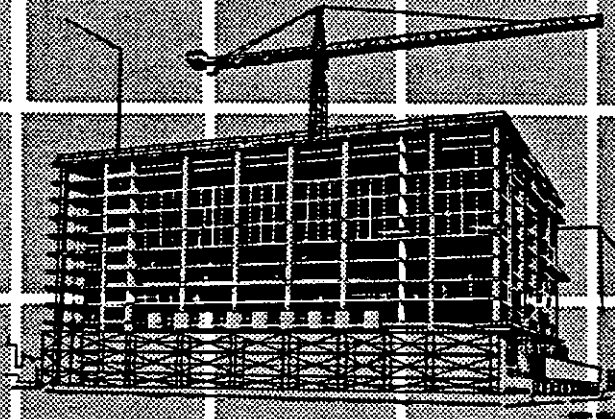


TECHNICAL PUBLICATION NO. 107

## ALTERNATIVES TO 10% RETAINAGE

*This research project was sponsored by  
The Building Construction Industry Advisory Committee under a grant from the  
State of Florida Department of Education*



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## ACKNOWLEDGEMENTS

The research work presented herein was sponsored by the Building Construction Industry Advisory Committee (BCIAC) under a grant from the state of Florida, Department of Education. The authors are grateful to BCIAC for sponsoring this project. The authors are also thankful to the BCIAC Executive Secretary Dr. Brisbane H. Brown, Jr. and Senior Secretary Ms. Patty Wood for their help and cooperation.

The authors express their indebtedness to Mr. Harold Johnson, BCIAC Coordinator for this project. His thoughtful comments made on an earlier draft of this report were very helpful and greatly improved the content of the report.

Two graduate students, Dan Angeletti and Ivan Rodriguez, of the Department of Construction Management, Florida International University, worked as research associates for this project. They worked hard for the successful completion of the project. Thank you, Dan and Ivan!

The chairman of the Department of Construction Management, Professor Jose' D. Mitrani, P.E. provided the authors with valuable guidance and advice when needed. We appreciate his support very much.

The authors are grateful to Ms. Lourdes Barouh, former secretary and Ms. Livia Trimino, secretary of the Construction Management Department at Florida International University, for their help.

Last, but not least, thanks to the many individuals, companies and professional groups that took part in the study through questionnaire survey and interviews. Without their participation, this study would not have been possible. The authors are expressing their sincere appreciation for the time they have taken out of their busy schedule to participate in this study.

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## EXECUTIVE SUMMARY

The construction industry is one of the largest industries in the United States in terms of the gross national product. Since Florida has a large volume of construction business, the construction industry is very important to Florida's economy. The construction industry all over the country as well as in Florida is plagued with low productivity, poor quality, high rate of business failures and high incidence of litigation and disputes. One of the main factors contributing to this situation is lack of capital in the industry resulting in inadequate cash flow and lack of profit for contractors, subcontractors and suppliers.

Some standard - but perhaps outdated - business practices, such as the practice of 10 percent retainage, greatly enhance the problems of inadequate cash flow needed for the proper operation of construction businesses. Over the years, the construction industry seems to have complacently accepted the idea of the 10 percent retainage as being the norm. Under the present economic situation perhaps this norm is not realistic anymore. Contractors' profit margin has steadily declined over the years resulting in inadequate cash flow and even business failures. If the 10 percent retainage practice is a factor contributing to this problem, the industry must seek reasonable and viable alternatives.

This research project was undertaken mainly to study the concept of retainage with a view to comprehend its intended purpose from the perspectives of the industry professionals. The study was focused on those effects of 10 percent retainage provision that seem to be greatly contributing to the cash flow problems of the construction industry. Finally, attempts were made to elicit viable alternatives to the flat 10 percent retainage practice from the suggestions of the different groups and individuals that participated in the study. A survey among the different groups that make up the construction industry was conducted. Interviews were also conducted with selected individuals representing different sectors of the industry. All the gathered data and information were classified and analyzed for the development of viable alternatives.

It was found that, although the contractors' group (including subcontractors, design/build firms and developer/builders) differs widely from the non-contractors' group (including owners and architect/engineers) in their opinions on the issue of retainage, they agree, in general, on the need for revising the standard retainage policy. It was found that the flat 10 percent retainage is the most common method of retainage although some variations of the standard method are being introduced and tried by different public agencies.

There seems to exist a consensus in the industry that 10 percent retainage practice hurts the cash flow of the contractors, subcontractors and suppliers. Total elimination of retainage provision, however, is not the most favored alternative. Many opined that timely reimbursement of both progress payments and retained funds will solve the cash flow problems to a great extent.

It was found that retainage provisions are more relaxed in the public construction sector than in the private. This is probably due to the fact that almost all public construction projects are bonded. Extensive use of bonding in the private construction industry will probably allow private owners to adopt lenient retainage provisions that would hopefully mitigate cash flow problems faced by the contractors, subcontractors and suppliers.

Many alternatives and modifications were suggested by the participants in this study. Some of them are being practiced as well. The main characteristics of these alternatives are highlighted in the following:

Rate of retainage should be decreased as the project progresses satisfactorily toward completion. Example, 5% retainage or no retainage after 50% completion of the project.

Retained money should be released periodically on longer duration jobs based on satisfactory performance. This would allow subcontractors, whose work had been done satisfactorily, to get paid before the entire project is completed.

Retainage should be based on trades or work subdivisions and should be released as work by trades is



completed. This way subcontractors' payments will not be delayed beyond reasonable time limits.

Interest earned on retained money should be paid to the contractors. This could be achieved by putting retainage in interest-bearing accounts. However, the exact mechanism of how this would work, and who will administer the accounts, need to be investigated. Although interest on retainage is a minor consolation to parties whose money is retained, this provision would hopefully encourage prompt payments. Another variation of this alternative is to allow contractors to use securities or pledged Certificate-of-deposits in lieu of retainage. This is allowed under Florida statutes and practiced by Florida Department of Transportation.

Percentage of retainage should be based on the job size. For larger jobs, 10 percent retainage, carried all the way to project completion, is too high. Another alternative, similar to this, is to put a maximum limit on the amount of total retainage.

A copy of this report may be obtained by contacting:

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## FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

### *Findings*

Plagued with low productivity, lack of capital, and too much competition, the construction industry, as a whole, is finding it difficult to cope with today's economic reality. The ultimate effect of all these problems means lack of profit for the contractors, subcontractors, and suppliers. If they cannot make a fair and reasonable profit and cannot maintain a smooth cash flow it would be unrealistic to expect them to do quality work and to work in harmony with other groups.

This research project was undertaken to investigate the practice of retainage as one of the factors that might be contributing to the contractors' lack of profit and difficult cash flow situation. It was considered by BCIAC - as manifested through funding of this project - as one of the areas that should be looked into for possible modification by the industry participants. Although retainage is not the only factor that causes cash flow problems in the construction industry, it is one of the most significant factors affecting project cost and cash flow.

The major findings of this research, developed through questionnaire survey and interviews, are summarized in the following.

