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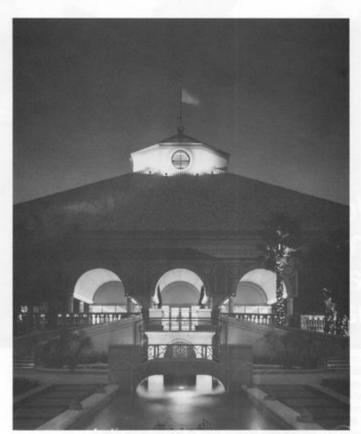
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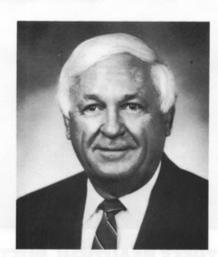
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September/October, 1990 Vol. 37, No. 5

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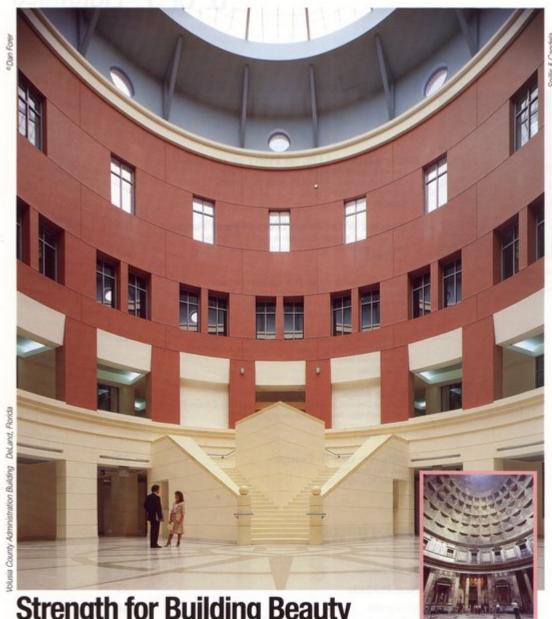
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Cover photo is of Esperante in West Palm Beach by RTKL. The photographer is Hedrick-Blessing.



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FLORIDA ARCHITECT

EDITORIAL

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Vice President/ Public Affairs Commission Joseph Garcia, AIA 3300 S.W. Archer Road Gainesville, Florida 32608 This issue of Florida Architect is about maintaining harmony between the built environment and nature. But, more than that, it's an examination of how five very large buildings manage to integrate themselves into either the landscape or the cityscape in a positive, non-destructive way. That's not easy, particularly when the structure to be integrated has in excess of 660,000 gross square feet, covers over five acres of ground or rises 23 stories. The buildings in this issue cover the state geographically from Miami to West Palm Beach to Orlando to Jacksonville. Several are skyscraping towers rising many stories and others are sprawling, ground-hugging megastructures which house the headquarters of corporate giants. All are eminently successful, not only as elegant works of architecture bearing testimony to the skill of the designer, but as proof that new construction can successfully weave itself into the fabric of nature or the built environment without destroying the integrity of its newfound home.

Designing a building is an awesome responsibility. It's rather like cosmetic surgery on the environment. One wrong move and the integrity of a neighborhood, a downtown or the countryside can be destroyed. The responsibility for designing buildings that are compatible with their surroundings is brought to bear on the architect whether he or she is designing a residence in a neighborhood or a downtown skyscraper. The larger the building, the greater the impact.

I am amazed when I see a building that seems to snub its nose at its surroundings – a building that is clearly the work of an uncaring or insensitive designer. I wonder if the architect has considered how aesthetically devastating a toll such a building takes, on the psychological and physical profile of a place. There is no excuse for insensitivity in the built environment any more than there is for a surgeon putting two noses on a trusting patient's face. There is responsibility implied in the word "architect."

Each of the buildings in this issue, whether urban or rural, is site-conscious. Each of these buildings makes its presence felt in a positive way. Each improves the environment. None are detractors and in that way they each meet my definition of good, possibly great, architecture. **DG**

Hurricanes May Get Stronger

The names will be different, but more hurricanes with the powerful punches of Hugo and Gilbert may be prowling the Atlantic, Caribbean and Gulf of Mexico in the future.

"The probability of more intense hurricanes in the Atlantic region is greater in the next decade or two than it has been in the 1970s and 80s," says meteorologist William Gray of Colorado State University who analyzes hurricane patterns.

Gray predicts a possible return of the more ferocious hurricanes of the 50s and 60s because of an apparent break in the periodic West African drought. Rainfall in the Sahel, typically associated with more intense hurricane activity, was above average in 1988 for the first time since 1969, he says. A second rainy summer this year indicates an end to the drought.

The most intense hurricanes usually form at low latitudes from tropical disturbances moving westward from Africa. The well-watered conditions in the 50s and 60s produced 31 of the most severe kind (categories 4 and 5) in the 17-year period from 1950 to 1967.

Hurricanes are classified by the Saffir-Simpson scale, the fiercest is a No. 5 or catastrophic storm. The atmospheric pressure at its center drops drastically and its wind exceeds 155 mph.

Last year's Hurricane Gilbert, which left a wide swath of devastation across Jamaica and the Mexican Yucatan, was the mightiest hurricane on record in the Western Hemisphere. Its atmospheric pressure dropped to 888 millibars and its wind speed reached 200 mph.

Last September's Hugo, which ripped through the Virgin Islands and Puerto Rico before clobbering the coast of South Carolina had sustained winds of 150 mph. Damages from Hugo are estimated to exceed ten billion dollars, both internationally and in the U.S. Reprinted from *The Wind* Engineer, January, 1990.

HOK To Design Center for Space Education

The Tampa office of Hellmuth, Obata & Kassabaum (HOK) has been selected by the Astronauts Memorial Foundation and NASA to design the Center for Space Education at the John F. Kennedy Space Center in Florida.

The \$7-million Center will serve as a living memorial to U.S. astronauts who have died in the pursuit of space exploration. The Center will also allow NASA to expand its space education programs to reach a larger audience of students, teachers and families. NASA expects the new Center to draw three million visitors annually.

HOK designed the National Air and Space Museum in Washington, D.C. and was recently selected to design the Florida Museum of Natural History in Gainesville, Florida



gr. A. Certer to Space Encoder PSA :





Architectural Holstein Cows

The Spessard Holland Office Building in South Miami was designed by the architectural firm of BALDWIN SACKMAN CARRINGTON ARCHITECTS, P.A. The building recently exceived its finishing touches in the form of a herd of Holstein Cows.

The two-dimensional cows, fashioned from a polymer concrete and automobile paint for durability, serve to accentuate the herds of already existing live cows which graze on the land bordering the Holland Building. The Holsteins were the creation of Dallas artist, V. Wayne Amerine.

The Holland Building has glass facades forming striking continuous bands that create a sharp contrast with the royal palms that decorate the entrance and driveways. The Holstein Cows add a bold and graphic accent to the building.

