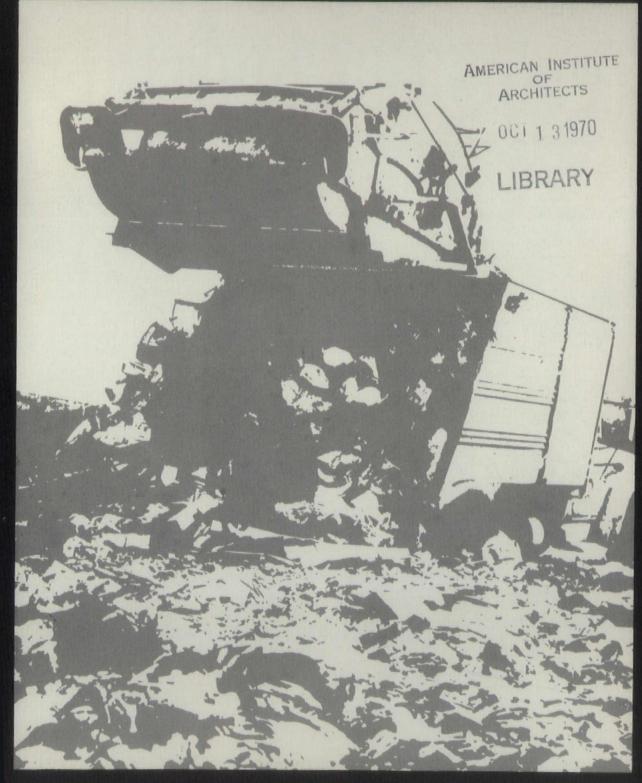
### The Louisiana Architect



# Now the grass is greener on your side



When Louisiana was largely an agricultural state, many of our high school and college graduates went elsewhere in search of good jobs. Somehow, the grass always looked greener on the other side of the fence.

But things have changed. More and more of our young people are finding jobs in Louisiana provided by new industries that have invested millions of dollars in our state. Since 1964, 277 new plants have been built or started, and 867 companies have expanded existing facilities. Availability of low cost electric power is one of the most important factors to most new industries locating in Louisiana.

In addition to supplying all the electricity needed by industry, the five Louisiana Investor-Owned Electric Companies help new industry "discover" our state. Each investor-owned electric company maintains an area development staff. These teams of specialists work with local and state leaders to attract new industry, and help existing industries grow. It means more jobs for us all.

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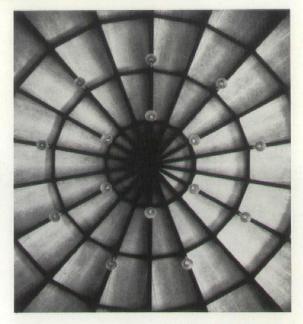
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#### The Louisiana Architect

Volume IX

Number 6

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LOUISIANA ARCHITECTS ASSOCIATION CONVENTION

August 18 1970

OPEN LETTER TO L. A. A. MEMBERSHIP

Dear Everybody:

The Shreveport Chapter of the American Institute of Architects invites you to Shreveport November 5, 6 and 7, 1970 for the State Convention of the Louisiana Architects Association. The theme of our convention is "SYSTEMS 70", subtitled "Designing In Our Day". We will endeavor to fully investigate the advantages and problems associated with the new techniques of systems architecture.

Saturday, the 7th of November, "SYSTEMS" will receive comprehensive coverage by a panel of experts in the fields of architecture, engineering, contracting, labor, economics and government.

In addition to these seminars, which should be interesting and vital to the profession, we of the Shreveport Chapter hope to provide you with a fun time and an interesting products exhibit.

wm. S. Wilson, President
Shreveport Charter, A.I.A.

F. Wilson, President
Shreveport Charter, A.I.A.

F. Wilson, President
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Jesse O. Morgan, Fr. Chairman
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#### The Louisiana Architect

#### "CONTEST"

Announcing a competition for the design of 1971 covers for the Louisiana Architect magazine.

Each registered architect is invited to submit one cover design. Entries will be displayed and winners announced at the LAA Convention in Shreveport.

The rules are as follows:

- Entries shall be full size mock-up in color. No more than two colors and colored stock may be used. Halftones, etc., may be used to vary design. Design art must fit a vertical space of 8" x 6½".
- Mount the submission on a stiff backup (cardboard, etc.) 8½" x 11". Wrap mount with acetate for protection.
- 3. Secure name and address to back of mount.
- 4. Judging will be done by an impartial jury.
- Main prize will be free registration for the 1971 Convention for winner and his lady.
- 6. Send entries no later than November 1, 1970 to:

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Shreveport, La. 71102

# PPG Performance Glass has made these 37 recent contributions to America the beautiful. (And America the comfortable.)

Architects all over the country are putting up more buildings that use beautiful PPG Performance Glass. The architects of the 37 projects shown below used a PPG Reflective Insulating Glass, for one or more of several reasons: openness, reflectivity, color, drama, visual comfort, or to keep out the heat and the cold.

The list is made up of Solarban® installations only, and while it is by no means complete, it does offer a guide to a number of interesting projects in widely scattered locations. For further details, write or call Mr. D. C. Hegnes, Manager, Architectural Construction Service, PPG INDUSTRIES, One Gateway Center, Pittsburgh, Pa. 15222.