Most of the respondents to our study cited 10 percent retainage as a factor that contributes to the contractors', subcontractors' and suppliers' cash flow problem. However, contractors and subcontractors thought that it is a major problem and the practice should be

fundamentally revised. Many felt that it is the subcontractors who eventually carry the burden of retainage; contractors almost always manage to pass-on this burden to the subs. In general, subcontractors' money is retained until the contractor's retainage is released, although their (subs') work is completed. The majority of non-contractor respondents to our survey see retainage as a very effective and practical tool for owners' protection; especially to have the punch list items done and the close-out documents handed over.

It was found that flat 10 percent retainage is the most common method although some variations are being introduced by different public agencies. It was also found that most contractors retain 10 percent from their subs regardless of the methods used on the GCs by the owners.

It was found in the study that bonding, a requirement in the public construction, is not extensively used in the private sector of the construction industry. Many contractors cannot qualify for bonding. Owners find it time-consuming and difficult at best and unaccessible at worst. Most owners use retainage as a protection against unwilling contractors to finish the work. Although bonds protect the similar interest of the owners, it is unusual to use bonds for finishing punch list items. Obviously, most contractors feel that the owner is being doubly protected, first by bonds and then by retainage.

It was found that many government agencies do not practice flat 10 percent retainage. Many public projects require only 5 percent, and some federal agencies have

adopted the policy that retainage should be withheld only for specific reasons such as failure to maintain schedule. It can be argued that since public owners are almost always protected by bonding they can adopt lenient retainage provisions. Although bonding and retainage cannot be considered as duplicative protection for the owners, there exist some interdependence. This fact also explains why in private construction the practice of retainage is still predominantly traditional, i.e., 10 percent flat. In private construction, bonding is not a common phenomenon.

A majority of the respondents (except subcontractors), however, felt that the provision for retainage should be revised to bring some relief to the contractors, subcontractors and suppliers, but should not be removed altogether from contract clauses. Even contractors want to use it as an effective tool to ensure completion of work from their subs. Most respondents agree that subcontractors and suppliers are the ones that are most hurt by the 10 percent retainage practice.

It is widely believed in the industry that contractors front load projects to minimize the effects of 10 percent retainage. Most of the responding contractors feel that revision of the 10 percent retainage clause will improve relationship between them and other professional groups and will reduce the overall project costs. Non-contractor respondents, on the other hand, assert that revision of retainage policy will not make things any better.

Middle grounds, somewhere in between flat 10 percent retainage and total removal of retainage from contract

clauses, seem to be favored by most of the respondents. It was expressed by many respondents and interviewees that the retainage policy should be revised so that it does not create excessive pressure on the contractors and subcontractors but at the same time it should also be available to the owner as a tool for protection against irresponsible contractors.

Decreasing the rate of retainage as the project progresses satisfactorily towards completion was suggested. Periodic release of retainage based on trades or work subdivisions was mentioned as an alternative. Payment of interest on retained money to contractors and subcontractors was favored by many as a fair provision. Timely full subcontractor payment, as their work completes, was suggested to alleviate the problems caused by retainage. Many in the industry think it is reasonable to retain lower percentage for larger jobs.

### *Conclusions*

The following conclusions can be drawn from the findings of this study:

- 10 percent retainage policy creates cash flow problems for the contractors, subcontractors and suppliers.
- Contractors usually pass-on the problems of retainage to the subcontractors, thus creating a very difficult situation for the subs.
- The provision for retainage is a tool that protects owners during the last part of the project. It is effective to get the punch list items done.
- Many public agency owners do not use flat 10 percent

retainage anymore.

- Bonds and retainage, although both protect the owner, are not the same things and one cannot replace the other. However, if bonding is more extensively used in the private construction industry (as in the public sector), hopefully, retainage provisions would become more lenient and relaxed.
- Timely release of progress payments and retained holdback is more important than actual retainage amount. In many public projects payments are frequently delayed due to delay in inspection.

#### *Recommendations*

Following are recommendations based on the findings of this study.

- The Retainage policy should be restructured based on the size and duration of the job. Flat 10 percent retainage for longer duration, high volume projects creates undue burden on the contractors and, as a consequence, on the subcontractors and suppliers. Concerned industry leaders may form a task force with representatives from all involved professional groups to reach a consensus on revised policy for retainage. For longer duration jobs a declining rate of retainage would be appropriate and for larger jobs the percentage of retainage should be reduced from 10 percent to 5 percent or even lower depending on the job size.
- A maximum limit on the amount of retainage can be negotiated in the contract. The maximum amount

should be based on the job size, project duration, completion of certain subcontracted work, contractor's projected profit, and estimated expenses to cover punch list items.

- Prequalification of contractors and bonding should be used by the private owners to ensure quality of performance in construction.
- Further studies should be conducted in the area of bonding to determine how to make bonding more accessible and effective in the private construction industry.
- Owners should pay promptly. Delay in payment is more likely to cause cash flow problems than the amount of retainage.
- Contractors should negotiate with the owners on the provision for retainage. Many owners would agree to stop holding retainage at a particular point in the job.
- Bonding companies and lending institutions, when involved, should monitor job progress and payments closely to avoid failures as well as to encourage prompt and early release of retained fund. This will also allow owners to relax retainage provision of the contract.
- Like many public agencies (e.g., Federal government and Florida Department of Transportation) owners should consider lowering 10 percent retainage to 5 percent or 0 percent after 50% completion of the project, depending on the contractor's performance. Contractors should be rewarded for satisfactory and timely performance by reduction of retainage and

prompt payment.

- A work package approach can be used to enforce retainage. Retained money can be fully released based on the satisfactory completion of trade responsibilities, instead of the entire project. This way subcontractors associated with trades of completed work would get paid as soon as the contractor gets paid.
- There should be a mechanism to reimburse interest earned on retained monies to the contractors. Although the problem of cash flow would not be completely solved by paying interest on the retainage, it would be a consolation to contractors and would discourage owners to hold retainage for too long. This approach should be extended to the lower tiers, i.e., subcontractors and suppliers. This suggestion should be further investigated to determine who will control funds and how interests will be reimbursed. It should be mentioned here that Florida DOT and many public agencies now accept securities in lieu of retainage. Contractors can earn interest on the securities.
- Effective regulations should be enforced for prompt payment to subcontractors. Subcontractors' money should not be retained for too long. Perhaps, owners can take the responsibility for paying subs directly upon certification (by GC) of satisfactory performance.
- Retained money should not be too high to hurt the contractor's cash flow and at the same time it should be high enough to ensure that the contractor



completes the project. It may mean that the total retainage at the time of final payment should not be more than the contractors total profit and yet should be sufficient to cover the costs of incomplete work.

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## Chapter 1

### INTRODUCTION

#### 1.1 The Problem Statement

The construction industry is one of the largest industries in the United States, and makes up approximately 10 percent of the gross national product<sup>1</sup>. Therefore, any negative impact on this industry will have a devastating effect on the national economy.

Like many other industries, one of the main problems in construction is insufficient capital. This lack of capital in the industry, along with some standard - but perhaps outdated - business practices, greatly enhances the problems of inadequate cash flow needed for the proper operation of construction businesses.