Patients Require Special Hospital Design

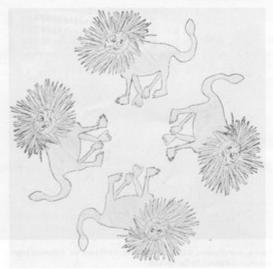
Picture in your mind a traditional hospital setting dedicated to saving the life of newborn infants. Then substitute natural daylight for the glaring overheads, warm pastels for the hospital green, home furnishings for institutional furniture, perhaps even add soft classical music playing in the background. Now you've got a more accurate picture of a modern neonatal care facility.

Advances in medical care change the physical shape of hospitals in countless ways, as the architects of Hansen Lind Meyer (HLM) can testify. One of the largest U.S. architecture firms specializing in healthcare facilities design, HLM has designed neonatal care facilities in many cities across the country. Although very different in appearance, these buildings indicate some striking trends in healthcare architecture.

The first consideration is to provide three levels of care for newborn infants. Level One is for normal babies, Level Two is for complicated deliveries which required specialized care and Level Three is for babies in life-threatening conditions including some preemies, crack babies, and AIDS patients, which require much more space per patient and special equipment.

Alan Wilson of HLM's Orlando office predicts that increasingly, architects will be able to control the healthcare environment in terms of light and sound. Another trend he notices is the increased interaction of patient's parents with healthcare providers. More parents are demanding to be bedside with their children. In the design of the Minneapolis Children's Medical Center, HLM built full-size models of rooms complete with equipment to allow an advocacy group comprised of parents, patients and staff to give feedback on the designs before they are built.

AIA News Service



Israeli school children's drawings were transformed into mosaic tiles for the Children's Medical Center, (Cannon)

Correx

FA has been notified that credits listed in the May-June, 1990 issue for the design of the award-winning Toussaint L'ouverture Elementary School were incomplete. The Firm-of-Record for the project was Zyscovich and Grafton Architects with Bernard Zyscovich as Principal-in-Charge. The project was seen through to completion by Zyscovich, Inc.

Also, a paragraph was inadvertently deleted from "From the Publisher" by George A. Allen which appeared on page 44 of the May-June issue. The paragraph, under the "Building Codes" should have read as follows:

Legislators modified the state's Handicapped Accessibility Code by approving a bill to require all non-residential covered or underground parking facilities built after January 1, 1991 to have at least an 8 foot 2 inch clearance on the street level portion. This, of course, is to allow space for wheelchair vans to park. Plans sealed by an architect prior to that date are exempt.

The editor regrets that photo credits for the Venetian Pool were not credited to Dan Forer in the July issue.

FAME Awards Expand

For the first time in its history, the 1991 FAME Awards presented by the Builders Association of South Florida will be open to nonmembers as well as members of the Homebuilders Association.

To apply for the 1991 FAME Awards, contact Jill Poppe, BASF, (305) 556-6300 (Dade); (305) 525-8225 (Broward). Entry fee for members of BASF or other NAHBchartered Association is \$195; entry fee for nonmembers is \$325.

The deadline for registration is October 12. Entry materials are due by December 10. Winners will be announced at the FAME Awards Banquet on March 9, 1991, and will be featured in the March 10, 1991 Miami Herald's "Parade of Homes."

BOOKS

Architecture: A Place for Women

by Ellen Perry Berkeley, editor and Matilda McQuaid, associate editor Smithsonian Institution Press 311 pages, 63 b&w illus. \$19.95 paperback

When Louise Bethune became the first woman elected to the American Institute of Architects one hundred years ago, she opened the field to all women. This new book commemorates her achievements and highlights the accomplishments of other women in architecture, those of the past as well as those currently involved in the profession.

Contributions are brought to light of many accomplished women such as Louisa Tuthill, who wrote the first history of architecture published in the U.S.; Julia Morgan, one of the first women to be recognized nationally and designer of San Simeon; and Miss Sue Frost, who pioneered for women and the preservation movement alike when she saved the architectural heritage of Charleston, S.C. Also encountered are some of the educational environments that have encouraged women in architecture: the unusual Class of 1930 at MIT which graduated 14 women directly into the Depression; the extraordinary Cambridge School, open only to women; the unique Women's School of Planning and Architecture born of the 1970s.

Orders for the book should be sent to: Smithsonian Institution Press, Department 900, Blue Ridge Summit, PA 17294-0900. Please include \$2.25 for postage and handling.

Sitting Lightly and Oh, So Pretty on the Land

Burger King Corporate World Headquarters Miami, Florida

Architect: HOK Architects, Inc. HOK Services Provided Facility Programming, Landscape Architecture, Site Planning, Interior Design, Graphic Design, Mechanical/Electrical Engineering and Lighting Design

T he fragile environment of South Florida is always a major concern to the architects of HOK, as it was to their client, Burger King Corporation. This complex located just west of Biscayne Bay in Miami was built to house offices and support facilities for Burger King Corporation. The World Headquarters, as the complex is known, is an environment that was created using HOK DRAW, a design and drafting software program created by HOK. Site preservation was a major design imperative and by preserving the natural environment, Burger King Corporation has established itself as an environmentally responsive leader in the corporate sector. Only five percent of the 114-acre site is occupied by the complex. Native vegetation was retained and enhanced with additional native plant material. The manmade lake occupies seven-anda-half acres and approximately 54 acres will be retained in its natural state.

The site had an impact on the final design in a number of ways. Situated on the edge of a lake, the architect's goal was to minimize the building's presence as seen from Biscayne Bay. To this end, the main building steps down from four to three to two stories as it progresses along the



Above, west elevation, landside, opposite page, top, east elevation, lakeside, and bottom, south entrance. Following pages, conference room, dining room and building entrances. All photos by George Cott.









edge of the lake. The building is also stepped in plan to break its profile up even more. Finally, the building is terraced along the north, south and east sides and large planters occur at each of these levels and on the roof. Plant material was selected that would climb and fall across the structure to further soften the building and help it blend into the site, thus minimizing its impact even further.

The terraced building edges have overhangs at each level to shield glass from the sun. Plantings along the building perimeter were also designed to reduce glare and solar reflections.

Where plantings are brought close to the building, it is so the





trees' spread will cast shadows on the walls, further reducing the glare and heat load.

The complex consists of a four-story building, a two-story conference and training facility, a two-story laboratory building and a two-story computer center. Built of pink-tinged stucco and glass, the center was constructed over two levels of employee parking.

The integration of building and site in a non-intrusive way is an indication of how architects must proceed in Florida's overbuilt and delicate landscape.

The Burger King Headquarters is a strong and definite step in that direction... a building that responds to its setting in a positive and non-threatening way.

Diane D. Greer





A Rapport With Nature Dictates Final Form

AAA Corporate Headquarters Lake Mary, Florida

Architect: Spillis Candela &Partners, Inc. Principal-in-Charge: Hilario Candela, FAIA Project Designer: Hilario Candela, FAIA Project Manager: Charles Hugh Crain, AIA Engineering Consultant: Spillis, Candela & Partners Interior Design: Spillis, Candela & Partners Landscape Architect: Glatting Lopez Kercher Anglin General Contractor: The George Hyman Company Owner: American Automobile Association Developed by The Oliver Carr Co. for the American Automobile Association

The simple geometry of the Corporate Headquarters of AAA provides a pleasant contrast to the verdant, flowing terrain of the site it occupies. But, the sleek building is also in harmony with its surroundings... the gentle rolling hills of southern Seminole County.

