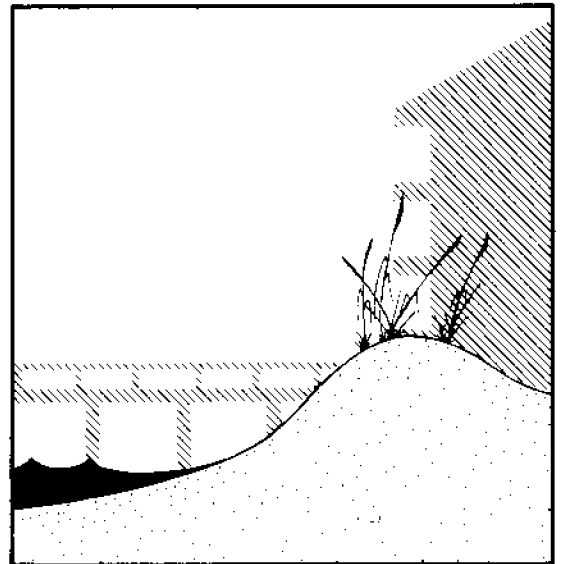


The First Coastal Growth Industries **FORUM REPORT**

Coastal Construction:
Building In A Hazardous Place



September 1987

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**REPORT ON THE FIRST
COASTAL GROWTH INDUSTRIES
FORUM**

**COASTAL CONSTRUCTION:
BUILDING IN A HAZARDOUS PLACE**

Sheraton Charleston Hotel
June 10-11, 1987

Honorary Chairman
William F. Cochrane,
Executive Vice-President
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INTRODUCTION

This report summarizes the discussion and conclusions of the First Coastal Growth Industries FORUM held at the Sheraton Charleston Hotel on June 10 and 11, 1987. The subject of the FORUM was "Coastal Construction: Building in a Hazardous Place" and covered four major areas of concern:

1. Design/Construction (Engineering)*
2. Construction Liability
3. Regulation/Code Enforcement
4. Insurance

Each of the above topics was the focus of presentations made on the first day of the FORUM. This report summarizes the comments made on the following day during individual break-out sessions. Participants in each session were asked to develop specific action plans to address the problems discussed in their respective groups. Those recommendations are listed at the end of each session summary.

This document is being sent to each of the 125 FORUM registrants, as well as appropriate state agencies and associations connected with coastal construction. We hope you find this report interesting and informative. Any comments or inquiries should be addressed to:

Margaret A. Davidson
South Carolina Sea Grant Consortium
287 Meeting Street
Charleston, S.C. 29401
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The FORUM report would not have been possible without the efforts of the panel moderators, writer/observers and experts. It should also be noted that the FORUM itself would not have been developed without the strong support and guidance of Bill Cochrane, Dr. John Mark Dean, the Planning Committee and Ruth Mathias.

* Design/Construction was initially called Engineering, but was changed to reflect the roles of architects and other building professionals.

EXECUTIVE SUMMARY

Most coastal construction in South Carolina is a disaster waiting to happen. The problems underlying state building practices and standards are on such a large scale that damages resulting from even a moderate storm could easily outstrip any insurance agency or pool's resources. The mild storm of January 1, 1987, which caused \$20 million in property damage, is but a small example of what lies ahead in potential construction losses. Unless industry and government work together now to avert disaster, the prospects for long-term prosperity that coastal South Carolina has enjoyed to date may be severely compromised. It was in recognition of this situation that the Coastal Growth Industries FORUM was established.

This year the FORUM focused on the importance of the synergy that must exist between all elements of the coastal construction industry if proper standards are to be effective. Without this synergy none of the following recommendations will help the situation.

1. In many cases, the building codes and manufacturers' information that designers use to create plans for coastal structures are not appropriate for coastal construction. The Standard Building Code used on the South Carolina coast needs to reflect the special conditions which exist on the coast. Inadequacies in the code and inaccurate or misleading manufacturer information have led to structures with inadequate hurricane resistance.
2. In addition to the lack of effective codes, there is a shortage of professionally trained and competent building officials. There is no test or certification for building officials, and many officials have no background in engineering or construction. Starting salaries are in the \$12-15,000 range, offering the building official little incentive to improve his qualifications, even if there were training programs available.
3. Both the design/construction and regulation/code enforcement sessions addressed the need for higher professional standards and ethics for the industry. It was suggested that peer groups of professional designers, contractors and code officials in each county review plans for every structure to be built on the coast. Building officials should be encouraged to rely on peer group expertise to determine whether a set of plans is professionally sound. Peer review would also force designers of inferior quality structures to improve their work if they are to continue doing business in South Carolina.
4. To date there have been few, if any, lawsuits regarding the failure of coastal structures, but it is only a question of when, not if. When such suits are filed, contractors and designers may be liable; the financial cost of liability may put them out of business. Liability may also extend to the municipalities and state agencies that have permitted the building of substandard structures, regardless of "sovereign immunity". Liability issues have remained unresolved in the absence of a major coastal storm; and, unfortunately, they may only be settled in court, where the deepest pocket will pay.