ALASKA: Anchorage International Airport Architect: Manley and Mayer PPG Glass: Solarban (2)

CALIFORNIA: Los Angeles
Jules Stein Eye Institute
Architect: Welton Becket & Assoc.
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COLORADO: Denver
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Architect: W. C. Muchow Assoc.
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FLORIDA: Clearwater
Pinellas County Courthouse
Architect: Anderson, Johnson,
Henry and Parrish
PPG Glass: Solarban (2)

FLORIDA: Cocoa Beach Cape Canaveral Hospital Architect: Stevens & Walton PPG Glass: Solarban (3)

FLORIDA: Miami
Mutual of Omaha Regional Home Office
Architect: Houston & Albury Assoc.
PPG Glass: Solarban Bronze (3)

FLORIDA: Titusville
Brevard County Courthouse
Architect: Hirshberg,
Thompson & Assoc.
PPG Glass: Solarban (3)

GEORGIA: Atlanta
Cities Service Building
Architect: Toombs, Amisano and Wells
PPG Glass: Solarban (2)

GEORGIA: Carrollton West Georgia College Architect: John W. Cherry PPG Glass: Solarban (3)

ILLINOIS: Chicago
Hyatt O'Hare Hotel
Architect: John Portman & Assoc.
PPG Glass: Solarban (2)

ILLINOIS: Rockford
Downing Box Company
Architect: Larson & Darby
PPG Glass: Solarban Bronze (3)

ILLINOIS: South Chicago
Ardco Corporation
Architect: McCarthy-Hundrieser &
Assoc., Inc.
PPG Glass: Solarban (2)

MARYLAND: Baltimore
Social Security Administrative Complex
Architect: Myers, Ayers & Saint
PPG Glass: Solarban Bronze (3)

MINNESOTA: Duluth
St. Luke's Hospital
Architect: Thomas J. Shefchik &
Assoc., Inc.
PPG Glass: Solarban (2)

MINNESOTA: St. Paul
Pearson Candy Company
Architect: Cerny Associates, Inc.
PPG Glass: Solarban (23)

PENNSYLVANIA: Indiana
East Pike Elementary School
Architect: Robert T. Scheeren
PPG Glass: Solarban (3)

SOUTH DAKOTA: Sioux Falls Airport Architect: Fritzel, Kroeger, Griffin & Berg PPG Glass: Solarban (2)

TENNESSEE: Bristol
Tri-Cities Airport
Architect: Anderson & Gilliam
PPG Glass: Solarban (3)

TENNESSEE: Cookeville Cummins Engine Company Architect: Walter E. Damuck PPG Glass: Solarban (3)

TEXAS: Dallas

American Hospital Supply
Architect: Nelson, Ostrom, Baskin,
Berman & Assoc.
PPG Glass: Solarban Bronze (3)

TEXAS: Houston
One Shell Plaza
Architect: Skidmore, Owings & Merrill
and Wilson, Morris,
Crain & Anderson
PPG Glass: Solarban Gray (3)

VIRGINIA: Fairfax
Fairfax County Governmental Center
Architect: Vosbeck, Vosbeck,
Kendrick & Redinger
PPG Glass: Solarban Bronze (3)

VIRGINIA: Roanoke Southwest Virginia Savings & Loan Architect: Kinsey, Motley & Shane PPG Glass: Solarban (3)

MISSISSIPPI: Gulfport
Mississippi Power Company
Architect: Curtis & Davis
PPG Glass: Solarban (2)

NEW JERSEY: Lawrenceville Public Service of N.J. Architect: James Laden and Raymond Althouse PPG Glass: Solarban (2) NEW JERSEY: Wayne Orban Office Building Architect: Bernard Rothzeid PPG Glass: Solarban (23)

OHIO: Canton
Kent State University
Architect: Lawrence, Dykes,
Goodenberger & Bower
PPG Glass: Solarban (3)

OKLAHOMA: Lawton YMCA Architect: James Marshall PPG Glass: Solarban (2)

OKLAHOMA: Oklahoma City
Lincoln Plaza
Architect: Halley-Riek and Hester
PPG Glass: Solarban (2)

OKLAHOMA: Tulsa Tradewinds Motel Architect: Russell Magee PPG Glass: Solarban (3)

OREGON: Portland
Esco Corporation
Architect: Wolff, Zimmer, Gunsul
and Frasca
PPG Glass: Solarban (3)

PENNSYLVANIA: Allentown Mack Truck Architect: Wolf-Hendrix & Associates PPG Glass: Solarban (2)

PENNSYLVANIA: Beaver Beaver Area High School Architect: Edwin M. Wallover, Jr. PPG Glass: Solarban (3)

WISCONSIN: Appleton
Wisconsin Wire Company
Architect: Birch-Grisa-Phillips, Inc.
PPG Glass: Solarban Bronze (3)

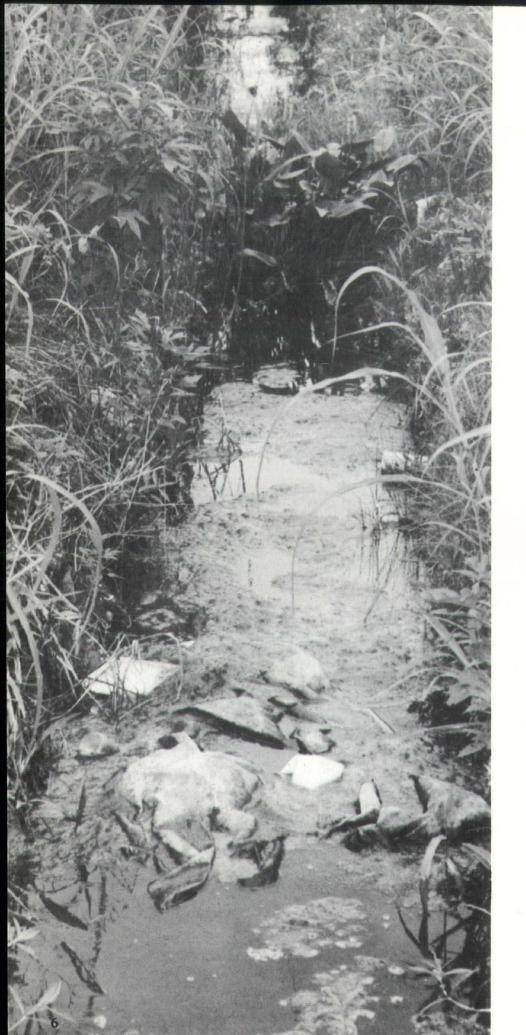
WISCONSIN: Madison
Ohio Products Company
Architect: Weiler, Strang,
McMullin & Assoc.
PPG Glass: Solarban (2)

WISCONSIN: Milwaukee South Milwaukee Public Library Architect: Losch & Haeuser Inc. PPG Glass: Solarban (3)

WISCONSIN: Racine St. Luke's Hospital Architect: Hams M. Geyer PPG Glass: Solarban (3)

PPG is Chemicals, Minerals, Fiber Glass, Paints and Glass, So far.