Placed on the site in such a way as to create an open feeling in any part of the building, two Jshaped wings flare out from a rectangular atrium located at the center of the structure. Although the wings appear to be of equal length, one is 130 feet long and the other is 190 feet long. The wings, whose gross square footage is 660,000 square feet, are oriented on a north-south axis. That alignment places the courtyard at an oblique angle beneath the path of the sun and shields the atrium from most of the day's solar impact. The 75-foot-high atrium rises above the wings which extend out from it, form-





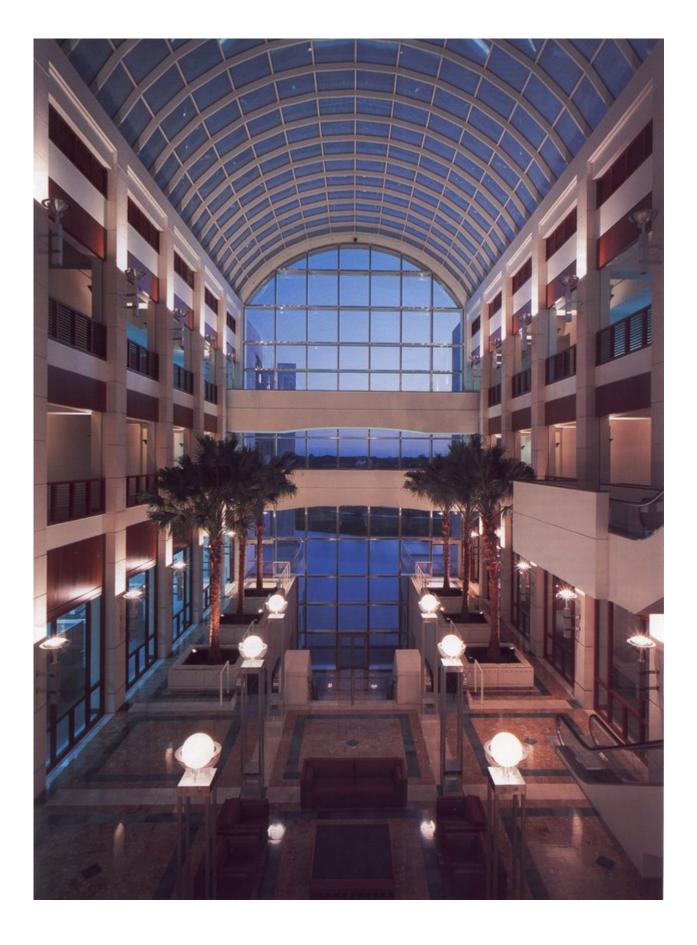
All photos by Norman McGrath.

ing a curved spine that links the overlapping wings and sets off the articulated grid of a brise soleil mounted five feet from the wings' exterior walls.

The design of the building's system of light filtration and shading further softens the solar impact, leaving a comfortable sense of openness to the outside while keeping the building energy-efficient and glare-free.

Exterior fabric is a combination of floor-to-ceiling greentinted insulated windows and precast concrete with a coquina hue and texture. The structure's overall effect is one of a tremendous mass floating over the landscape, an effect enhanced by the exterior colors and the delicate tracery of the brise soleil. The building is not intimidating as one approaches it from the entry plaza beneath a green glass canopy that leads into the atrium.

Inside the atrium, the volume of its 900,000 cubic feet is awe-



inspiring. A glass vault crowns the atrium and white frits deflect the sun's rays and throw patterns across the tops of the walls. The floor beneath the vault is laid in an interwoven pattern of cream, pink-orange and verde marble.

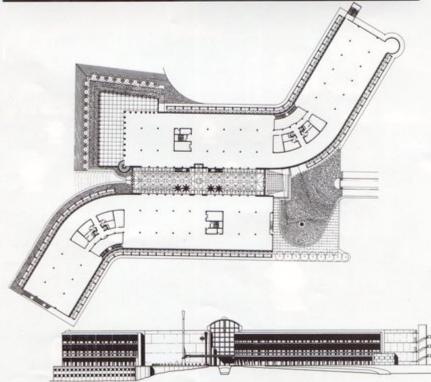
Entry to all parts of the building is through the atrium. The offices that open off its sides have glass walls and 15- foot ceilings. Photography, cartography, computers and administrative offices are located in these wings and can be reached by "user friendly" stairs and elevators.

Almost half of the 1,131 parking spaces for employees and guests lie below the atrium and office areas. The balance of the parking is on small paved and grass lots situated around the structure. A large, ground-level cafeteria faces the manmade pond and the golf course. The western wall of the cafeteria is a green-tinted, double-glazed curtain and its curving lines echo the shape of the balcony outside.

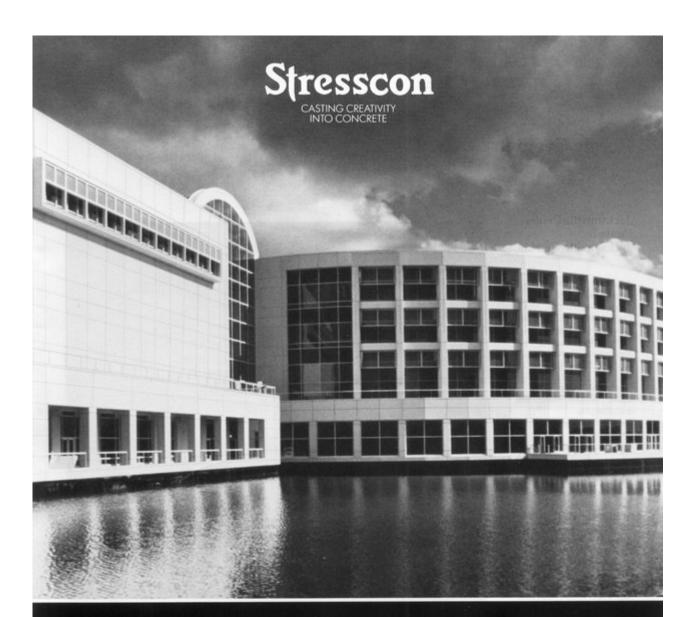
The materials, colors and orientation of the AAA Headquarters were determined as much by the site it occupies as by the user's needs, particularly the need to have large open offices. The final form reflects that need clearly. The building is at once elegant and refined as it crowns its grassy, central Florida site. In an area that is already overdeveloped and congested, the AAA will hopefully serve as an environmentally-sensitive model for the buildings that follow. Laura Stewart

The author is a freelance writer living in Orlando. She is co-author of Florida Historic Houses.





Ground floor plan and south elevation courtesy of Spillis Candela & Partners. Photo by Norman McGrath.



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Pictured above: The award-winning AAA building in Orlando. Designed by Spillis Candela & Partners, Coral Gables. Stresscon not only provided the architectural cladding, but joined forces with our sister company, PSI (Prestressed Systems Industries) to engineer, manufacture, and install the structural precast/prestressed precast/prestressed system, including joists, double tees, and soffit beams. Just a few of our

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Heroic Geometry On An Urban Scale

Jacksonville Center, Phase I Jacksonville, Florida

Architect: KBJ Architects, Inc.