5. Several of the discussions suggested that the banking and insurance industries are ideally situated to bring about positive change quickly and effectively. In the past, these industries have allowed the construction of substandard buildings, largely because they did not understand the disasters they were funding. In fact, some insurance firms offer lower premiums for buildings with a higher probability of sustaining damage. Banks and insurance companies could clear up several problems associated with poor coastal construction by requiring proper design and construction and by communicating more readily with building officials.

In summary, all members of coastal growth industries must work together to upgrade building practices and standards. State and local governments are strong allies that must become part of the team. Without a concerted effort to reduce the risk of construction-related damages along the coast, the effects of a storm or hurricane will be felt for years by the citizens, industry and government of South Carolina. We cannot wait for such a disaster to occur; we must act now.

DESIGN/CONSTRUCTION (ENGINEERING)

PANEL MEMBERS

Moderator: Dr. Charles Lindbergh, Head
Civil Engineering Department
The Citadel

Experts: Mr. Allen Groover
Engineer
FEMA--Atlanta Regional Office

Mr. Spencer M. Rogers, Jr.
Coastal Engineer
UNC Sea Grant College Program

Mr. Jeffrey Rosenblum, President-Elect
S.C. Chapter AIA
Rosenblum and Associates

Dr. Peter Sparks
Department of Civil Engineering
Clemson University

Writer /Observer:
Mr. Andrew Mount
Research Assistant
S.C. Sea Grant Consortium

QUESTIONS AND SUMMARIES OF DISCUSSIONS

I. Who is responsible for overall project management in the building of coastal structures?

1. Division of responsibility(ies).
2. Interaction of Contractor / Building Official / Designer.
3. Interaction of Buyer / Contractor / Designer.

DISCUSSION

The responsibility is not well defined. The result of this ambiguity is that quality control has become a major problem for all construction professionals. The practice of "rubber stamping" plans which may or may not meet code specifications has prompted code enforcement officials to ask for assistance in evaluating plans and to demand tightened controls for the design and engineering communities.

Some professionally designed public structures which are exempt from building code requirements, such as schools, are not capable of withstanding the high pressure loads exerted on roofs during a hurricane event and have failed in storms in hurricane-prone areas (e.g., the Gulf coast of the U.S.). Even moderate seismic forces can have the same effect. These findings should concern South Carolinians, as these structures serve, among other functions, as storm evacuation centers along our coast.

Inadequate quality control and questionable ethical practices in both design and engineering professions in South Carolina have created some reservations about, and lack of confidence in, the building community at large.

II. Are appropriate building materials being used with proper applications for coastal construction?

DISCUSSION

No, many materials are not adequate to withstand the harsh nature of the coastal marine environment. For example, fasteners are not galvanized sufficiently to withstand corrosion, and many other materials used have not been validated or tested under hurricane force conditions of wind and water. There are no adequate means of screening candidate materials prior to use in coastal construction.

III. Are present-day building material and stress data accurate and applied correctly on the coast?

DISCUSSION

No, much of the information provided about building materials by the manufacturer is misleading and/or is not used correctly by some design professionals, contractors and builders. The Standard Building Code itself contains several inaccurate and inconsistent requirements with regard to material usage.

IV. Is the permit and inspection process adequate to insure safe construction on the coast?

DISCUSSION

Yes, the process is adequate, but its implementation and operation are not. Safe construction on the coast depends upon professionals becoming better educated about coastal hazards, the use of appropriate designs and proper specifications for materials. The engineering and design community should embrace a higher standard of professional ethics and conduct in the state. Code enforcement officials should be more thoroughly trained and fully supported by the industry in their efforts to monitor construction and enforce the building code. In addition, these officials should have professional advice available to them on a regular basis to help insure that structures are properly designed and that appropriate materials are used in coastal construction.

V. Is the present education system for designers and contractors adequate for initial and continuing professional development as regards coastal construction?

DISCUSSION

No, curricula in both civil engineering and architectural schools should be developed for the special design considerations of coastal construction. Seminars should be held on a regular basis to provide continuing professional development for all individuals engaged in coastal construction. Professionals need to discuss problems and to provide feedback to schools which meet professional development needs.