It will take more than just talk to find a solution to pollution.

So agree most of the nation's ecologists, who contend that it is high time to stop discussion and start action.

The federal government, reading the handwriting on the walls when the pollution issue began to blossom, took a positive step to remedy the nation's environmental problems when it organized the Council on Environmental Quality in February and outlined a 37-point program consisting of 14 executive orders and 23 requests for legislative acts.

The program featured the following provisions: 1) appropriation of \$4 billion in federal funds for the next five years to help municipalities build 1,500 new sewage treatment plants and improve 2,000 existing ones, 2) new air and water purity standards, 3) speedier legal action against pollution violators with plans to impose a daily fine of \$10,000 and 4) new emission criteria for motor vehicles.

"At the turn of the century, our chief environmental concern was to conserve what we had—and out of this concern grew the often embattled but always determined 'conservation' movement," Nixon said February 10. "Today, 'conservation' is as important as ever—but no longer is it enough to conserve what we have; we must also restore what we have lost. We have to go beyond conservation to embrace restoration."

The Democrats, fearing that Nixon may be stealing their thunder, branded the program "a ruse," "a charade" and "just plain bull."

But no matter what it was classed, the program proved to be one of the most significant steps in the anti-pollution movement, and such action on the national level may have been or may be instrumental in spurring governments as well as individuals to pump needed money into various anti-pollution efforts.

And lack of money, some contend, is the root of the problem.

America is winning some battles against pollution, said Dr. Lee DuBridge, presidential science adviser, but winning the war will require "careful use of technology, a great deal of people and MONEY."

Dr. Phillip W. West, director of the LSU Environmental Sciences Institute, said, "The problem is a very complex one. We don't have the people who know how to fight it." Lawmakers could help, he said, by finding some money to help research the problem.

Despite this apparent lack of adequate funds, however, intensive research into finding cures to pollution is being con-

### POLLUTION is there an answer?

ducted. Results of such research are promising, but implementation of new discoveries to maintain an ecological balance throughout the nation could be long in coming. Some findings are astounding. Who would have known, for instance, that sewage and garbage may hold the answer to the world's food problem or that the bag of trash a householder throws away may be worth its weight in oil?

Believe it or not, scientists at Carnegie Mellen University developed an inexpensive method of growing large quantities of edible yeast in a medium, sewage sludge.

In another development, the U.S. Bureau of Mines in Pittsburgh discovered that heavy oil can be made out of garbage, and it is investigating the possibility of refining the black goo to make it useful.

Research is also being made into automobiles and fuels. Perhaps in the future, pollution-safe automobiles will run on propane instead of lead-laden gasoline.

One example of a propane-powered vehicle is found in Westwego, La., where the city's police department has modified a patrol car. A carburetor and vaporizer were installed in the unit at a cost between \$200 to \$300, and the car is currently being used on a trial basis to determine the feasibility of converting the city's complete fleet.

Louisiana, with its enormous number of lakes, streams and rivers, is highly interested in pollution investigation and in conjunction with the federal government annually appropriates sizeable chunks of money earmarked for such agencies as the Louisiana Wildlife and Fisheries Commission, the Department of Agriculture, the Department of Conservation and the State Board of Health, all of which are members of the Louisiana Stream Control Commission, an exofficio, non-budgeted agency acting as the state's water pollution authority.

Covering the entire state, the commission has a broad range of duties. From 1966-67 alone, it involved itself in an immense number of activities including: continuing a statewide water quality monitoring program initiated in 1958, maintaining close surveillance on 47 raw sugar factories and refineries and streams receiving their waste discharges, conducting investigations of 30 fish kills, providing technical information, conducting biological and chemical surveys, continuing efforts to abate oil pollution of coastal areas and enforcing conservation and pollution standards. While the Stream Control Commission is responsible for the waters of the whole state, the Federal Water Pollution Control

Administration, a government body, concerns itself primarily with the Mississippi River and industries and municipalities on its banks.

Along the river, the administration maintains six field stations which draw weekly water samples and test them with one of two activated carbon (or mega) samplers. With the use of these apparatuses, the administration is able to discern what industry or municipality is discharging a particular pollutant. The U.S. agency lends both personnel and equipment to the state Stream Control Commission and works jointly with the commission to achieve similar goals.

Besides the Federal Water Pollution Control Administration and the Louisiana Stream Control Commission, other bodies investigating pollution include: the Lou-isiana Air Control Commission, which enforces air quality criteria; Gulf South Research Institute, which has received a major federal contract totalling more than \$800,000 to investigate whether certain pesticides and other environmental chemicals can induce cancer in experimental animals, and many university departments such as the LSU Coastal Studies Institute, which aided the U.S. Coast Guard in investigating the oil spill from the Chevron Oil Co. rig in the Gulf of Mexico. Large industries, including Kaiser Aluminum and Humble, are also conducting research to abate contamination spewing from their own stacks and pipe lines.

The fight against pollution undoubtedly requires the concerted research efforts of federal, state and local governments. But the thrust by these governmental bodies would be of no avail without the cooperation of every American. Individual initiative could well be the answer to the nation's problems.