The continued lack of capital is creating a very unhealthy economic atmosphere in the construction industry, and is manifested by low profits, risky bidding situations (underbidding), less investments into plants and equipment, fewer new employment opportunities, and so on. Contractors have seen the reduction of earned profits (based on sales or revenues) from approximately 6% in 1972 to less than 3% in 1986 and perhaps lower still in 1991<sup>2</sup>.

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<sup>1</sup> Oglesby, C.H., Parker, H.W., and Howell, G.A. (1989). *Productivity Improvement in Construction*, McGraw-Hill Book Company, New York, NY. pp. 1.

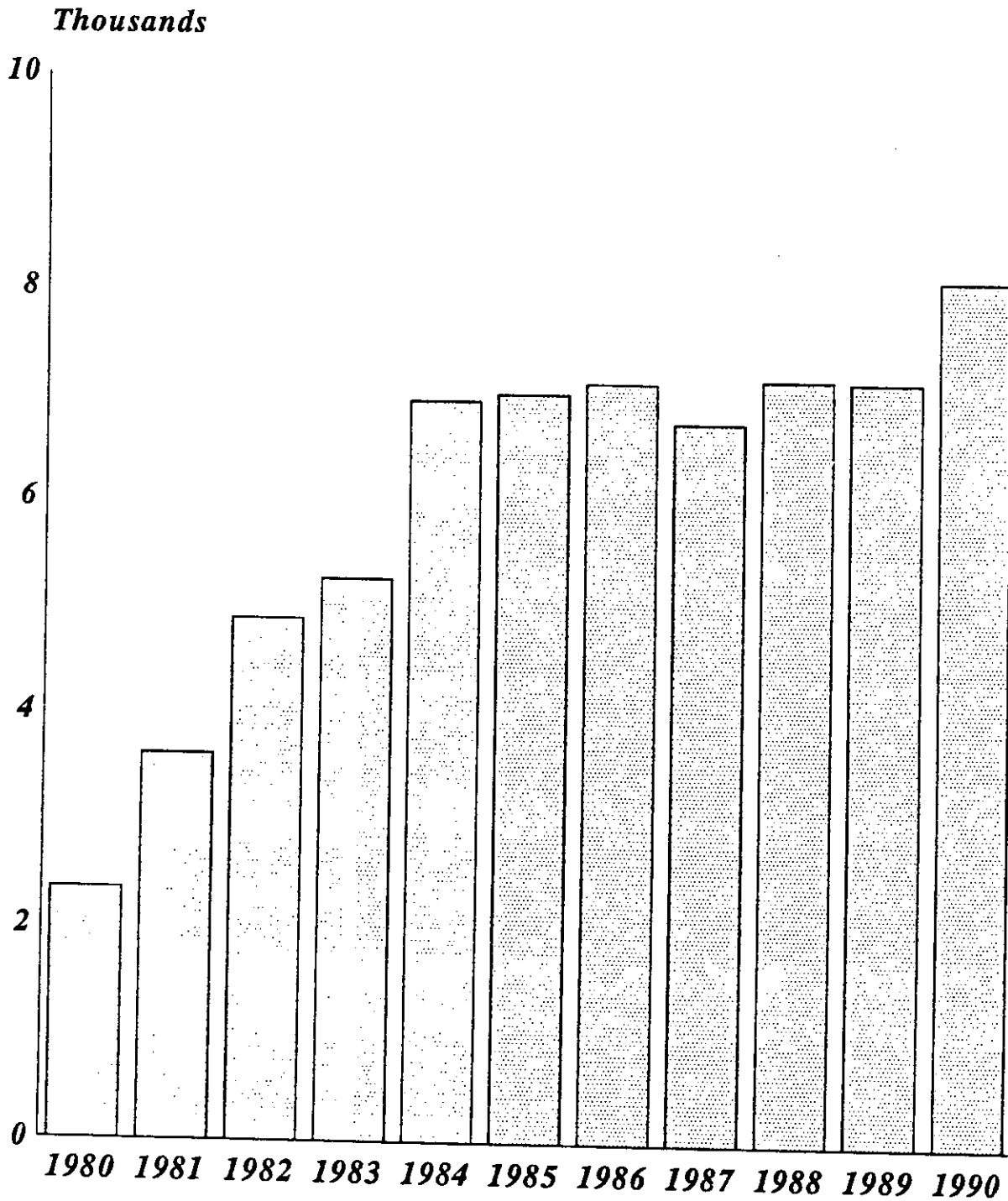
<sup>2</sup> Adrian, J.J. (1987). *Construction productivity Improvement*, Elsevier, New York, NY. pp. 6-7.

The effect is very clear, since the average construction cost estimate (bid price) has an accuracy of approximately 6%, and the profit margin has declined to less than 3%, it is obvious that bidding has become a very risky proposition. The decline in the volume of construction contracts have placed an added burden on the contractors. Many contractors are basically bidding on projects at or below cost in an attempt to keep their forces working. This is a major factor contributing to the increasing number of construction contractors' business failures over the past few years. The statistical information is shown graphically in *Figure 1* and *Figure 2*, compiled from Dun and Bradstreet publications<sup>1</sup>. *Figure 1* shows the number of construction business failures in the United States and *Figure 2* shows the same in Florida. Dun and Bradstreet data also indicates major reasons for failure. It was noted that more than 50% of the construction business failures were attributed to "economic factors causes" in most of the years during the 1984-1989 period. There is no reason for the trend to be otherwise during the 90s decade. "Economic factors causes" include insufficient profits, lack of capital and high interest rates, among others. The retainage policy, presently practiced by owners, both public and private, contributes significantly to the increase of "economic factors" in causing business failures in construction. Dun and Bradstreet data indicates that availability of cash or

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<sup>1</sup> "Business Failure Record," (1984-1990). The Dun and Bradstreet Corporation, New York, NY.