ACTION PLANS

1. Mandatory building codes and their effective administration should be established.
2. Engineers and architects should restore confidence in their professions by devising mutually agreed upon professional standards that will deter poor coastal construction design and discourage clients who seek professionals to "rubber stamp" building plans. A peer review group of building professionals should be appointed in each coastal county to review all building plans in the coastal zone and render assistance to code enforcement officials.
3. Contractors and inspectors should certify compliance with design before a certificate of occupancy is issued.
4. Professional schools should develop curricula that take into account the special design considerations of coastal construction. Seminars to aid in professional development of individuals engaged in coastal construction should be held on a regular basis.
5. Building professionals in the coastal zone area should meet with each other regularly to discuss problems and devise solutions. The results of these meetings should be communicated to the state's professional schools.
6. Structural engineers and architects should work together to develop a comprehensive data base of acceptable building materials for the coast. Personal computer software should be developed and made available to all facets of the building community, including code enforcement officials, who would perform conversion of performance code testing results into prescriptive code for all materials used in coastal construction.
7. Engineers, architects, contractors and developers should work more effectively as a team on construction projects. This cooperation could alleviate some of the obstacles to good construction--i.e., the absence of engineers on site during construction; the tendency of developers to interpose themselves, for their own benefit, between engineers, architects and contractors during the construction period; and the practice among developers of selecting materials on the basis of economic rather than technical merit.

CONSTRUCTION LIABILITY

PANEL MEMBERS

- Moderator: Dr. John E. Montgomery
Associate Dean of Academic Affairs
U.S.C. Law School
- Experts: Mr. Bill Dreyfoos, Attorney
Dallis and Dreyfoos
- Dr. Richard Hamann
Center for Government Responsibility
University of Florida
- Writer / Observer:
Mr. M. "Rick" DeVoe
Associate Director
S.C. Sea Grant Consortium

QUESTIONS AND SUMMARIES OF DISCUSSIONS

- I. How serious is the coastal construction liability issue in South Carolina?
1. Is it time to panic?
 2. Why are we discussing it now at the FORUM?

DISCUSSION

Most of the discussion on these questions focused on what we do and do not know about construction liability. We do not know what "the rules" are yet, although a major event (e.g., hurricane) could ultimately sort out the liability issue as the dust settles. Currently, all players are subject to suit, although each may or may not face different liabilities (e.g., compensation, injury, damage, etc.). The group felt that the courts would be the ultimate arbitrators of this issue. Discussion moved on to disclosure as a way to reduce liability. Right now, buyers' awareness of the threats/risks associated with living in coastal structures is extremely low. Questions were raised regarding the effects of disclosure policies on the market for coastal dwellings, etc. The bottom line is that buyers will buy regardless of their education about the issues. Non-storm liability is already being litigated in the courts due to engineering, building and homeowner issues (faults, errors, etc.) and is causing major problems. One idea, a proposition only, was to institute a "release from claims" procedure which could protect parties from suit in the future. However, if new faults occurred (not covered in the release), litigation would be an available tool for restitution.

II. What is the exposure to liability for each element of the coastal construction industry?

Code Official	Contractor
Realtor	Developer
Banker	Homeowner Association
Insurance Broker	Municipality and County

1. How does liability change for wind, water, seismic hazards?
2. How does it change for degree of hazard and degrees of preventive action (i.e., foreseeability)?

DISCUSSION

It was agreed that, given the current situation (e.g., limited court history and legal precedent), all players (code official, realtor, banker, insurance broker, contractor, developer, homeowner association, municipality and county) are liable to one degree or another. Those who are more liable include developers and contractors (especially those not incorporated) and architects and engineers (who cannot usually hide under a corporate banner). The groups with minimal liability risk are bankers and realtors, if they are not directly involved in the property interest. However, if the dwelling is misrepresented during a sale (e.g., said to be made of concrete when in fact it's constructed of pressboard), a fraud suit is a real possibility. The bottom line is: the one who has the most assets is most liable. One should remember that the possibility of inter-defendant suits (e.g., engineer vs. contractor) is real.

An important point raised in the discussion dealt with awareness. The more one is aware of a risk (e.g., from past experience with a major event), the more accountable that individual professional is. However, the greater the natural hazard (in other words, a hazard that exceeds tolerance levels), the less liable builders and others will be, because all structures will be damaged. Liability will exist for legal damages over and above the expected damage. A question is then raised: Because severe hazards occur less frequently than mild ones, is it reasonable to design for very severe events? Where is the line drawn? How damaging an event does the professional have to plan and build for? Of course, minimum building codes may not provide enough protection. How is this determined? The question remains open.