Project Designer:

David M. Laffitte, Jr., AIA Project Architect: Tri T. Vu, AIA

Principal-in-Charge: John J. Diamond, AIA Mechanical/Electrical

Engineers: Newcomb & Boyd,

Inc

Structural Engineer:

Smith, Hardaker, Huddleston

& Collins, Inc.

Contractor: The Auchter

Company

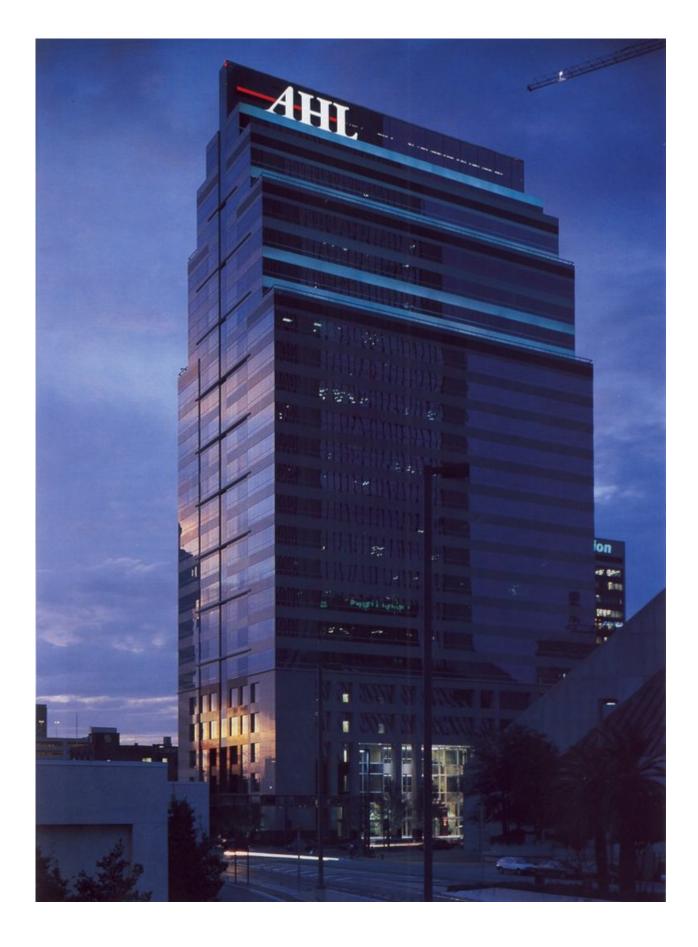
Owner: Rouse and Associates

This new 23-story tower is the first phase of a 2.3-acre office/retail complex which Rouse & Associates is developing in the heart of Jacksonville's rapidly developing waterfront. Responding to the owner's desire to phase construction and retain maximum flexibility for the future, Venturi, Rausch & Scott Brown developed a master site plan which locates two office towers on opposite corners of the block. The towers are organized along a pedestrian promenade which bisects the site on a northsouth axis. The plan strongly emphasizes the link between the river and the central business district. Retail shopping is envisioned along the promenade as a prelude to Jacksonville Landing, a retail festival marketplace which is located immediately to the south.

KBJ Architects was selected to design the 385,000- square - foot Phase I building. Numerous studies were made to verify and refine the master site plan. Provisions for a future truck dock below the promenade were added and the parameters for future development were set.



This page, south facade facing waterfront activity. Opposite, east facade at dusk. Photos by Kathleen McKenzie.



The Venturi, Rausch & Scott Brown master plan included towers with tops stepped along the north-south axis. Though the final shape of the building is very different, KBJ adopted the concept of the stepped facade because of the strong visual reinforcement of the promenade as it is oriented toward the river.

The tower was conceived as a series of overlapping planes and slabs whose geometry emerges from an heroically-scaled stone base that sets up a grid pattern and is meant to be appreciated from street level. The tower, on the other hand, is meant to be seen from across the river. The forms become increasingly abstract as one moves up the building. The horizontal aluminum "ties" which occur on alternate floors on the north and south facades serve to introduce an unexpected scale which further heightens the abstract quality of the composition. Clear glass is used at the base of the tower and two colors of reflective glass occur in the shaft. Bands of rosa Porrino granite are alternated with bands of aluminum to further the effect of overlapping

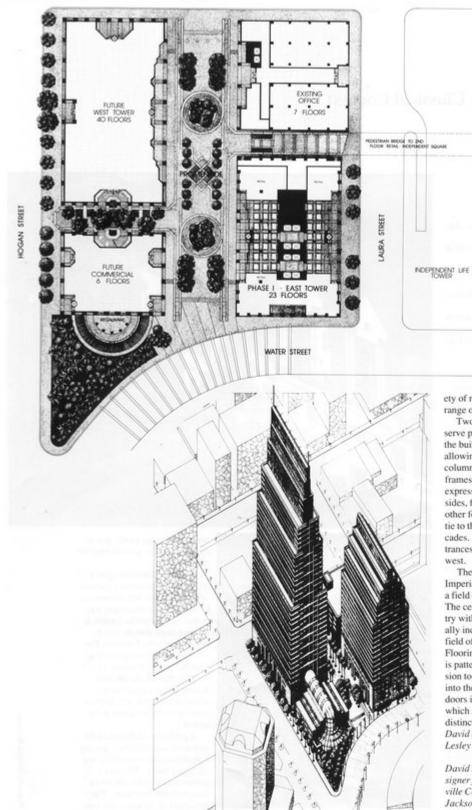
The "fin" at the top of the tower, was conceived as having neon signage behind the mirrored glass. Invisible by day, the graphics would emerge at dusk. The building's signature tenant, the American Heritage Life Insurance Company, opted, however, for more traditional signage, so the fin is used to handle discharge from the roof via mounted cooling towers.

The building has steel frame construction with columns 12 feet on center in the north and south walls. K-bracing was used at the core to provide stiffness in the north-south direction. The building core is asymmetrically situated to provide a greater vari-



This page, top, marble and graniteclad elevator doors reference the shape of the building. Below, view from Laura Street plaza at night. Building's well-lit base extends security to nearby retail customers. Photos by Kathleen McKenzie. Opposite page, master site plan and axonometric for Phases I and II.





FLORIDA ARCHITECT September/October 1990

ety of rental spaces for a wide range of clients.

Two banks of four elevators serve passengers. At the base of the building, the facade steps in, allowing full expression of the columns and aluminum glazing frames. Of the eight columns expressed on the east and west sides, four are structural. The other four visually strengthen the tie to the north and south facades. The tower has two entrances, one each on the east and west.

The lobby floor consists of Imperial red granite rectangles in a field of rosa Porrino granite. The ceiling repeats this geometry with rectangles of light (actually indirect light coves) in a field of white gypsum board. Flooring in the elevator lobbies is patterned in a deliberate allusion to Oriental rugs. Etched into the stainless steel elevator doors is a geometric pattern which references the building's distinctive profile. David M. Laffitte, Jr., AIA and Lesley N. Roberts

David Laffitte was project designer for Phase I of Jacksonville Center. Lesley Roberts is a Jacksonville writer.