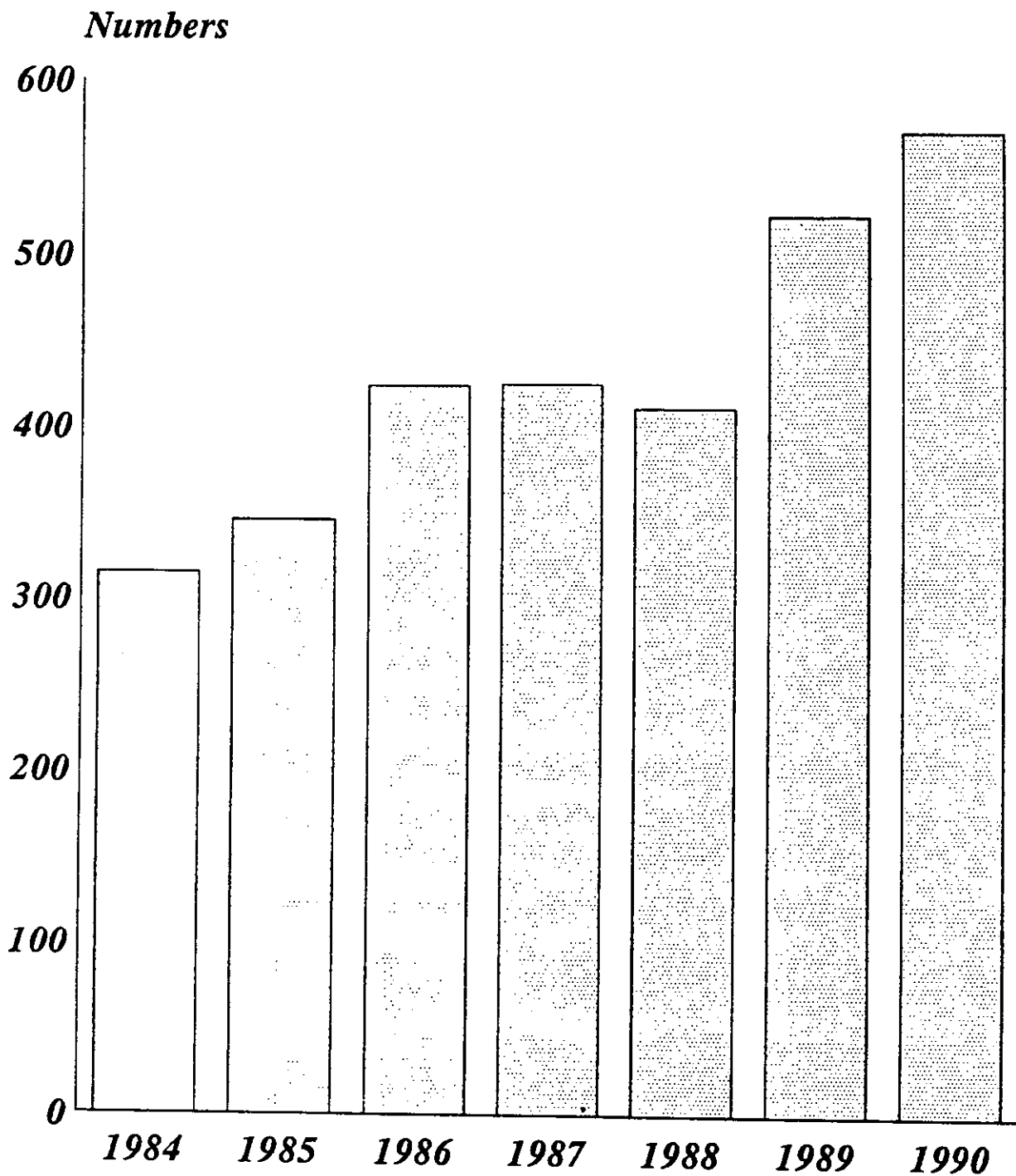
## *Construction Business Failures In The United States*



Source: The Dun & Bradstreet Corp.  
Business Failure Record Statistical Report  
1980-1990

**FIGURE 1**

## *Construction Business Failures In Florida*



*Source: The Dun & Bradstreet Corp.  
Business Failure Record Statistical Report  
1984-1990*

**FIGURE 2**



lack thereof determines business survival. The success or failure of companies in today's business environment is measured by their cash flows. It should be recognized, however, that retainage alone does not cause all the cash flow problems. Lack of sound management policies, poor business/accounting practices, and absence of effective quality control measures are the main reasons that cause business failures and cash flow problems in the construction industry.

### 1.2 Justification for Investigation

Text and reference books on the subject do not clearly explain the rationale behind retainage, and in particular the selection of the 10 percent figure. Over the years, the construction industry seems to have complacently accepted the idea of the 10 percent retainage as being the norm. Many years ago, it was normal to retain as much as 15%<sup>1</sup>. Under the prevailing economic situation in the industry perhaps this norm is not realistic anymore. Until the end of the 1960s decade, contractors were still having a positive cash flow even after the 10 percent retainage was deducted from their progress payments. The amount of 10 percent retained had little economic effect on the contractor other than deferring a portion of the profits. Contractors' profit margin has steadily declined over the years resulting in business failures at worst and

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<sup>1</sup> Cushman and Bigda, eds. (1985). *Construction Business Handbook*, 2nd ed., McGraw-Hill, New York, NY. pp. 10-14.

inadequate cash flow at best. A typical contractor would try to make at least 5% to 6% profits on a million dollar project for survival. The inadequate cash flow affects not only the contractors' own business but also those of the subcontractors, suppliers and vendors. If 10 percent retainage policy is a detrimental factor, the industry must seek for fair, reasonable and realistic alternatives.

Recognizing the importance of the problem, the Department of Education of the State of Florida through the Building Construction Industry Advisory Committee (BCIAC) has funded this research project to investigate viable alternatives to the standard 10 percent retainage practice. It was felt that this retainage amount seems to be unrealistically high and the practice needs to be revisited and other reasonable but effective alternatives be sought.

This research project was undertaken mainly to study the concept of retainage with a view to comprehend its intended purpose from the perspectives of the industry professionals. The study focuses on the effects of 10 percent retainage that seem to be greatly contributing to the cash flow problems in the construction industry. Finally, it attempts to elicit viable alternatives to the flat 10 percent retainage practice from the suggestions of the different groups in the industry.

## Chapter 2

### OBJECTIVES AND SCOPE OF RESEARCH

#### 2.1 Objectives

The main objective of this project, is to obtain information from the construction industry in the state of Florida in the form of perception and opinion of the several groups that make up the industry. All the gathered data and information are to be classified and analyzed for the development of the viable alternatives.

In this research project, a questionnaire survey among the different groups has been conducted. Interviews were conducted with selected individuals in an attempt to elicit opinions and suggestions.

#### 2.2 Scope of the Project

The results of the survey and the outcomes of the interviews are presented in this report. Because of the limitations of time and budget, the scope of this study was also limited. Further work must be done before the industry, as a whole, can reach a consensus and adopt alternate methods of retainage. This report presents alternatives that are in use by some agencies and alternatives that are suggested by experienced individuals. Opinions and suggestions on these alternatives comprise a major part of the report. This report would be useful to those in the construction industry who are responsible for and authorized to initiate and introduce changes for the betterment of the industry.

The findings and the suggested alternatives, as reported herein, will be disseminated by BCIAC throughout the industry.

### **2.3 Organization of the Report**

This report is subdivided into seven major parts, as listed below:

**SUMMARY AND CONCLUSIONS** - This report begins with an executive summary of the project and its outcome. Results of the study is outlined in detail in the section entitled "Findings, Conclusions, and Recommendations." In this section, major effects of the 10% retainage practice, as seen by the individuals and groups surveyed, along with their suggested alternatives and recommendations are presented.

**INTRODUCTION AND OBJECTIVES (CHAPTERS 1 & 2)** - In this section the problems due to 10% retainage are outlined. The background of the project is described and the justification for investigating the problem is given. In Chapter 2 scope and objectives of the study are explained.

**BACKGROUND (CHAPTER 3)** - Background of the retainage policies, specifications related to retainage, and variations practiced are covered in this chapter.

**RESEARCH METHODOLOGY (CHAPTER 4)** - In this chapter, the approach used to conduct the research project, the design and development of the questionnaire and the interviews, are described.

**QUESTIONNAIRE SURVEY (CHAPTER 5)** - Detailed description of the survey questionnaire, distribution of mailed surveys in the state of Florida by County, and profiles

of the groups surveyed are included in this chapter. It also contains the statistics on the response of the mail survey.