III. Where and under what circumstances may liability be limited?

DISCUSSION

An approach discussed up front was the passage of legislation to limit liability over and above the limits of accepted code conditions. For example, a building must withstand 120 mile/hour winds. In situations in which winds exceed 120 miles/hour and damages occur, the professionals would be protected by this legislation.

Who does the limiting? How can it be accomplished? A number of approaches were discussed: encouraging public education and awareness, public policy-making (e.g. setback lines), disclosure (with liability limits). It was noted that to try to limit liability through paper (disclaimers, disclosures) probably would not be sufficient; legislation would be the only "sure" way.

Discussion then focused on the "Federal Undeveloped Lands Act" (Interstate Land Sales) under the aegis of H.U.D. A developer must answer questions regarding subdivision lots (Minimum=50 lots). This disclosure is only used inland at this time. This is a disclosure mechanism to protect potential home buyers. The developer is also required to post bond for infrastructure (water, sewer, etc.). The group felt that this mechanism could serve as a model for buildings (especially in these coastal areas) as well, because it appears to work and is a feasible alternative for coastal South Carolina. It was mentioned that Florida has a reporting requirement similar to the above; it is a disclosure law that applies to properties 1,500 feet or closer to the water's edge.

What about total prohibitions? Setback lines fall under this category, and arguments based on public safety and protection would hold up in court. The difficulty here is that setback line limits are determined through understanding of the geology and sedimentology of an area (=erosion/accretion rates). It is most difficult to predict what areas will change when, and at what rate. Additional point: Even with prohibition, people are going to want public assistance to renourish the beach, protect their property, etc. This presents a dilemma for policy makers and the courts.

IV. What should be done to educate the consumer, both commercial and residential?

1. Disclaimers vs. disclosure.
2. Are setback lines or retreating from the beach viable answers?

DISCUSSION

Disclaimers--the refusal to accept responsibility for "A,B,C and D," for example--provide a "false" sense of security to the party offering them, because legal cases can still be brought forward. Disclosures informing the consumer of the risks must be implemented at the state level because local officials/governments cannot economically do it ("shoot themselves in the foot"). Disclosures do place more of the awareness burden on the buyer. Disclaimers are generally not much help to buyers, especially when these provisions are "buried" in contracts. However, if the professional suggests to a buyer that certain things should be done and the buyer says "no thanks," the industry professional should be able to disclaim responsibility and be protected.

Ed. Note: While the concept of retreating from the beach was not discussed directly at the FORUM, the following quote from the Report of the South Carolina Blue Ribbon Committee on Beachfront Management (March 1987, S.C. Coastal Council), addresses one approach to this application.

"The Blue Ribbon Committee therefore concludes that a retreat from the beaches over a thirty-year transition period, in combination with selective beach nourishment, is the only practical approach to our coastal erosion problems. A retreat implemented over 30 years will allow owners of structures sited too close to the beach to realize the economic life of their structures and adjust their plans over a reasonable 30-year period. This retreat must be based on sound state and local comprehensive beach management plans, which when implemented, will result in the preservation, protection, restoration and enhancement of our beach/dune system for the enjoyment of this and future generations."

ACTION PLANS

- 1. Review South Carolina case law and statutes regarding construction liability to determine the current status of the issue. This would clarify the relative liabilities of the key players.**
- 2. Prohibitions (i.e., setback lines) should be enacted along the immediate coast to reduce the problems of risk and liability.**
- 3. Building codes along the coast should be strengthened and firmly enforced. Minimal codes will not work, nor will voluntary adoption of codes at the local level.**
- 4. A disclosure program (awareness, education, legally binding) should be developed and implemented in South Carolina, preferably at the state level (through legislation).**
- 5. The feasibility of licensing contractors, builders, electricians, etc. should be explored. Along with a fee (which is the only requirement for doing business in South Carolina now), a competency test should also be required.**

REGULATION/CODE ENFORCEMENT

PANEL MEMBERS

Moderator: Dr. Samuel M. Hines, Jr.
Vice-president for Departmental Affairs
College of Charleston

Experts: Mr. James Cahle, President
American Society of Civil Engineers
Piedmont Group

Mr. Ted Padgett
Structural Engineer
T.G. Padgett and Associates

Mr. Douglas Smits
Chief Building Official
City of Charleston

Dr. Jan Temple
S.C. Budget and Control Board
Research and Training

Mr. John Townsend
National Weather Service
Charleston, S.C.