Esperante West Palm Beach, Florida

Architect: RTKL Associates, Inc. Fort Lauderdale, Florida Structural Engineer: P.J. Ford & Co.

Mechanical/Electrical Engineer: Meyer, Strong & Jones Landscape Architect: Kilday Associates

Contractor: Turner Construction Co.

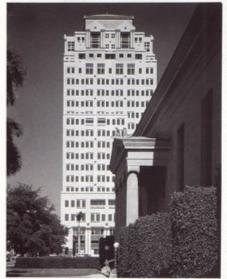
Owner: John W. Galbreath & Co./ The Hanna-Kent Co.

In an effort to maintain harmony within its urban environment, this 20-story mixed-use complex was executed in the Mediterranean Revival style which dominates the architecture of the region. The design uses scale, color and decorative elements to integrate itself into its city setting.

The client's challenge to the architect was to design a sensitive urban building that features all "fronts" and no backs. Both the client and the city also wanted retail exposure on all sides. This was accomplished by having the facility look toward the ocean while facing the approach from the west. The result is fourteen floors of office space totaling 238,000 square feet. The first floor houses restaurants and a branch bank. On the upper floors are tri-level condominiums. The central tower is paired with a tiered, four-story base that meets the street at an appropriate scale. An atrium courtyard, which offers a spectacular intracoastal view, connects the two buildings.

With the intention of creating an illusion that the site contains a series of buildings, the designers carved out the four-story base to expose the atrium. On the northeast corner of the site, a low

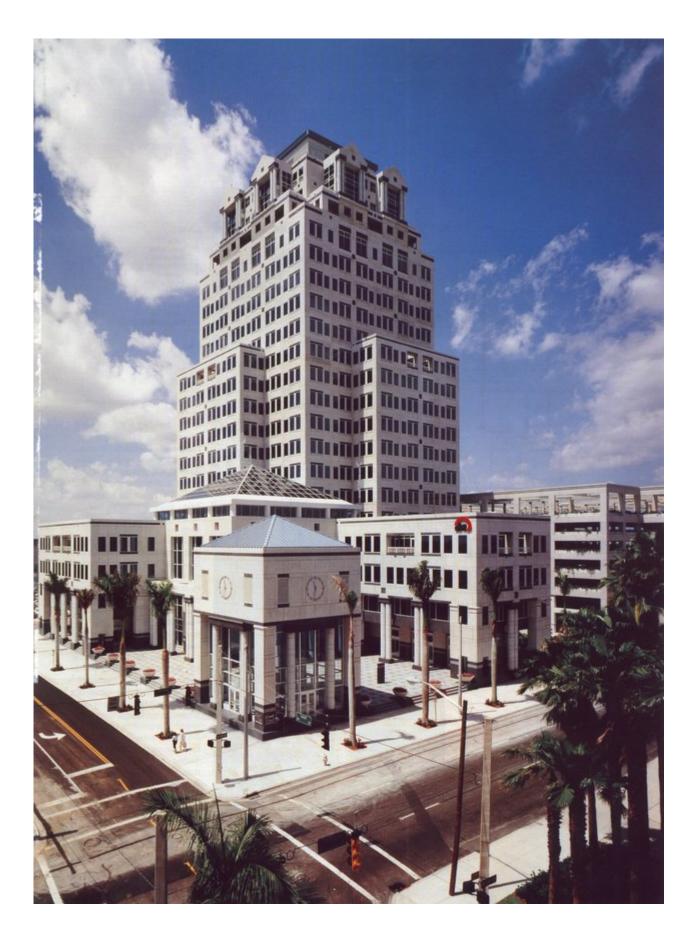




tower containing a cafe acts almost as an entry gate inviting the city to enter.

The main tower occupies a prominent position on a podium raised 24 inches and surrounded by steps. Since the atrium was conceived as a public garden, it remains more outside than in. For example, the balconies that overlook the atrium give the appearance more of outside components than inside balconies. Access to the second floor, where most people will enter offices, is via the escalator in the atrium.

A particular challenge to the architects was creatively mixing a small housing component into the office tower. This was achieved by carving the tower mass to create balconies. The remainder of the space was conPhotos by Hedrick-Blessing





- Bank/Retail Residential Office Lobby
- Atrium Exterior Plaza Cafe
- Womens Room Mens Room Service

- 11 Bridge to Parking

figured into eight small condos, two per side.

The building is classical in its proportions and character. It is composed of concrete columns, beams, joists and slabs. The exterior skin is precast concrete panels with granite medallion inserts. The tower sits on a granite base. The plaza, arcade and atrium flooring consist of concrete and granite pavers. The skylit atrium is finished in precast concrete panels and highlighted by two marble-finished escalators which are separated by marble steps supporting con-crete planters. The interior balconies are faced with white oak veneer and the elevator entrances are framed with white oak columns.

The main mechanical system serving the building is a 900-ton reverse return condenser water system distributed by means of a loop on each floor. This system allows for maximum diversity of tenant requirements on each floor. The atrium has a dedicated air-conditioning system. Smoke control is achieved through the use of exhaust fans mounted on the roof adjacent to the atrium and make-up air dampers at the ground floor perimeter. Juliet Bruno

The author is a Fort Lauderdale writer.



Orlando Magic

Orlando Arena Orlando Florida

Architect: Joint Venture of Lloyd Jones Fillpot Associates, Houston, Texas and Cambridge Seven Associates, Cambridge, Massachusetts.

Associated Architects: Ray Johnson & Associates, Orlando Arena Consultants: C/A Architects, Inc.

Consulting Engineers: Walter P. Moore & Assoc., structural, mechanical, electrical; Boyle Engineering Corp., civil

Geotechnical Engineer: .
Jammal Associates
Landscape Architect:
Sasaki Associates, Inc.
Lighting Design: Jules Fisher
and Paul Marantz, Inc.
Construction Manager:
Gilbane Building Company
Owner: City of Orlando

This fall, the Orlando Magic basketball team, one the NBA's four new franchises, will play in its new home arena. In addition to hosting sports and entertainment programs, the new Orlando Arena will provide a state-of-the-art setting for civic events. The \$90 million project, which includes the arena building, landscape and site development and other infrastructure improvements, is the focal point of the Orlando Centroplex, the city's recreational and cultural hub.

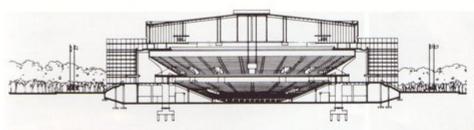
The Arena provides 15,000 seats, equally distributed between upper and lower seating bowls. There are also 26 skyboxes. Outdoor terraces, accessible from the skyboxes, overlook the surrounding development as well as Lake Dot, which is on axis with the ceremonial main entrance to the arena. Allowing for greater expanses of column-free interior



Photos by Mike Houlihan of Hedrick-Blessing.











space and unobstructed views, the arena roof is supported by an architecturally unique X-shaped framing system made of trusses, each weighing 270 tons, and supported by 90-foot high concrete columns located in the building's corners.