**SURVEY RESULTS (CHAPTER 6)** - The results of the questionnaire survey are presented in this chapter. The analysis is presented using charts, graphs and tables. The alternatives to standard 10% retainage practice, as identified have been highlighted. Opinions and additional comments made by the respondents have been included in this chapter.

**INTERVIEWS (CHAPTER 7)** - This chapter contains excerpts of the interviews with selected construction industry individuals and representatives of different professional groups. Their concerns and opinions are highlighted.

The last part of the report contains appendices and bibliography.

## Chapter 3

### BACKGROUND

#### 3.1 Retainage Policies

The practice of retainage is unique to the construction industry. It consists of holding back a stated percentage (usually 10%) from each progress payment to be paid upon completion of either the contractor's work or completion of the entire project. It is considered a financial guarantee that the contractor will:

- complete the work
- correct defects
- be capable of financing the project.

The rate of retainage is generally set forth in Contract rather than the General Conditions. Clough<sup>1</sup> writes "A retainage of 10 percent for the entire project has been typical, although reduced percentages and other retainage arrangements are now the rule. In any event, retainage on larger projects results in the owner having custody of large sums of the contractor's funds for extensive periods of time."

Where performance and payment bonds are required, the withholding of retainage seems to be a duplicative protection to the owner. However, this added protection

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<sup>1</sup> Clough, R.H. (1985). *Construction Contracting*, 5th ed., John Wiley & Sons, New York, NY. pp. 152-153.

is easier for the owners to access than bond security. Owners regard retainage as an additional inducement for the contractor to maintain orderly progress of the work. Clough<sup>1</sup> continues,

"... retainage does have some undesirable aspects for owners, general contractors, and subcontractors alike. Subcontractors are involved because general contractors normally apply retainage to their subcontractors in the same percentage as the owner applies it to the general contractor. Retainage can and does produce real cash flow problems for contractor, resulting in substantial borrowing at hefty interest rates. This results in higher construction costs for owners. In addition, it discourages contractors from bidding some projects, thus reducing competition. Withholding retainage from a subcontractor until completion of a project, even though its work may have been satisfactorily completed long ago, is particularly unfair. Yet the general contractor cannot be expected to remedy this situation from its own funds."

To reduce the undesirable effects of retainage, a number of changes have been introduced in recent years. The trend is now for contracts to call for 10 percentage retainage during the first half of a job with no additional retainage thereafter. Although not commonly

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<sup>1</sup> Clough, R.H. (1985). *Construction Contracting*, 5th ed., John Wiley & Sons, New York, NY. pp. 153.

used, these alternatives, mentioned in Clough<sup>1</sup> have been used to develop the questionnaire survey for this research project. Some of these are:

- 10 percent retainage is withheld only during the first half of the project, with subsequent progress payments made in full. An alternate to this is to apply 5 percent retainage to the entire project.
- Another variation of the above alternative is, as the project passes the 50% completion point, the normal rate of retainage of 10 percent can be reduced to 5 percent for subsequent payments.
- A more recent development is where 10 percent is retained on each work category of the project until that category is 50 percent completed, after which full payment is made if the work is proceeding satisfactorily.
- On some public projects, 10 percent is withheld for the entire project but the contracting officer may authorize full payment when satisfactory progress is being achieved. The federal government has discontinued the routine use of retainage on direct federal construction that is on or ahead of schedule and otherwise substantially in compliance with contract requirements.
- Substitution of certificates of deposit or interest-bearing securities for retention holdback. Securities, whose value is equal to the required

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<sup>1</sup> Clough, R.H. (1985). *Construction Contracting*, 5th ed., John Wiley & Sons, New York, NY. pp. 153.



retainage, are provided in escrow to the agency by the contractor with all interest earned being paid to the contractor. A recent amendment of Florida Statute Chapter 713 section 255.05 has been passed to allow substitution of cash retainage with approved securities.

### **3.2 Specifications Regarding Retainage**

Construction contracts are basically composed of a series of documents that outline the work to be performed, the terms and conditions of the contract, the responsibilities and obligations of the parties involved and the form and frequency of payments, among other rights and duties. Perhaps the most widely used documents in construction contracting (specially in the private practice) are those published by the American Institute of Architects (AIA).

Specifically, the AIA document A201<sup>1</sup>, that has been, in general, approved and endorsed by the Associated General Contractors (AGC) of America, is the document that is considered the keystone document coordinating the many parties involved in the construction process. Article 9 of the AIA document A201 establishes the guidelines by which payments to the contractors are to be processed. This article allows the owner to retain a portion of the payments due to contractors, basically until final completion. Although this document does not

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<sup>1</sup> AIA Document A201, *General Conditions of the Contract for Construction* (1987), The American Institute of Architects (AIA), New York, NY.

establish the percentage to be retained, the 10 percent figure is the one most widely used in the industry. The A201 document, however, does require the contractor to obtain a consent from the Surety before requesting any releases or reduction of retained amount.

The AIA document also requires that the contractor pay promptly each subcontractor upon receipt of payment from the owner, but it also allows the contractor to retain a portion of payment from the subcontractors. Again, the retainage amount is not stipulated, but it is also customary to withhold the same amount the owner retains from the contractor, usually 10 percent. AIA document states that payments to suppliers and subcontractors will reflect the percentage actually retained from the upper tier contractor. AIA subcontracts form (AIA document A401 (1978)) gives subcontractors the right to request directly from the architect information about the percentages of completion or the amount the architect has certified for payment on the work done by that subcontractor.

Recently revised Florida Statute Chapter 713 section 255.05 (passed in July 1992), affecting private construction, allows the parties to agree to withhold part of the requested payment and provides interest will accrue on this withheld amount beginning 14 days after any submitted punch list is completed and any of the three events occur:

1. an architect or engineer certifies that the project is substantially complete;
2. the issuance of a certificate of occupancy; or
3. the owner or tenant takes possession.

Associated General Contractors (AGC) of America supports the policy of 5% retainage throughout the project except when the owners retainage is greater than 5%, in which case the higher amount would govern, and provided that the security between the G.C./Subcontractor is the same as that between the G.C./Owner<sup>1</sup>.

In the public sector, most public agencies have developed their own terms and conditions of the contract, which somewhat follows the intent and the basic structure of the AIA A201 document, with their own specific clauses for retainage. They vary from agency to agency. But they all basically require the owner to retain a certain portion from payments due to contractors.

### **3.3 Changes in Retainage Policies of Public Agencies**

Most public agencies, including Federal Government Services Administration (GSA), have revised their traditional retainage policy. The prior standard of 10 percent throughout has been reduced. Many public jobs require only 5 percent. The Department of Defense and GSA have adopted the policy that retainage should be withheld only for specific reasons such as failure to maintain schedule. They experimented with the elimination of retainage provisions and have found that bids for work have come in at comparatively lower prices than in those situations where the general contractor has

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<sup>1</sup> Woodall, M. S. (1992). Personal Communication, see Appendix C.

imposed retainage provisions on subcontractors<sup>1</sup>. On most federal government projects the specific agency issuing the prime contract will normally determine the amount of retainage to be withheld. The amount varies from the current D.O.D. "policy" of zero retainage if the project is proceeding satisfactorily (10 percent retainage if the contracting officer believes there is any problem with progress or performance) to the old federal government standard of 10 percent retainage up to 50 percent completion, with zero thereafter if performance is satisfactory.