Mr. Gary Wiggins, Director
Building Code Council of S.C.

Writer / Observer:

Mr. Kent Prause
Research Assistant
S.C. Sea Grant Consortium

QUESTIONS AND SUMMARIES OF DISCUSSIONS

- I. What are the problems with the present coastal construction codes? Do they protect against wind, water and seismic damage?**
1. Is weather compensated for in codes?
 2. Is there inspection of erosion control structures?

DISCUSSION

General group consensus was that present coastal construction codes do not adequately protect against weather-related and seismic damage. Of particular concern were such factors as variation of wind speeds as a function of elevation, officially reported wind speeds versus actual wind speed, and the dynamic relationship between density and placement of structures and wind speed as it relates to internal and external pressure. Because each of these factors affects both manufacturers' quality assurance specifications for building materials and current building

practices, a thorough knowledge of these relationships is necessary to prevent erroneous material specifications and faulty construction practices. The panel and audience agreed that new additions to the code should be developed based upon available expertise to deal with these specific coastal needs. Concern was also expressed that municipalities seldom use existing appendices to the code as they should; more uniform application is necessary.

II. What are the problems associated with not having a statewide building code on the coast?

1. Uniform adoption, enforcement.

DISCUSSION

The "home rule" concept of local government assigns building code responsibility to local jurisdictions which have adopted building codes, leaving from 20-25% of the state population without them. As code requirements vary, the quality of construction varies accordingly. Often others involved in the development process--consumers, lenders and insurers--may be unaware of these discrepancies. Disputes resulting from these discrepancies are sorted through the litigation process. A statewide code would set minimum standards of acceptable materials and construction practices in all jurisdictions and help alleviate problems of responsibility and liability. This measure could also help remove pressure from developers on architects and structural engineers to produce least-cost designs and allow them to produce better quality designs. However, codes are only as good as the enforcement mechanism which backs them up (codes were viewed as 10% of the problem, while enforcement was 90%). Enhanced enforcement would entail more stringent certification requirements for inspectors and increased staff in some areas. The increased costs incurred would have to be borne by local jurisdictions, but user fees for inspection or privatization of inspection could help offset these costs.

III. What are the factors that limit building officials from insuring better coastal construction standards?

1. Certification of officials.
2. Continuing education for officials.
3. Back-up expertise for adjudicating on coastal construction.
4. Are commercial (vs. municipal) inspectors feasible?
5. Poor status in the community.
6. No historical record of inspections or standard inspection forms.
7. Potential liability for decision.

DISCUSSION

All of the seven factors listed were identified as having some limiting effect on the building officials, though the poor status and potential liability concerns appeared to be the least important. Attention was focused on the need for better training, higher qualifications, continuing education for building officials, and better communication and information for property owners and developers about the importance of quality structural design in a hazardous environment. There was general agreement that the concept of commercial inspectors is feasible, desirable and should not be perceived as in direct "competition" with building inspectors.

IV. Are the roles of designer/builder/inspector clearly defined?

1. Who signs for what on a project?

DISCUSSION

The roles of designer/builder/inspector are not clearly defined in actual practice. When multiple, lenient or non-existent code standards are employed, the roles of the participants are blurred. Liability is then determined through the litigation process. Each role is clearly important, but there is a need to exercise greater quality control within and between the roles. Professional standards should prevail among the designers (architects/engineers) and codes/laws should prevail among the builders and inspectors.

ACTION PLANS

1. Initiate a statewide building code to set minimum acceptable standards. Provide for special amendments to the building code so that coastal areas can maintain some flexibility for communities.
2. It was suggested that some kind of outside advisory group could help address specific problems. This could take the form of a peer review group for designers and builders, or a formal governmental advisory board (not authority) at the state or county level. By including groups of construction, financial and design officials in the decision-making process, advisory boards can provide more comprehensive information to aid in code regulation revision, at either the state or county level.
3. Implement statewide building official certification/licensing standards. Include provisions for continuing education for officials to help them maintain certification. Update and standardize inspection reporting forms. Include more objective and uniform criteria.
5. Involve the private financial community to a greater degree in the decision-making process so that they may use economic leverage to encourage better quality construction and code enforcement. Workshops for the financial community (similar to the FORUM) should be conducted, involving many of the professional groups attending the FORUM and materials such as the film depicting the situation on the Texas coast.
6. Explore the viability of having qualified individuals from the private sector work as inspectors, provided that they report to public officials. This would enhance accountability as well as minimize fiscal constraints on jurisdictions with limited resources by passing the cost on to the consumer rather than to the local taxpayers. (A clause in the proposed statewide building code legislation allows for private inspections by certified personnel.)
7. A public education campaign for consumers (homeowners, developers) should be conducted to advise them of the importance of design considerations in building in the coastal zone.