President Nixon said, "Through the Council on Environmental Quality, through the Citizens Advisory Committee on Environmental Quality, and working with governors and mayors and county officials and with concerned private groups, we shall be reaching out in an effort to enlist millions of helping hands, millions of willing spirits—millions of volunteer citizens who will put to themselves the simple question: 'What can I do?'"

The government listed some tips on what the individual can do to help clean up his surroundings.

- 1. Become informed about the conditions of the public water and air. Find out the beneficial uses which they permit today, the expanded beneficial uses which they can permit in the future, if their quality is enhanced.
- 2. Interest other citizens and citizens organizations in the water and air quali-

ty problem and in the opportunities which the water and air quality standards program offers.

- 3. Attend state water and air quality hearings and encourage others to attend and express clear views about the need to enhance quality of our atmosphere.
- 4. Support the specific pollution abatement and control measures which enhancement of water and air quality will inescapably require, and encourage and develop the support of others for such measures.

At home one should:

- Be sure that everything washed down the drain or flushed down the toilet can be handled by the sewage system.
- When gardening or having construction work done on lawns, take care not to leave bare patches of soil that can wash away when it rains, carrying soil and silt to streams and rivers.
- When cleaning or washing the dishes, use only as much detergent as is needed.
   Detergents contain phophates, which help algae and weeds grow in rivers and lakes.

On outings one should:

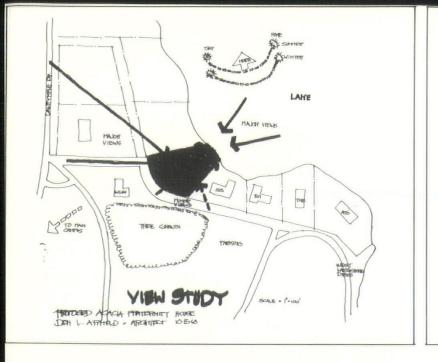
- Take garbage and trash home when going on a picnic on the beach or near the water. Don't throw it in the water or dump it on the site so it can blow, slide or wash into the water.
- If you own a boat with toilet facilities, either 1) see that the boat is properly equipped with holding tanks and the deck area equipped for handling wastes or 2) equip boat with a sewage treatment device acceptable under the guidelines set by law and see that it is kept in good operating condition. Do not throw trash overboard.

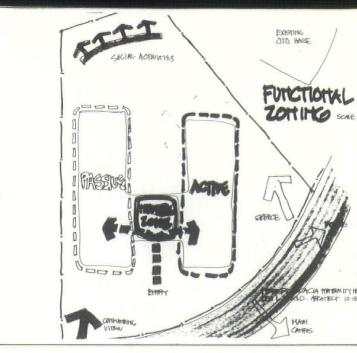
Stressing the importance of individual cooperation, President Nixon said, "It is in this way—with vigourous federal leadership, with active enlistment of governments at every level, with the aid of industry and private groups, and above all with the determined participation by individual citizens in every state and every community, that we at last will succeed in restoring the kind of environment we want for ourselves and the kind the generations that come after deserve to inherit.

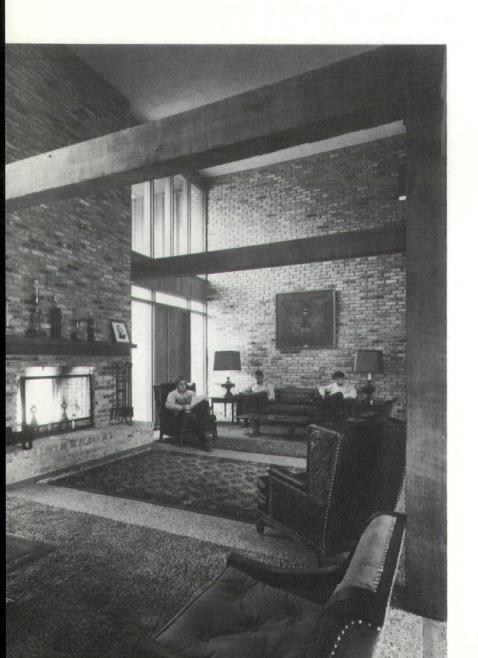
"This task is ours together. It summons our energy, our ingenuity and our conscience in a cause as fundamental as life itself."

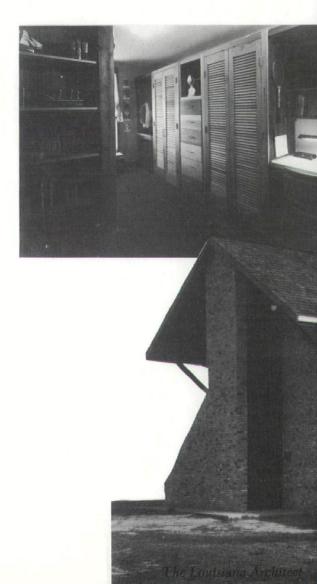
Recent government surveys indicate that pollution in relation to population in the United States in declining by about one per cent a year.

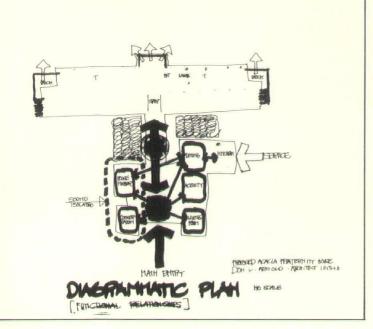
With action now, perhaps mankind may have a chance to save himself. Only time will tell.













# A Project I Enjoyed ACACIA FRATERNITY HOUSE--LSU

The building was built for the purpose of housing the 50 chapter members of the Acacia Fraternity. The house has 25, two-man rooms, plus the various ancillary facilities, dining, living, activity, etc.