The underlying principle of the GSA policy is that retainage should not be used as a substitute for good contract management, and contracting officers should not withhold funds without cause. *GSA form 3506 (Rev. 10-90)* states:

"If the Contracting Officer finds that satisfactory progress was achieved during any period for which a progress payment is to be made, the Contracting Officer shall authorize payment to be made in full. However, if satisfactory progress has not been made, the Contracting Officer may retain a maximum of 10 percent of the amount of the payment until satisfactory progress is achieved. When the work is substantially complete, the Contracting Officer may retain from previously withheld funds and future progress payments that amount the

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<sup>1</sup> Cushman and Bigda, eds. (1985). *Construction Business Handbook*, 2nd ed., McGraw-Hill, New York, NY. pp. 14-7.

Contracting Officer considers adequate for protection of the Government and shall release to the Contractor all the remaining withheld funds. Also, on completion and acceptance of each separate building, public work, or other division of the contract, for which the price is stated separately in the contract, payment shall be made for the completed work without of a percentage."

It should be noted that almost all public construction is bonded. Public construction represents about 26% (1992 projected figures are \$100 billion out of a total of \$381 billion, in terms of 1987 dollars) of the total volume of construction as opposed to 33% (1992 projected figures are \$118 billion out of a total of \$381 billion, in terms of 1987 dollars) for private nonresidential construction<sup>1</sup>. It appears that private construction industry can also adopt some of the revisions being practiced in the public construction sector if bonding becomes accessible to most of the contractors or if a majority of the contractors can qualify for bonding.

#### **3.4 Effects of Retainage**

An individual's position within the industry will probably determine his/her opinion relative to advantages and/or disadvantages of retainage. Advantages as seen by owners may include:

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<sup>1</sup> U.S. Industrial Outlook (1992), U.S. Department of Commerce, International Trade Administration, Washington, DC. pp. 5-2.

- Retainage protects the owner's interest,
- Assures product quality,
- Assures adherence to project schedules,
- Protects owner from front-loading progress payments,
- Insures project completion.

Conversely, the contractors and/or subcontractors may see retainage as having such disadvantages as:

- Retainage increases the cost of construction,
- Affects cash flows adversely,
- Increases project duration and reduces productivity,
- Affects workmanship and quality adversely,
- Forces contractors/subcontractors to front-load progress payment requests.

In the following subsections, major concerns of the owners, contractors, subcontractors, bonding companies and lending institutions, as related to the issue of retainage are outlined.

#### *Owners*

Owners, both public and private, tend to believe that there is absolutely no way to get all the necessary work items completed without holding retainage. They are concerned that contractors might walk off the job before completion if no retainage is held or if retainage amount comes close to cost of work to complete project. Owners do not see without retainage, how contractors can be held responsible for items, such as: work not done, poor work that must be corrected, code compliance, delivery of warranties, guarantees, operating instructions, parts information, compliance with mechanics lien law,

occupancy and other permits, inspection reports, as-built drawings, etc. Owners do not think that bonds can be effectively utilized to address these concerns.

#### *General Contractors/Builders*

General contractors and Builder/developers feel that 10 percent retainage amount is unrealistically high and by holding this amount owners are actually forcing them to finance part of the project. Contractors feel that owners should not be earning interest on retainage. Their major concern is that it hurts their cash flow. They tend to think that owners are being doubly protected, by bonds and by retainage. Contractors also worry that owners would use (or abuse) the retainage fund against backcharges.

#### *Subcontractors/Suppliers*

It appears that subcontractors and suppliers/vendors are more adversely affected due to retainage than the contractors. This may be caused by the use of "pay-when-paid" clauses in contracts between contractors and subcontractors. Although most contracts call for "timely" payment to subcontractors by the contractors, the interpretation of the term "timely" is most often subject to disagreement between the contracting entities. The existence of the retainage practice is a cost factor to the subcontractor. Particularly where a subcontractor posts a performance bond, there would appear to be no persuasive reason for the subcontractor to have to be subjected to the retainage provision. Whatever the retainage, it should be paid within a reasonable time limit. If the subcontract provides that the retainage be withheld until completion of the entire project, it is

especially unfair to such subcontractors as the excavator and the steel erector whose work is completed early in the course of construction. Such a provisions create very severe hardships on subcontractors.

*Bonding/Surety Companies and Lending Institutions*

The issue of retainage affects the decision of credit evaluators (bonding and lending institutions) in several ways. They want timely completion of projects according to specifications. On the other hand, they also desire that contractors, subcontractors and suppliers are able to maintain smooth cash flow. Bonding companies get concerned if they see that the retained amount is too high since it increases the likelihood of contractor-failures. In the event of failure, however, they would like to get hold of the retainage fund for completing the job. Lending institutions' (banks) concerns are similar. They want smooth cash flow of the contractors/builders since it ensures repayment of loan. They try to avoid delay in project completion since it will also delay the process of income-generation of their clients. The higher the percentage of retainage, the more closely these financial institutions (bonding and lending) need to check out the credit worthiness of the customer and the project. On the other hand, with lower rate of retainage they must monitor the progress of the project and must verify that the subs and the suppliers are being paid regularly.

Banks and bonding companies frequently face another retainage-related issue, and that is, how to treat unpaid retainage when reviewing contractors' financial



statements<sup>1</sup>. Some do not count retainage as a receivable until the contract is complete. Others record retainage as a current asset throughout an entire project. Thus one needs to know the accounting basis used by a contractor before evaluating his statement. If the retainage is due and payable well in the future and if there is a concern about the contractor's ability to pay promptly in case the owner delays payment, then unpaid retainage cannot be considered as current asset.

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<sup>1</sup> Cushman and Bigda, eds. (1985). *Construction Business Handbook*, 2nd ed., McGraw-Hill, New York, NY. pp. 57-20.

## Chapter 4

### RESEARCH METHODOLOGY

#### 4.1 Questionnaire Survey

A questionnaire survey was conducted as the main approach of this research project. In addition, fourteen interviews have been conducted with selected industry professionals and representatives of professional associations. As stated earlier, the main objective of the research was to identify alternatives to the standard practice of 10 percent retainage. The questionnaire was developed in accordance with this objective. It was mailed out to different segments of the construction industry throughout the state of Florida.

The questionnaire was developed for two diverse groups, contractors and non-contractors. Developers and builders were included in the contractors' group because of their similarity of involvement in the construction business. Non-contractors' group included all others, such as owners, public agencies, architect/engineers, construction managers, bonding companies, attorneys, suppliers, and specialty contractors.

It was felt necessary to include some questions that were only relevant to contractors and builder/developers. As a result, there were two questionnaires. A long version with 20 questions was mailed to general contractors and builder/developers. A short version with 10 questions was mailed to all other groups. The questions on each were the same, except the long version included additional questions relevant to contracts and

retainage practices. Different colors were used so that they can be easily separated and sorted when received. Blue-colored questionnaire was used for contractors and ivory-colored was used for non-contractors. Samples of these questionnaires are included in Appendix A; each page of the copies of the blue and ivory questionnaires is marked with *BLUE* and *IVORY* respectively.