INSURANCE

PANEL MEMBERS

Moderator: Dr. Howard F. Rudd, Jr., Dean
School of Business and Economics
College of Charleston

Experts: Mr. George Bell, President
Bultman/Bell Associates, Inc.

Mr. Paul M. Joyce, Manager
Loss Control/Engineering
U.S. Insurance Group

Mr. William Thomas, President
Carswell of Carolina

Mr. Howard Winslow, Director
Analysis/Examinations and Investigators
S.C. Department of Insurance

Writer/Observer:
Mr. Douglas Baughman
Project Manager
S.C. Sea Grant Consortium

QUESTIONS AND SUMMARIES OF GROUP DISCUSSIONS

- I. How does the insurance industry set its rates for coastal construction?
1. Slave to stock market.
 2. Pooling: what does "coastal" mean?
 3. Could not cover major coastal storm.

DISCUSSION

Insurance rates depend on a number of factors but, in general, the rates are set on actuarial rates through the Insurance Service Office (ISO). Consumer demands also affect the rates, which may vary from 50-60%, depending on the situation.

Some larger insurance companies which invest in the stock market have to increase their rates when the market hardens to insure a set return for their investors. However, when these companies are doing well in the market, they rarely reduce their rates to share their good fortune with the consumer.

Pooling, the combining of resources by several insurance carriers, is done in South Carolina to help cover losses from high winds associated with coastal storms. The "Wind Pool" is available for most property owners along the S.C. coast.

FORUM experts and participants agree that the current funds available through the Wind Pool and all other insurance sources could not cover the losses from a major hurricane along the S.C. coast. Larger insurance companies realize this problem and are slowly writing themselves out of this area of coverage. As a result, smaller companies which are less able to handle a major loss will bear the primary coverage burden from a severe storm and will, in all probability, fail to meet the bulk of claim payments, if they are able to pay at all.

ADDITIONAL CONCERNS:

- Unstable companies may create havoc for established carriers by setting unreasonably low rates just to break into the market.
- A clearer definition of beach vs. coastal property is needed. The risk associated with property located directly on the beach is quite different from that for a house situated half a mile inland.
- Most rates don't really reflect the actual risks associated with a major coastal storm.
- Although rates are subsidized by the Wind Pool, the pool is not adequate to cover a major coastal storm.

II. Does the insurance industry have enough contact with the coastal construction industry to be proactive?

1. Lack of communication between building code officials and insurance inspectors.
2. Lack of design expertise in rate setting.

DISCUSSION

Currently, there is little or no contact between insurance carriers and the building community. Insurers assume that architects, developers and coastal contractors are designing and building structures that will withstand stresses associated with most coastal storm events.

Insurance inspectors and agents are relying on S.C. Building Code inspectors to insure that coastal buildings comply with the building codes; they are dealing on faith. Insurance companies accept the codes as minimum standards and rarely go in after a structure is completed for the sole purpose of inspecting the final product for sound construction. Contractors are relying on the subcontractors who rely on the individual workers to be sure that structures comply with the code. The final burden falls on the local building inspectors who are generally overloaded with work, underpaid and often not technically trained.

Experts suggested that insurance companies should have trained agents who are able to distinguish between good and bad construction. Such expertise would help to set more appropriate rates. In addition, local agents need to educate carriers' head offices in terms of the actual risk associated with a coastal area. This case-by-case approach would also permit agents to set the most appropriate rates for a geographic area rather than have the home office dictate rates on a statewide, regional or even national (coastal) basis.

III. How does the consumer, both commercial and private, find the best insurance company?

1. Licensed vs. non-licensed.
2. Over-committed companies.

DISCUSSION

Consumers are faced with a difficult task when choosing an insurance carrier and, unfortunately, most people base their decision on the lowest available rates. Unstable, fly-by-night companies are known to underbid established carriers for a few years and then go out of business. Before making a final decision, consumers should check with the State Insurance Office in Columbia, which maintains a list of licensed insurance companies. These companies are required to file their rates with the state office before writing any policies.

Consumers should always buy insurance from licensed insurance carriers. Non-licensed companies are not required to file their rates with the state office and, as a result, rates may fluctuate tremendously, often within a 90-day period. The State Insurance Office also maintains a list of financially troubled insurance companies which are required to file quarterly financial reports. Of the 657 registered companies in S.C., 114 are currently on this "weak" status list.