The Arena is located in the heart of downtown Orlando. A master plan for Centroplex, the 80-acre development adjacent to the city's central business district, incorporates the new arena with an existing 2,500-seat performing arts facility, convention/exhibit hall and a 300-room hotel. An existing city recreational/tennis center will also be included.

Park-like areas, walkways and fountains enliven the public spaces.

By integrating existing buildings and new structures into a cohesive urban plan, the Centroplex has a strong civic focus representing a strong public investment in Orlando's future.

By holding the roofline back from the edge of the building, the designers were able to create exterior skybox terraces and reduce the overall scale of the arena so it conforms to its site and neighbors. In addition, the height of the structure is minimized by the use of horizontal bands of glass and glass block on the exterior. Nonreflective gray glass on the north and south sides allow the arena seating bowl to be viewed from the outside. Curved walls on the east and west sides are made of glass block which reflects light during the day and glows dramatically at night. Diane Frank

The author is a freelance writer and consultant.





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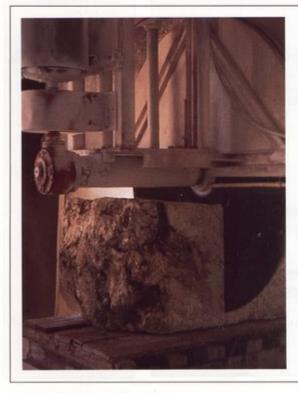
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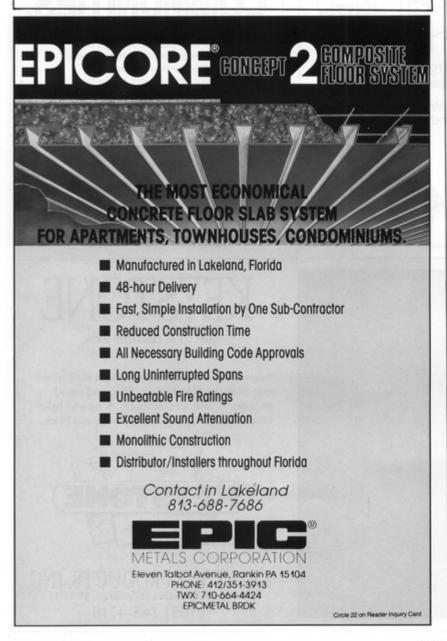
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Finally, We Got To Europe

by Ron Haase, AIA

My wife, Janet, and I were both 56 this year. And we finally got to Europe. All of of our kids are off on their own, at last (or nearly so), I had no teaching assignment for the summer and my wife had saved up a little stash of vacation time, so . . . "Let's Go For It!"

Our own self-styled itinerary took us along the crescent where Europe meets the Mediterranean Sea; from Barcelona in Spain, across the French Riviera, through Northern Italy and then down the Adriatic Sea to Athens and finally, the little white-washed Greek Island of Mykonos.

We shot 30 rolls of slides and print film during our 5 weeks of travel, but at Janet's insistence, I also took along a sketch book and a few favorite pens. Since some of my sketches may conjure up memories for other architect-travelers, I am delighted to share them with Florida Architect's readers.

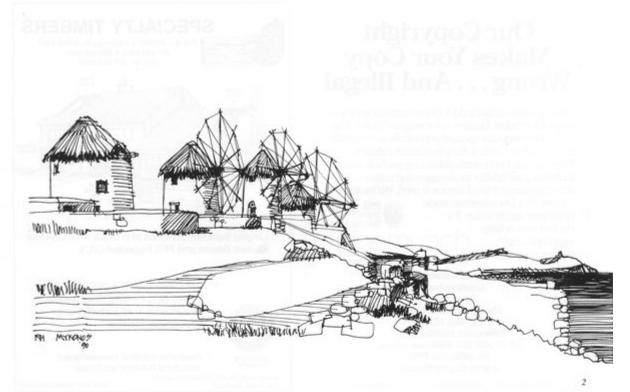
The author is a Professor of Architecture at the University of Florida.

Three Sketches From Mykonos

This rocky, wind-swept island with its modest white-washed structures was a perfect ending to a rich five-week architectural feast. We're definitely going back!

- The narrow streets of Mykonos with the ubiquitous T-shirts for sale.
- Century old windmills facing into the north wind.
- The Paraportiani Church, icing on the "white-cake" architecture of Mykonos.







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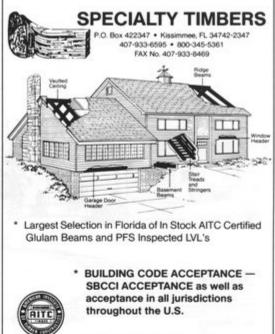
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For more information, call (407) 272-4595. Products from Pineapple Grove Designs can only be purchased through licensed architects, interior designers, landscape architects and builders.



Arden Introduces Rugged Scrub

Arden Architectural Specialties has introduced a new entry mat/ grate "carpet" surface which won't compact with dirt or show traffic patterns. The new carpet surface, called Rugged Scrub, can be specified to update all makes and brands of mats or grates as well as new GrateDesign(R) entry installations.

Rugged Scrub's individual surface tufts are made of resilient chisel-ended polymer strands. By actively scrubbing away dirt from shoes, boots and athletic footwear, Rugged Scrub effectively reduces maintenance costs throughout the entire buildings. Because the individual tufts don't compact with dirt, traffic patterns are not exposed and entry areas retain their new look and replacement costs are effectively lowered.

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Roofscaping Design Concept Introduced

A new design concept in roofline technology has been introduced by FibreCem Corporation. The new design is reflective of the versatility and flexibility of non-asbestos fiber cement roofing slates. The concept was developed to emphasize the variety of roof designs which can be created by the architect at a cost lower than natural slate.

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Construction Management Expands

An AIA task force is developing an Owner Construction Manager agreement for CM-as-Constructor situations. Included on the task force are representatives of the AIA and the Associated General Contractors of America (AGC).

Current editions, dating from 1980 and 1982, are tailored to the construction manager who acts strictly as a professional and representative of the owner. Experience has shown that other types and other documents were needed to address them, such as:

CM as Agent: (as contemplated in the current editions of the CM documents.) The construction manager acts as a professional adviser and agent for the owner.

Architect: (with CM services) The architect provides both design and construction management services and acts as a professional adviser and agent of the owner. The architect with CM services can perform none of the construction work.

CM: (with limnited construction) The construction manager acts as a professional adviser and agent of the owner.

CM as Constructor: The construction manager is the constructor for all or part of the project with the mixed duties of a professional adviser and agent to the owner as well as the construction contractor.

The task force elected not to address the construction manager as a project manager who hires and directs the Architect and the contractors, because it is relatively uncommon and the construction manager as a design/builder providing a single source of responsibility to the owner for services and product, because it is included in AIA design/ build documents.

Revisions on these documents are almost complete; drafts are circulating to the Architect with CM services as CM-as-Constructor documents. Publication of the new CM editions is projected for early 1991.

For more information on the CM editions or other document updates call Scarlett Rhodes at FA/AIA (904) 222-7590.