The site, 0.52 acres, is located on the lake, on the extension of West Lakeshore Drive.

General agreement among the Architect, the Board of Acacia, and the chapter members determined that the house should possess an atmosphere of comfort, masculinity, and warmth, utilizing materials that are as maintenance-free as possible. Sound conditioning, by zoning noisy and quiet areas was a key planning factor.

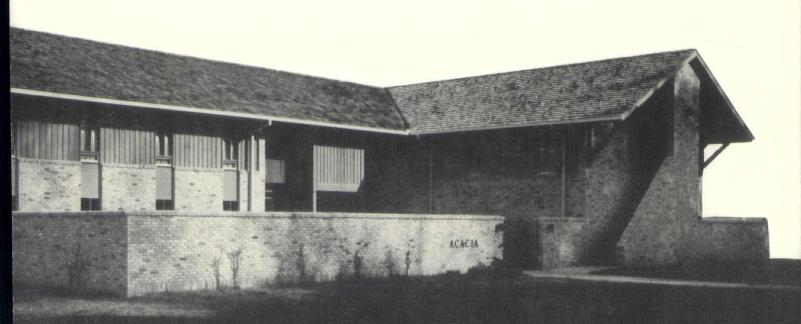
Architect Don L, Arnold
now Arnold/Post Associates AIA

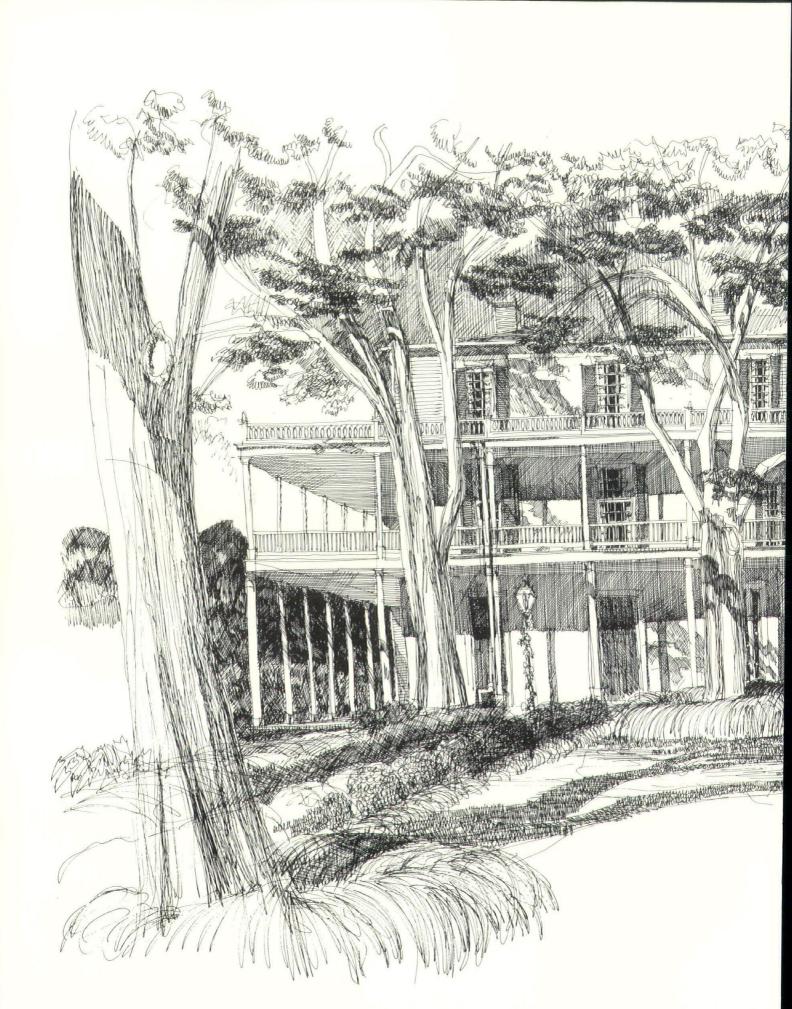
Structural Engineer Rayner, McKenzie

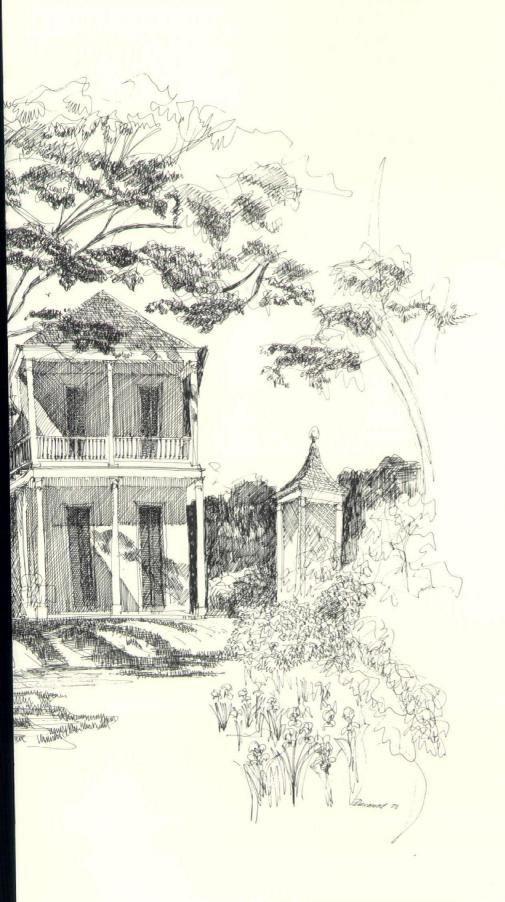
Mechanical Engineer William J. LeBlanc

Electrical Engineer Ogden, Hall

Food Service Consultant Max Futch







#### THE ELMS

JOHN T. DESMOND, F.A.I.A.