Few companies write hazard policies for coastal buildings in order to limit their exposure to loss. The level of commitment (or over-commitment) is dependent on the financial sophistication of the company. Further analysis is required to determine the extent of most carriers' commitments in the coastal zone and whether or not they are adequate enough to cover a major storm.

VI. Would establishing setback lines or retreating from the beach lower insurance rates?

DISCUSSION

Experts and participants agreed that setbacks for coastal dwellings would certainly reduce insurance rates. However, the rates would still depend on several factors: topography, vegetation, and density. Kiawah Island provides the best example of the combination of beach setback and use of natural vegetation for protection. Low-profile dwellings set within natural vegetation have a much lower risk of damage than the typical tall, high-density buildings found in areas like Myrtle Beach.

It was also suggested that financial institutions should be informed about the increased risk of building along the coast without enforcing adequate setbacks. If banks and other lending groups were aware of the potential problems, they might be more likely to influence developers and contractors when they request funds for coastal developments. Banks should become proactive participants in better design and regulation of coastal codes.

ACTION PLANS

1. Increase public awareness. Most people have very short memories, and because it has been a number of years since the last major hurricane in S.C., people are no longer as concerned about coastal hazards as they might be. They need to realize the risks and potential costs associated with living in the coastal area.

Suggestions:

- Involve media in public awareness.
- Develop a speakers' bureau to participate in other public forums, such as service organizations (Kiwanis, Rotary Clubs, etc.).
- Make financial institutions more aware of risks.

2. Strengthen building codes through cooperative action by all involved parties. This will require insurance industry initiative.

3. Continue to have forums that encourage additional information-sharing and cooperation among those parties who, collectively, can address the problems of coastal construction and their solutions.

4. Government and insurance companies need to work more closely with inspectors, contractors, architects and developers to effect better construction and insurance coverage.

AGENDA

Coastal Construction: Building in a Hazardous Place

June 10-11, 1987

Sheraton Charleston Hotel
Charleston, S.C.

Wednesday, June 10

10am - 1pm
1:00

REGISTRATION

Welcome - William F. Cochrane - Honorary Chairman

How the FORUM works - Mr. Tom Sweeny - Program Leader Clemson/
Sea Grant Marine Extension Program

1:15 - 2:00

Wind Damage to Coastal Construction - Dr. Peter R. Sparks, Dept. of Civil
Engineering - Clemson University

2:00 - 2:30

Water Damage to Coastal Construction - Mr. Spencer M. Rogers, Senior
Engineer, UNC Sea Grant College Program

2:30 - 2:45

Seismic Damage to Coastal Construction - Mr. Robert B. Whorton, Senior
Engineer, S.C. Electric & Gas Company

2:45 - 3:00

BREAK

3:00 - 3:45

Liability for Failures in Coastal Construction - Dr. Richard Hamann, Center
for Governmental Responsibility, University of Florida, Gainesville

3:45 - 4:00

Insurance Overview - Mr. George Bell, President, Bultman/Bell, Assoc.,
Inc.

4:00 - 4:15

Regulation/Code Enforcement - Mr. Gary Wiggins, Director, S.C. Building
Code Council

4:15 - 4:30

Some Positive Action on Coastal Construction - Dr. Charles Lindbergh,
Multi-hazards Engineering Research Center, The Citadel

4:30 - 5:00

Panel of Speakers - Question & Answers

5:00

ADJOURN

6:00

SOCIAL HOUR

7:00

COASTAL GROWTH INDUSTRIES BANQUET

GUEST SPEAKER: Mr. J. Mac Holladay, Director, S.C. State Develop-
ment Board

Thursday, June 11

8:00am

Coffee & Doughnuts

8:30

Briefing on In-depth Discussions and Room Assignments

8:45 - 10:30

Conference Breaks into 4 Groups for Detailed Discussions

DESIGN/CONSTRUCTION (ENGINEERING) - Where are
the problems with present construction systems?

CONSTRUCTION LIABILITY - How are individual busi-
nesses and agencies liable for construction failures?

REGULATION /CODE ENFORCEMENT - Are the codes
and the inspection program capable of preventing a con-
struction disaster?

INSURANCE - Is the insurance industry giving proper
coverage with correct standards?

10:30 - 11:00

BREAK - Compare Notes

11:00 - 12:00

Conference re-groups in main room. Each section reports on results of
its discussions. Write-ups of recommendations will be available after the
conference.