#### **4.2 Types of Questions Asked**

The questionnaire contained questions of four types. Questions 1 through 4 were of general nature and were used to obtain a profile of the company. These questions were common in both sets of questionnaires. Questions 5 through 14 in the blue (for contractors and builder/developers) questionnaire were of specific nature regarding the respondents' experience, policy and practice on contract types, bonding and retainage. The third group of questions (15 through 18 in the blue questionnaire and 5 through 8 in the ivory questionnaire) was designed basically to identify alternatives to 10 percent retainage. Specific questions on how the respondents feel about the existing 10 percent retainage practice, how they think that the policy affects the industry and finally how they rate some of the alternatives as listed in the questionnaire, were asked. In addition, the respondents were also asked to write in their own suggestions. The last two questions in both blue and ivory questionnaires were intended for additional input from the respondents. One for additional comments and the other to indicate their willingness to participate in future studies on

retainage. They were asked to furnish names, addresses and telephone numbers in case they were willing to participate. The distribution and combination of the groups surveyed are described in details in the next chapter.

#### 4.3 Interviews

In addition to the questionnaire survey, interviews were conducted with selected individuals representing construction-related companies and associations from the construction industry. These include several general contracting firms, one construction management firm, one contractors' association, one architectural/engineering firm, one architects' association, one federal government resident engineer, two bonding company representatives, and one bank officer in charge of construction loan disbursement. These various individuals and organizations were selected to obtain different views on retainage. Interviews were conducted in an unstructured conversational atmosphere instead of a rigid format. It proved to be an effective way of eliciting opinions on justifiability of existing retainage policies and suggestions on alternatives. Detailed results of these interviews are reported in Chapter 7.

## Chapter 5

### QUESTIONNAIRE SURVEY

#### 5.1 General

In October 1991, 808 questionnaire-Surveys were mailed out to different groups involved in the construction business in the state of Florida. Florida Builders and Contractors Directory (1991)<sup>1</sup> was used to generate the survey mailing list. A cover letter was included with each survey. The letter was addressed to the company executive. The objective of the research project and the importance of the response were emphasized in the letter (see Appendix B for a sample cover letter). A "no-postage-necessary" return envelope was included with each questionnaire-survey. The questionnaire itself (see Appendix A) was designed to encourage responses. It contained only necessary items and was kept as short as possible. In most of the items readers were asked to respond either by a check mark or a number from a predefined scale. The design of the questionnaire was also governed by the requirement of the database software, used for the subsequent analysis of the responses.

#### 5.2 Distribution by Groups

The distribution among the groups selected is shown

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<sup>1</sup> Florida Builders and Contractors Directory (1991), Gulfstream Publishing Company, Inc. Ft. Lauderdale, Florida.

in Table 1. As mentioned earlier, blue questionnaire was mailed to contractors and builder/developers and ivory questionnaire was mailed to the rest of the groups. It should be mentioned here that about 21% of the questionnaires were returned to the investigators as shown in Table 1. It indicated that many companies either moved or went out of business within a very short period (perhaps a sign of the recessionary time). About one-third of those returned were remailed using the new addresses that were available.

**Table 1. Distribution of Mailings of Questionnaire Survey by Groups.**

<b>Groups</b>	<b>Mailed Origin- ally</b>	<b>Returned by Post Office</b>	<b>Remailed</b>	<b>Net Mailed</b>	<b>Color Code of Survey</b>
<b>General Contractors</b>	307	79	32	260	Blue
<b>Developer/ Builders</b>	149	35	10	124	Blue
<b>Architect/ Engineers</b>	141	33	14	122	Ivory
<b>Construc- tion Law Firms</b>	26	1	1	26	Ivory
<b>Bonding Companies</b>	31	1	0	30	Ivory
<b>Specialty Contractors</b>	55	13	8	50	Ivory
<b>Construc- tion Management Firms</b>	30	11	3	22	Ivory
<b>Public Agency/ Owners</b>	69	1	0	68	Ivory
<b>TOTAL</b>	<b>808</b>	<b>174</b>	<b>68</b>	<b>702</b>	

### 5.3 Distribution by County

A fairly even distribution over the entire state of Florida was intended. Accordingly, each group selected was distributed approximately to the ratio of the population density among the counties. Counties with very low population density were not included in this study. The distribution of mailing by County is shown in Table 2.

### 5.4 Responses

Out of 702 net mailings (originally mailed - returned by post office + remailed) 183 usable responses were received. The response percentage was 26.07%. In the contractors' group (blue questionnaire), 67 responses were received with a response rate of 17.45% and in the non-contractors' group (ivory questionnaire), 116 responses were received with a percentage of 36.48%. See Table 3 for statistics on the responses. It is worth noting that the response rate of non-contractors is almost double as compared to contractors' group.



**Table 2. Distribution of Mailings of Questionnaire Survey by  
Counties in the state of Florida.**

County	Blue Mailed	Ivory Mailed	Total Mailed	% Total Mailed	Popul- ation, in 000	% Popu- lation
Alachua	3	4	7	1.8	182	1.4
Baker	1	0	1	0.2	19	0.2
Bay	2	3	5	1.3	127	1.0
Bradford	0	0	0	0.0	23	0.2
Brevard	12	11	23	5.8	399	3.1
Broward	71	40	111	26.9	1256	9.7
Calhoun	0	0	0	0.0	11	0.1
Charlotte	0	0	0	0.0	111	0.9
Citrus	2	0	2	0.4	94	0.7
Clay	3	1	4	0.9	106	0.8
Collier	9	5	14	3.4	152	1.2
Columbia	0	0	0	0.0	43	0.3
Dade	84	42	126	30.4	1937	15.0
De Soto	0	1	1	0.2	24	0.2
Dixie	0	0	0	0.0	11	0.1
Duval	36	18	54	13.0	673	5.2
Escambia	8	4	12	2.9	263	2.0
Flagler	0	1	1	0.2	29	0.2
Franklin	0	0	0	0.0	9	0.1
Gadsden	1	3	4	0.9	41	0.3
Gilchrist	0	0	0	0.0	10	0.1
Glades	0	0	0	0.0	8	0.1
Gulf	0	0	0	0.0	12	0.1
Hamilton	0	1	1	0.2	11	0.1
Hardee	1	0	1	0.2	20	0.2