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VIEWPOINT

Radon: A New Code for Construction and Mitigation

by Ray Johnson, AIA

Radon is a naturally occurring, colorless, odorless and almost chemically inert (inactive) gas, but it is also radioactive. It is found in most all geographic areas of the world. It is constantly being formed from small amounts of uranium in rocks and soil. It breaks down or decays into other elements, which are also radioactive, giving off radiation in minute particles which act like tiny bullets. The particles may cause significant damage to sensitive lung tissue where the radon decay products adhere to the lungs when inhaled. The damage increases the risk for lung cancer which is the primary health hazard related to radon gas.

Radon enters a building through various openings and foundation cracks and can accumulate to hazardous levels if the building is tightly sealed. Accumulation of radon in sufficient quantities presents health risks to persons who are exposed to it for extended periods of time. Radon levels may vary widely from building to building because the uranium content in the soil and rocks beneath them differ dramatically. Radon is generally only a problem when it is confined and where exposure is of long duration. As with most problems, there are several solutions: radon gas can be minimized in new construction and mitigated in existing facilities.

HISTORY

As early as 1597, a physician in eastern Europe noted that a high frequency of fatal lung conditions (which turned out to be lung cancer) occurred among the local miners. Approximately 300 years later scientists discovered the radioactivity of uranium and demonstrated that radon is a radioactive gas. The first medical use of radon occurred in 1914. In the 1940s, scientists began to show a causal link between radon and lung can-

cer. In 1984, high levels of radon were found in homes in Reading, Pennsylvania, and because of this, the U.S. Environmental Protection Agency entered the picture.

Shortly after radium was discovered, its medical applications began for both malignant and non-malignant conditions. Radon was encapsulated in gold seeds and used for medical purposes primarily for the treatment of malignant tumors. In the early days of the study of radiation, X-rays were quite useful in the diagnosis of various medical conditions. However, there were many applications that bordered on the bizarre with its share of quacks and quackery that claimed to cure cancer. Most of the quacks were simply crooks and their products generally harmless. But, in the early 1920s, a toothpaste was marketed with radium that emanated radon; it was supposed to prevent dental plaque.

Spas and mines have also played their roles in using radon as a treatment for various ills. The so-called "health mines" such as the Merry Widow, Earth Angel and the Radon Tunnel in the Rocky Mountains were believed by many to reduce or eliminate pain. The radon level in these mines is considered a health hazard today if exposure is over a long period of time.

While there have been various medical applications for radium and radon, the health hazard related to inhaling high concentrations of radon is believed to be the second major cause of lung cancer, second only to smoking.

HISTORY IN FLORIDA

The State of Florida became the first state in the nation to pass a rule regulating exposure of its citizens to naturally occurring radioactive materials in the environment. The rule establishes standards for exposure of the public to both gamma radiation and to radon decay products in new homes, schools and commercial buildings. Of the two types of radiation, that from radon decay products is considered the more significant hazard. The source of these radiations is mainly the rocks and soil, which in some parts of Florida are richer in radioactive elements than are others. Phosphate deposits which underlie some areas of the state are of particular concern.

Deposits of phosphate rock underlie many areas of Florida. Some of the deposits contain enough uranium and radium to cause hazardous concentrations of radon in air, particularly where such rocks approach or are exposed at the surface due to mining or natural causes.

On February 1, 1990, the Board of Regents delivered a draft of the "Florida Code for Radon Resistant Construction & Mitigation" to the Department of Community Affairs. The DCA will hold workshops throughout the State in order to receive comments on the Code. Under the current schedule, adoption of the Code will take place in June, 1991, with implementation to take effect on July 1, 1992. The Department of Health and Rehabilitative Services has adopted standards for regulating certification of businesses and persons engaged in control of radiation hazards. Specifically, "Beginning January 1, 1989, no person may test for or mitigate the presence of radon in Florida for a fee or other remuneration unless such person has been certified..." The complete rule should be studied before pursuing its application.

SOURCES & MEASUREMENTS Where Does Indoor Radon Come From?

This gas is produced by the radioactive decay of uranium and radium which are common elements found in most geologic formations. Radon, being one of the nobel gasses is characterized by being inert, or chemically inactive, and therefore is a highly mobile radioactive material. This characteristic of chemical inactivity results in radon being able to migrate freely through most soils and other materials, such as floor systems. The radioactive half-life of radon is 3.8 days, therefore the type of soils overlying the radon source greatly affects the amount of radon at the surface.

Radon can diffuse into and be transported by water only to escape into the atmosphere when the water is aerated, such as in showering. This water-borne source of radon has not been found to be of any significance in Florida.

As previously noted, uranium, radium and its decay products are present in low concentrations in soil. However, not all radon escapes from the soil into the air due to the life of the radon gas. The infiltration of high concentrations into structures provides the most prominent source of indoor radon under most circumstances. The flow into structures is generally due to a pressure differential between the soil and the structure.

It is important to note that it is a combination of the radon gas concentration, the leakiness of the structure, the pressure differential, the weather conditions, the mechanical systems, and the total volume of soil gas that can be exhausted into the structure that governs the amount of indoor radon. Thus structures with high radon concentrations can be found not only on high radium soils, but also on soils of below average radium content.

The combination of radium concentration, soil porosity and building characteristics make it difficult to predict the indoor radon concentration that will be found in any given structure. However, areas of increased probability of an indoor radon problem may be identified based on geology, such as the presence of phosphate.

Other sources of radon include water and natural gas, however, as these substances are stored and transmitted over relatively long lines during which the decay process takes place, the danger of any sizeable concentration is minimized. The problem in water appears to exist primarily in deep-drilled wells which will increase indoor radon concentration when the water is extracted and used immediately.

MEASUREMENTS

The U.S. EPA warning in 1986 urged homeowners to take corrective action if radon levels are above 4 picocuries of radioactivity per liter of air. A picocurie is a trillionth of a curie, a measure of radiation.

The standard set forth in the recently adopted rule in the Florida statutes is 0.02 WL. Average or background levels for Florida are around .004 WL. The U.S. Environmental Protection Agency estimates that a lifetime of exposure (70 years) for those who spend 75% of their time in a dwelling with 0.02 WL concentration would produce about 20 lung cancer deaths due to radon per 1,000 people so exposed.

Various measurement devices include a charcoal canister, alpha track detectors and assorted other devices. The most commonly used device is the charcoal canister, which is generally good for a pre-liminary analysis. The alpha truck device is generally used to determine longer term conditions of radon exposure.

HEALTH EFFECTS & HU-MAN EXPOSURE Why is Radon a Problem?

As radon migrates upward through the soil and encounters a barrier, such as a floor system, it becomes trapped and over time builds up to very high concentrations. These levels, upwards of 5,000 to 8,000 pCi/1, become a highly concentrated source, such that when pathways are found through the floor system highly enriched soil gas is emanated in the structure. Once trapped inside, indoor concentrations will increase to, and exceed, levels found to be hazardous to human health. The higher the concentration combined with the length of exposure duration, the higher the risk to the occupants.