One of the oldest buildings in Natchez, built about 1782, is this very interesting structure. The Spanish heritage is distinctly expressed by the low ceilings, the wide porches and the detailing. The wing to the right was added in 1856, enclosing an elaborate stair which formerly was outside. Surrounded by box-woods which are over 100 years old as well as by beautiful oaks, the house with its site form a most pleasing garden spot in Natchez. Since the original Spanish building, the house has had a colorful history of owners and is now occupied by the fourth generation of its present appears.

owners and is now occupied by the fourth generation of its present owners. The Elms is one of the buildings opened for the annual Natchez Pilgrimage.

#### Two Louisiana cities join hands to produce a handsome new library

The building program for the Opelousas Public Library was rather unique in that the structure houses both the Opelousas Branch Library and the headquarters for the Opelousas-Eunice Public Library System. This requirement, plus the relatively small site in downtown Opelousas, dictated a two-story scheme.

Housed on the ground floor is the Opelousas Branch Library with all of the typical public library functions, charging desk, reading, stack, and reference areas. The second floor contains the Opelousas-Eunice Public Library System. Headquarters (offices and work areas for processing books). Additionally, a meeting room is available to the community for club meetings, discussion groups, story hours, etc.

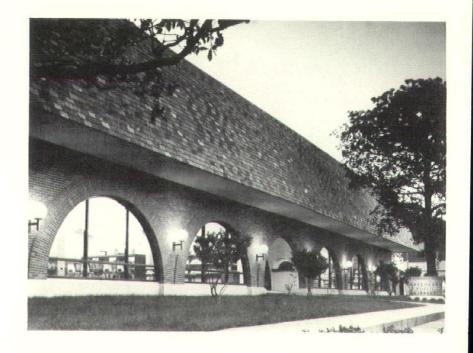
By blending simple building materials and methods of construction along with contemporary technology and aesthetics, the Library has maintained a character which may be seen in many of the older buildings throughout the area. The brick arches were used to create the heavy massive feeling of masonry and yet achieve openings that allow natural light to penetrate the interior spaces. Wide overhanges, traditional and common with Acadian Architecture in the area, were created to protect and shade the large glass areas from glare and to help maintain an economical operation of the cooling system.

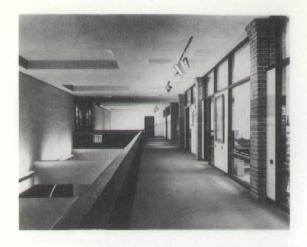
The interior has walls of brick, plaster, and plywood paneling. The floors are carpeted throughout with the exception of the rest rooms (ceramic tile) and entry (brick pavers). Year-round air-conditioning is provided.

At the dedication of the new facility, Opelousas Mayor Wilfred Cortez said, "The City of Opelousas is very proud of the new public library building, not only for the fine architectural design which fits so beautifully in with other Acadiantype homes and buildings traditional in this part of the South, but for the great use that it will serve to help enlighten and influence the people of this Parish by having at hand thousands of great works to be read and enjoyed."

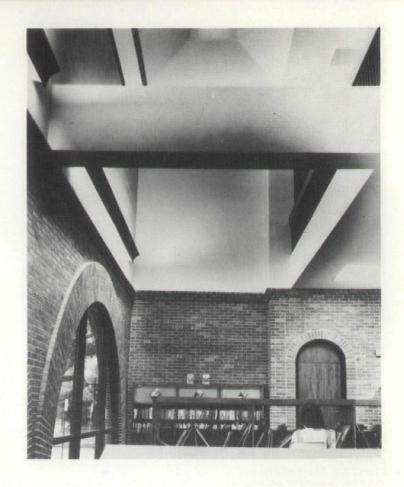
## Opelousas-Eunice Public Library

Hamilton, Mayer and Associates, Inc. Architect & Engineer











photography: Charles W. Lanusse

# NO SELLE

#### Acoustical Factors In Design

by George A. Saunders, AIA

"Paint your ceilings black to improve your lighting efficiency." Completely balm? Completely, but how many of us are guilty of painting our ceilings "black" to sound and expect improved efficiency.

Good hearing conditions and acoustic environment are essential in spaces designed for the purpose of conveying and receiving the spoken word and musical sounds. The desired sounds must be distributed evenly and completely throughout the entire space; the undesirable sounds must be eliminated.

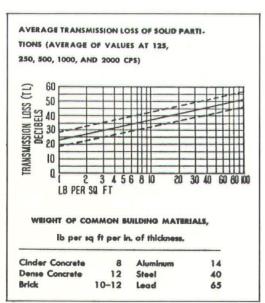
Design criteria has been established and has been translated into working rules. This criteria can be classified under four relatively distinct headings: background noise, loudness, distribution and reverberation.

Background noise in a room should be so low that it will not mask the weakest sound of speech or music. Common noises that fall in this category are mechanical system noises, exterior noises from traffic, machinery and voices from adjacent areas. Excessive background noise in a listening room is completely unnecessary, and these objectionable sounds are eliminated in the building's conception without additional cost to the owner. The allowable background noise for any given space can be established by data published or program requirements set down by the client.