NOON

CONFERENCE ADJOURNS

1987 Coastal Growth Industries FORUM Planning Committee

W.F.Cochrane, Chairman	Executive Vice-President, Dataw Management Corporation
Fritz Aichele	Cartographer, S.C. Coastal Council
Dr. Richard Beck	Mayor, Folly Beach
James E. Boatwright, Jr	S.C. Association of Realtors
George Bell	President, Bultman/Bell Associates
James Brannock	Homebuilders Association of S.C.
George Cook	President, George Cook Construction
Dr. J. M. Dean	Baruch Institute, University of South Carolina
William Dreyfoss	Lawyer, Dallis & Dreyfoos
James Harrelson	President, S.C. Coastal Codes Enforcement Association
Bill Hendrix	Vice-President of Marketing, Ruscon Corporation
Frank Hodge	Chief of Building & Inspections, Hilton Head Island, S.C.
Paul W. Hund, Jr.	President, Coward Hund Construction
A.L. Hutchinson, Jr	Executive Vice President, First Federal of Charleston
Chris Jones	Consultant, Coastal Science and Engineering
Phillip Leroy	Vice President, Dataw Management Corporation
Billy McKinnon	State Coordinator, National Flood Insurance Program
Edward Modzelewski	Consultant, Applied Technology and Management, Florida
Ted Padgett	Structural Engineer, Ted Padgett and Associates, Inc.
Leon Patterson	President, S.C. Bankers Association
Spencer Rogers	Coastal Engineer, UNC Sea Grant College Program
Carl Simmons	Director, Building Services, Charleston County
Douglas Smits	Chief Building Official, Charleston
Robert Soulby	Vice President, The Haskell Company, Florida
Dr. Peter Sparks	Dept. of Civil Engineering, Clemson University
John T. Watkins	Director, S.C. Residential Home Builders Commission
Gary Wiggins	Director, S.C. Building Codes Council
Hubert E. Yarborough, III	Attorney, S.C. Blue Ribbon Committee on Beachfront Management

AGENCIES AND ASSOCIATIONS WORKING WITH THE COASTAL GROWTH INDUSTRIES FORUM

AMERICAN CONCRETE INSTITUTE
AMERICAN INSTITUTE OF ARCHITECTS
AMERICAN RESORT AND RESIDENTIAL DEVELOPMENT ASSOCIATION
AMERICAN SOCIETY OF CIVIL ENGINEERS
AMERICAN SOCIETY OF LANDSCAPE ARTISTS
AMERICAN SUBCONTRACTORS ASSOCIATION OF THE CAROLINAS
ASSOCIATION OF GENERAL CONTRACTORS OF AMERICA
BLUE RIBBON COMMITTEE ON BEACH FRONT MANAGEMENT
BUILDING OFFICIALS ASSOCIATION OF S.C.
CAROLINAS ASSOCIATION OF PROFESSIONAL INSURANCE AGENTS
CHARLESTON TRIDENT BOARD OF REALTORS
COASTAL CODE ENFORCEMENT ASSOCIATION
CONSTRUCTION SPECIFICATIONS INSTITUTE
CONTRACTORS LICENSING BOARD
COUNCIL ON VOCATIONAL AND TECHNICAL EDUCATION
EMERGENCY PREPAREDNESS DIVISION/ADJUTANT GENERAL
INDEPENDENT INSURANCE AGENTS OF SOUTH CAROLINA
MUNICIPAL ASSOCIATION OF SOUTH CAROLINA
S.C. ASSOCIATION OF CONSERVATION DISTRICTS
S.C. ASSOCIATION OF REALTORS
S.C. BANKERS ASSOCIATION
S.C. BAR ASSOCIATION
S.C. BUILDING/INSPECTOR/OFFICIALS ADVISORY COMMITTEE
S.C. COASTAL COUNCIL
S.C. COASTAL ENGINEERING TECHNOLOGY TRANSFER & RESEARCH CENTER
S.C. COMMISSION OF RESIDENTIAL HOMEBUILDERS
S.C. DEPARTMENT OF INSURANCE
S.C. ECONOMIC DEVELOPERS ASSOCIATION
S.C. HOMEBUILDERS ASSOCIATION
S.C. MANUFACTURED HOUSING BOARD
S.C. MUNICIPAL OFFICIALS
S.C. REAL ESTATE COMMISSION
S.C. STATE BOARD OF ARCHITECTURAL EXAMINERS
S.C. STATE BOARD OF REGISTRATION FOR ENGINEERS AND LAND SURVEYORS
S.C. SEISMIC SAFETY CONSORTIUM
S.C. SENATE SUBCOMMITTEE ON BANKING AND INSURANCE
S.C. TOURISM COUNCIL