Radon, by itself, is really of little concern. The reason radon is viewed to be such a health problem is due to the subsequent radioactive decay products produced from the radon atom. These decay products are commonly referred to as "radon daughters" or "progeny" which are solid particles. Four successive isotopes are created, one after another, in rapid succession until finally, 57 minutes later, the process terminates in the creation of a "stable" isotope of lead (210 Pb). These sequentially-created isotopes are particles, not gasses, and have very short half-lives and all are electrostatically charged. This electrostatic charge causes these particles to bind or "plate-out" to other particles and/or surfaces. Dust, smoke and other airborne materials become contaminated with these radioactive materials and when inhaled, and filtered out in the lungs and bronchial track, bring these radioactive materials into close contact with the very sensitive tissues of the respiratory sys-

Current EPA guidelines suggest that remedial action be considered when radon concentrations inside a house exceed an annual average of 4 picocuries of radon per liter of air or when the radon progeny exceed roughly 0.02 "working levels". By some estimates, 12%

of U.S. houses might have radon concentrations exceeding this guideline.

Radon gas is and always has been present in the environment. Increased risk is due primarily to human activities which have been at work to enhance the radon level. Human exposure to radon results from several sources including surface mines, underground mines, phosphate mines, milling processes, solution mining operations, indoor radon, fossil fuel combustion, natural gas, oil, coal fired plants and airborne radon.

RISK ASSESSMENT

To estimate the risk to members of the general population is subject to heated debate. Differences in those issues results in a wide range of estimates about the numbers of deaths due to lung cancer caused by radon. Most of the debate centers on the predominant contribution of smoking to lung cancer risk. The EPA estimates that approximately 5,000 to 20,000 lung cancer deaths may be attributable to indoor radon exposure.

The State of Florida and the National Standard objective is to keep the radiation exposure to the public from naturally occurring radioactive materials as low as reasonably achievable and reasonably close to "no greater than the ambient outdoor levels."

There is no level at which radon can be completely safe. Scientists are currently quite limited in their ability to really estimate the risks, especially at low exposures. These same scientists apply a linear model to estimate the risk; the model is based upon studies of miners that have fairly well-established lung cancer risk due to exposure to high levels of radon. If you double the exposure, you double the risk, and vice versa.

Putting radon into perspective: Smoking kills 350,000 people each year (U.S. Surgeon General) Traffic accidents account for 50 to 60,000 deaths each year.

This past winter, flu killed "tens of thousands" (news reports)

Radon deaths in the U.S. due to lung cancer is estimated between 8,000 and 40,000 with an average of 21,000 each year. There is a chance of one in 12,000 of dying due to radon as compared with an auto accident of 1 in 5,000.

THE CODE

In summary, the proposed "Florida Code For Radon Resistant Construction and Mitigation...

 applies to the construction and alteration of every building or structure except assembly, hazardous, factory-industrial and storage occupancies.

provides for alternative methods to achieve compliance.

will be administered by local jurisdictions.

 Statewide Policy; cannot be preempted by local authorities.

 requires proof of compliance before a Certificate of Occupancy can be issued.

COMMENTARY...

- * in and of itself the Code is probably OK.
- * as with any new code, there are undoubtedly some loopholes.
- * cost of implementation in a new structure may be relatively minor. * cost of mitigation will be more
- * cost of mitigation will be more costly.
- universal approach in applying it to all areas of Florida is questionable.
- * is radon another issue like "asbestos"?...which is perhaps not the hazard it was thought to be.
- the bureaucracy and its related paperwork may exceed the construction and mitigation costs.

A copy of the draft code may be obtained from:

Continued on next page

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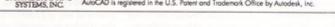
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The Department of Community Affairs

Ralph K. Hook, Section Administrator

Codes and Standards 2740 Centerview Drive Tallahassee, Florida 32399-2100

SUMMARY

Adoption of a Radon Resistant Construction & Mitigation Code in Florida is probably inevitable. However, every architect should stay abreast of the code development. Radon is, and always will be, a part of our lives, so become familiar with the proposed code and offer your suggestions and comments on how it may be approved. As architects, you will have another code that will impact your business.

Please forward your comments to: Ray Johnson & Associates, P.A., 431 East Central Blvd., Suite 230, Orlando, FL 32801. All of your comments, questions, suggestions, etc. will be compiled for presentation to the full FA/AIA Board of Directors and to the Department of Community Affairs Coordinating Council

Ray Johnson is an Architect in Orlando. He was appointed by the FA/AIA to serve on the Florida Coordinating Council on Radon Protection, an advisory board to the Florida Department of Community Affairs.



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FROM THE PUBLISHER

Getting Work in the Public Sector

by George Allen, CAE, Executive Vice President

hen architects from different parts of the state get together these days, an often-asked question is "How is it going in your area?" A common response is, "Well, we are finishing up some work and after that, I just don't know."

Of course, these are generalizations. Some firms are as busy as they've ever been while others are laying people off due to a lack of work.

Ready for another generalization?

If it were not for the public sector construction work, then even the firms which are busy would be laying people off. School and university construction in Florida alone is pumping \$600 million into the construction market place, while state government projects are adding another \$855 million to the pot. The Department of Corrections is involved in building prisons to the tune of nearly 20,000 beds by the end of 1991 to house our burgeon-

ing prison population.

Recent surveys by the AIA indicate that only about 14 percent of the firms in our area receive a substantial portion of their revenues from state and local government clients. This means a fairly large number of firms are probably in the process of scrambling to get into the public market place.

Convincing a school board to let you design a school when you've never designed one before can be a major hurdle for an architectural firm. And, if you convince a public agency to give you a commission, getting up to speed on the rules and regulations specific to that agency can be mind-boggling. Getting paid in a timely manner so that you can make payroll without visiting your banker can be even more traumatic.

If you are attempting to enter the public market and trying to overcome these encumbrances on your own, your chances for success are pretty slim. You desperately need to talk with your colleagues in the profession to find the open doors. Your most immediate source of information is other architects in your AIA Chapter. But, competition being what it is, you may find that to be a blind alley.

Therefore, contacts with knowledgeable persons at the state and national levels would seem to be a good source of information. Here's a list of contacts at the state level and the commissions or committees they currently chair: Henry Alexander, AIA, (305) 552-5200, Public Affairs Commission; Joe Garcia, AIA, (904) 377-6884, Public Affairs Commission: Robert G. Bell. AIA. (813) 530-4605, Governmental Affairs Committee; James H. Anstis, FAIA, (407) 844-7070, Codes and Standards Committee; H. Dean Rowe, FAIA, (813) 221-8771, Professional Regulation Committee; Enrique Woodroffe, AIA, (813) 253-2002. Minute Man Committee.

Key contacts can also be found on the Governmental Affairs Committee which meets about four times a year with representatives of the Department of General Services, the Department of Education and the State University System. The main thrust of this committee has been to discuss in detail the architect/owner contract provisions, the compensation guidelines, insurance requirements, codes and standards, and future work plans which the departments are responsible for developing.

The Governmental Affairs Committee includes many experts on public architecture whom you can contact. They include John Barley, AIA, (904) 384-2240; Rudolph Arsenicos, AIA, (407) 627-6000; Edward Bartz, FAIA, (813) 281-0533; and William Blizzard, AIA, (813) 229-1730. There are other experts and resources available. If you have a question or need a contact, give us a call at the headquarters.

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