Noise control in buildings is achieved by means of proper planning and the proper use of materials to isolate sounds between adjacent space. As long as the noises involved are of the common variety (i. e., traffic, business machines, etc.), we need only consider the average transmission loss and its effect on av-

erage sound levels. Fig. 1 illustrates certain types of walls and floors common in the construction of buildings. In general, it will be noted that the transmission loss (TL) becomes greater as the wall becomes heavier and more complex. A homogeneous wall increases in its potential as the weight increases provided the wall is not porous to air passage, Fig. 2 indicates the average transmission loss (TL) and the dashed line the range in which most solid walls fall. The slope of the curve is approximately 5 db increase for each doubling of weight. Scanning Fig. 2, the solid line indicates that a 3-lb./sq. ft. wall will afford a TL of 30 db: a 6-lb. wall will afford a TL of

(Continued on page 17)



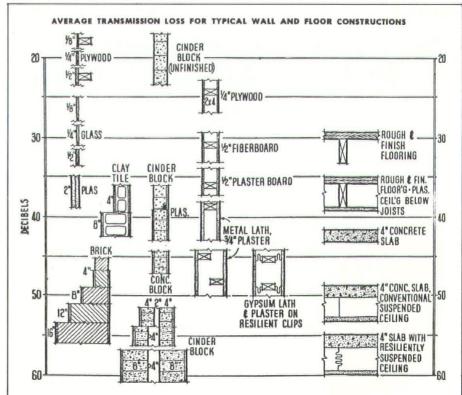
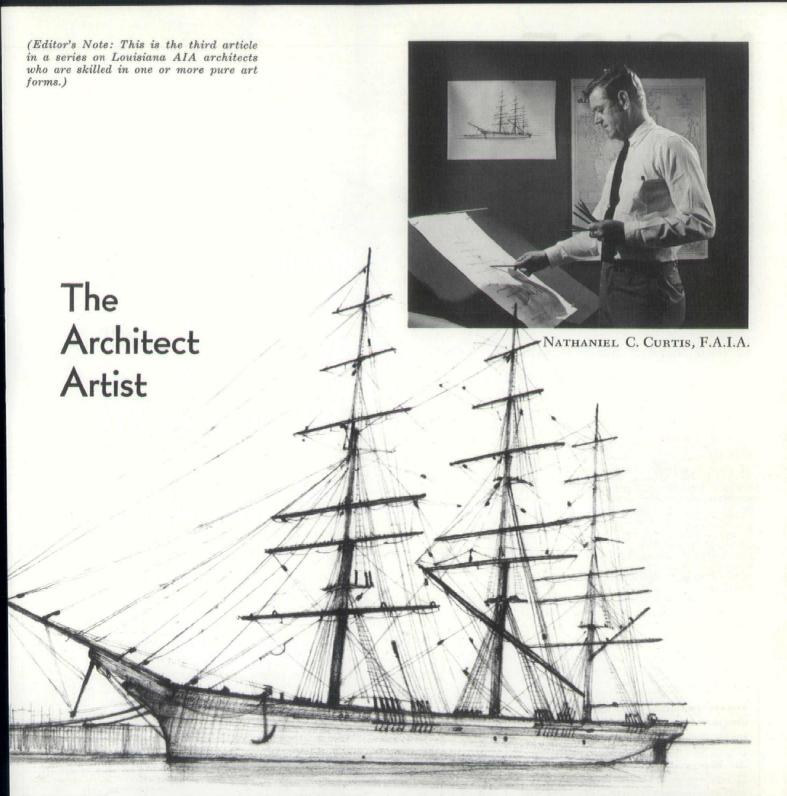


FIG. 2

FIG. 1



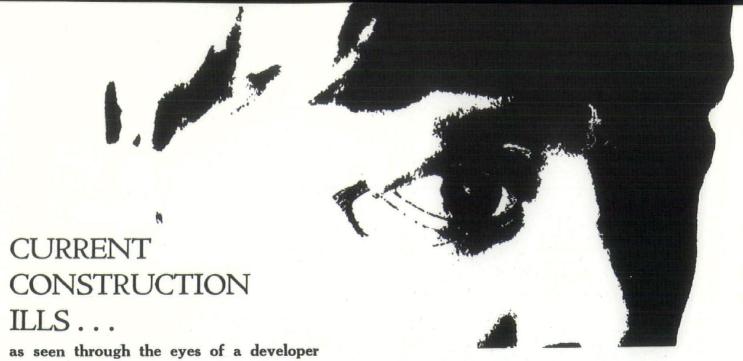
Thoughts of the sea and an interest in U.S. maritime history, are never far from Nathaniel C. Curits, Jr., F.A.I.A., a partner of Curtis and Davis Architects. One of his hobbies is drawing the great old ships of the "Flying Cloud" era, when American vessels in the tea and silk trade raced one another and the British halfway across the globe.

Curtis, as an artist, enjoys using mixed media — pencil and watercolor — and even some of the standby copy processes of the architectural office. His usual method is to make a small pencil drawing of a ship and its complete, accurate rigging, and then to enlarge it by photostat. This first enlargement is tinted with watercolors. This creates a second "original", which is then reproduced in small quantities (usually limited to 20 copies) by color photography.

His art interest developed in recent years — or reawakened, for he did a great deal of drawing in his youth — when a

research project on the Coit shipbuilding family of New England required illustrations of a type which had to be drawn anew from old engravings. His father, Nathaniel Cortlandt Curtis, Professor of Architecture at Tulane, also used a pencil and watercolor method in making his sketches of old New Orleans buildings. Some of these are in the book "New Orleans: Its Old Houses, Shops and Public Buildings". (Lippincott, 1931)

Curtis' responsibilities include a heavy schedule as architectural designer, and as design coordinator on large projects (The Forrestal Building in Washington, second largest U.S. office building; the 82,000 seat domed stadium in New Orleans) and in office administration at Curtis and Davis. But he values his hobbies of sailing, art and the collecting of scrimshaw and artifacts of the sea. He believes that architects need varied interests — "and free weekends" — to keep their ideas fresh in the professional field.



As Abel Berland sees it, real estate developers can rebuild America if America lets them. But he isn't so sure they will receive the permission and that, he maintains, spells disaster.

Not surprisingly, Berland is a real estate man, president of the American Society of Real Estate Counselors, an elite group of 375 professionals who write C.R.E. — Counselor of Real Estates — after their names.

A construction crisis is at hand, he argues, that could erode tax bases, arrest the redevelopment of urban areas, deny good housing to those who badly need it and force up rents for apartment dwellers and office renters.

The situation arises, Berland says, because of the new tax law that greatly reduced depreciation advantages to developers, and because of steadily rising demands by the big money lenders, especially life insurance companies.

The new tax law," Berland says, "has taken incentive from the developer. He can hope for an 8 to 10 per cent return, but you can get close to that in bonds, and without risk."

#### Price of Action

He may not even reach that figure, it can be presumed, if the lending situation continues to develop as it has during the past few years. Lenders now are not content just to lend; they want a piece of the action.

Berland feels, in fact, that they want four pieces: "They demand higher interest, and ask for 3 to 4 per cent of the gross profits, a free equity position, and part of the proceeds if the development is sold."

He maintains that if this continues, "lending institutions will, in fact, end up owning most of the choice real estate in the country." The situation already is seriously limiting construction activity, he adds.

One response of developers who cannot live with such deals is to approach corporations and sell them on the idea of a development as an inflation hedge—and perhaps not incidentally, as a showcase for the company's products.

Berland believes this may be the real estate wave of the future, based on the ready acceptance by corporations of

plans suggested to them by developers. The corporations have access to credit on a greater scale and on better terms than the single developer could ever hope to get.

#### Corporate Deals

Increasingly, developers are seeking the protection of corporate deals, Berland claims, because under existing terms from the lending institutions the developer must take great risks without a commensurate reward.

"Next to restaurants, this industry has the highest mortality rate of any," he says. "One single mistake—soil problems, foundation troubles, a strike—and you're out of business." Better to share the risk.

Moreover, rising costs of land, labor and materials are forcing developers to think bigger, to put up enormous buildings in hope that costs can be cut by volume. That means more capital is needed.

In Chicago, where Berland presides over Arthur Rubloff & Co., a diversified real estate firm, some land prices have risen 500 per cent in the past decade.

Asked for an example, Berland relates how he assembled land for the new Sears, Roebuck building, projected to be the tallest in the world, at \$150 a square foot. "That same land was assembled at \$30 a foot a half dozen years ago."

Should the industry's problems be overcome in some unforeseen manner, the future could be a lot brighter than depicted, Berland concedes. "We are building up a demand not unlike that following World War II," he says.

#### **Housing Units**

Some 2.6 million housing units will be needed each year during the 1970s, for example, which is double recent rates. But perhaps an even bigger job is the development of more office space.

America's economy is becoming more service oriented, meaning relatively more demand for offices, less for factories. Moreover, the tendency is to allot much more space per office worker. In the past, 100 square feet per worker was considered adequate. Now it's up to 150 and in some instances 300 feet.

But all that projected construction is only a prospect, Berland reminds us. The present reality is rather grim. 35 db: a 40-lb. wall 45db and an 80-lb. wall 50 db. in any case, the values on these two charts will be obtained only if the wall is completely tight against air leaks.

It will be noted that the common practice of placing porous blanket material commonly referred to as "sound insulation" materials is conspicuous by its absence from these graphs. These materials are transparent to sound as their weight is negligible in dense partitions. Caution must also be associated with a myriad of other architectural items that may disturb the TL factor of a separating partition, i.e., doors; air-conditioning grills in the doors; electrical boxes backed up on adjacent sides of the partitions. All of these items and others must be considered and evaluated when the background noise in a listening room must be controlled from noise created in the adjacent space.

The sounds that we want to hear must be sufficiently loud. They must lie above the level of the background noise. The ear, being a selective instrument, will seek out and hear the loudest sound or the sound that is of a distinctly different frequency.

Small rooms 2500 to 25,000 cu. ft. should be able to receive the spoken word without electric amplification. An intermediate room 25,000 to 250,000 cu. ft. may be able to receive the spoken word without amplification provided the room has been properly shaped and treated for reverberation control. Rooms larger than 250,000 cu. ft. will require amplification for the spoken word, however, an orchestra may be designed to fill a space of practically any size.

There are several requirements for sound distribution for good hearing. The loudness must be adequate to hear above the background noise that exists. The room should be free from all flutter, echoes and undo "hotspots." Concave surfaces, many of which originate from the fanshape plan in auditoriums, are a po-tential source of danger. Sound radiates outward as a sphere with the source as the center, with the sound level decreasing as its sphere area increases. The sound level drops 6 db each time the distance is doubled from the source. Hence, we see that the room should be shaped to reinforce the sounds by reflecting these sounds into that part of the room away from the source. This may be accomplished by sloping the ceiling that is used for reflecting the sound into the rear of the room, It is NOT NECES-SARY to have a completely absorbent ceiling for good hearing conditions as so often used by architects and advocated by representatives of companies who sell acoustical material. Conversely, a good listening room SHOULD use the ceiling to reflect sound into that part of the room that requires the sound reinforcement

Reverberation is the prolongation of sound after the original source has been stopped. Reverberation can be useful to reinforce sound provided it does not persist for a period of time of 1/17 of a second in which the ear will establish it as a separate sound and would classify it as an echo.

Reverberation time for a given space is based on the function of the room and its cubic content.

The reverberation time in a room is determined by the materials used in the construction of the room, i.e., concrete block, brick, carpet, etc., and it is usually corrected by adding absorptive material in the correct amount. The correct amount is again NOT a complete absorptive ceiling if the room is a listening room.

Since some of the essentials required to meet good hearing standards have been discussed, it must be pointed out that what has been accepted as "standard" means being accepted by "qualified" listeners. Much is being done in the field of acoustics, and the profession should keep abreast of the work being published, and be aware that acoustical problems exist in buildings. Poor acoustics can render a building as uncomfortable as a poor electrical or mechanical solution.

#### A Ready Reference for Architects When Specifying Materials

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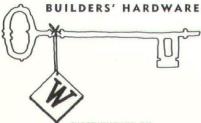
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