**Table 2. Distribution of Mailings of Questionnaire Survey by  
Counties in the state of Florida (Continued).**

County	Blue Mailed	Ivory Mailed	Total Mailed	% Total Mailed	Popul- ation, in 000	% Popu- lation
Hendry	1	1	2	0.5	26	0.2
Hernando	1	2	2	0.5	101	0.8
Highlands	0	0	0	0.0	68	0.5
Hillsboro	23	19	42	10.4	834	6.4
Holmes	0	1	1	0.2	16	0.1
IndianRvr	1	6	7	1.9	90	0.7
Jackson	0	1	1	0.2	41	0.3
Jefferson	0	0	0	0.0	11	0.1
Lafayette	0	0	0	0.0	6	0.0
Lake	2	3	5	1.3	152	1.2
Lee	11	11	22	5.5	335	2.6
Leon	11	17	28	7.2	192	1.5
Levy	0	1	1	0.2	26	0.2
Liberty	0	0	0	0.0	6	0.0
Madison	0	0	0	0.0	17	0.1
Manatee	2	5	7	1.9	212	1.6
Marion	3	4	7	1.9	195	1.5
Martin	11	3	14	3.4	101	0.8
Monroe	3	7	10	2.6	78	0.6
Nassau	0	1	1	0.2	44	0.3
Okaloosa	1	2	3	0.8	144	1.1
Okeechobe	0	0	0	0.0	30	0.2
Orange	44	36	80	20.0	678	5.2
Osceola	0	1	1	0.2	108	0.8
Palm Bch	36	32	68	17.0	864	6.7

**Table 2. Distribution of Mailings of Questionnaire Survey by  
Counties in the state of Florida (Continued).**

<b>County</b>	<b>Blue Mailed</b>	<b>Ivory Mailed</b>	<b>Total Mailed</b>	<b>% Total Mailed</b>	<b>Popul- ation, in 000</b>	<b>% Popu- lation</b>
Pasco	5	4	9	2.2	281	2.2
Pinellas	27	20	47	11.6	852	6.6
Polk	6	3	9	2.2	405	3.1
Putnam	0	0	0	0.0	65	0.5
St. Johns	0	2	2	0.5	84	0.6
St. Lucie	6	5	11	2.7	150	1.2
Santa Ros	2	2	4	1.0	82	0.6
Sarasota	11	10	21	5.3	278	2.1
Seminole	13	10	23	5.7	288	2.2
Sumter	1	0	1	0.2	32	0.2
Suwannee	0	0	0	0.0	27	0.2
Taylor	1	0	1	0.2	17	0.1
Union	0	1	1	0.2	10	0.1
Volusia	2	8	10	2.7	371	2.9
Wakulla	0	0	0	0.0	14	0.1
Walton	0	0	0	0.0	28	0.2
Washingtn	0	0	0	0.0	17	0.1
<b>TOTAL</b>	<b>456</b>	<b>352</b>	<b>808</b>	<b>100.0</b>	<b>12938</b>	<b>100.0</b>

Table 3. Response Statistics

Groups	Color-code	Net Mailings	Responses Received	Percentage of responses
Contractors, Builders/Developers	Blue	384	67	17.45
Non-Contractors	Ivory	318	116	36.48
Total		702	183	26.07

# **ALTERNATIVES TO 10% RETAINAGE**

**Grant 90-6**

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**December 1992**

**This research project was sponsored by the  
BUILDING CONSTRUCTION INDUSTRY ADVISORY COMMITTEE  
under a grant from  
The State of Florida Department of Education**

## **Chapter 6**

### **SURVEY RESULTS**

#### **6.1 Characteristics of the Respondents**

Questions 1 through 4 are identical in both blue and ivory surveys. These four questions asked about the type, size, specialization and age of the responding companies. The results are presented in the following:

##### **6.1.1 Question 1: Type of Firm/Organization**

The responses to Question 1 is presented in *Table 4*. In this question, respondents were asked to check their type of business. Since many companies were involved in more than one type of business they were asked to check all that apply. It should also be noted that, for the same reason, some (although very few) contractors (including builder/developers) received ivory questionnaires and some non-contractors received blue questionnaires. Question 1 was useful to get a realistic breakdown of the respondents by type of business. Most of the respondents were general contractors followed by architect/engineers, developer/builders and design/build firms. It should be noted that only 18 subcontractors responded to the survey. Considerable number of responses were obtained from the public agency owners. Responses from other groups, as indicated by the figures in *Table 4*, are minimal.

Table 4. Question 1 - Type of Firm/Organization

TYPE OF ORGANIZATION	BLUE	IVORY	TOTAL RESPONSES
DEVELOPER/BUILDER	28	2	30
DESIGN/BUILD FIRM	17	5	22
ARCHITECT/ENGINEER	2	46	48
GENERAL CONTRACTOR	45	13	58
SUBCONTRACTOR	7	11	18
MAT/EQUIP. SUPPLIER	0	1	1
BONDING COMPANY	1	4	5
FINANCIAL INST.	1	0	1
CONSTR. LAW FIRM	0	1	1
PUBLIC AGENCY	0	38	38
PRIVATE OWNER	3	5	8
PROFESSIONAL ORG.	0	5	5
OTHER	0	8	8

#### 6.1.2 Question 2: Size of Firm/Organization

Responses to question 2 are summarized in Table 5, where size of the company is indicated in terms of the number of employees. It should be noted that most of the respondents (63%) have more than 9 employees and about half of these respondents have more than 50 employees.

Table 5. Question 2 - Size of Firm/Organization

NUMBER OF EMPLOYEES	NUMBER OF RESPONSES	% OF TOTAL RESPONSES
1 - 3	20	11
4 - 9	47	26
10 - 50	57	31.5
> 50	57	31.5
TOTAL	181	100



### 6.1.3 Question 3: Chief Areas of Business

In Question 3, respondents were asked to indicate their chief areas of construction business. It was realized that many respondents may be involved in more than one type of construction business. For that reason they were asked to check more than one category in the questionnaire if appropriate. The results are summarized in Table 6. It should be noted that since many responded to more than one category the total exceeds the actual number of respondents. The figures in Table 6 show that very few respondents were involved with heavy construction and respondents were almost evenly distributed among other categories.

Table 6. Question 3 - Chief Areas of Business

AREA OF BUSINESS	NUMBER OF RESPONSES	% OF TOTAL RESPONSES
RESIDENTIAL	75	20
RENOVATIONS/ADDITIONS/INTERIORS	80	21
PRIVATE COMMERCIAL	116	30
PUBLIC (LOCAL/STATE/FEDERAL)	91	24
HEAVY (ENGINEERING/HIGHWAY)	21	5
TOTAL	383	100

#### 6.1.4 Question 4: Years in Business

Responses to Question 4 are shown in Table 7. Most of the responding companies (73%) are in business for more than ten years. About a quarter (23%) are in the range of four to ten years. It can be inferred that participation of new businesses in this survey was minimal.

Table 7. Question 4 - How Long has Your Firm/Organization been Established?

NUMBER OF YEARS ESTABLISHED	NUMBER OF RESPONSES	% OF TOTAL RESPONSES
LESS THAN ONE YEAR	0	0
ONE YEAR TO FOUR YEARS	7	4
FOUR YEARS TO TEN YEARS	47	23
MORE THAN TEN YEARS	132	73
TOTAL	180	100

## **6.2 Specific Questions for Contractors and Builder/Developers**

As mentioned earlier, Questions 5 through 14 in the blue questionnaire were designed only for the contractors and builder/developers. Questions regarding their policies on retainage as applied to subcontractors, their practices on bonding, and the type of retainage encountered by them were asked in this group.

### **6.2.1 Geographic Origin of Clients**

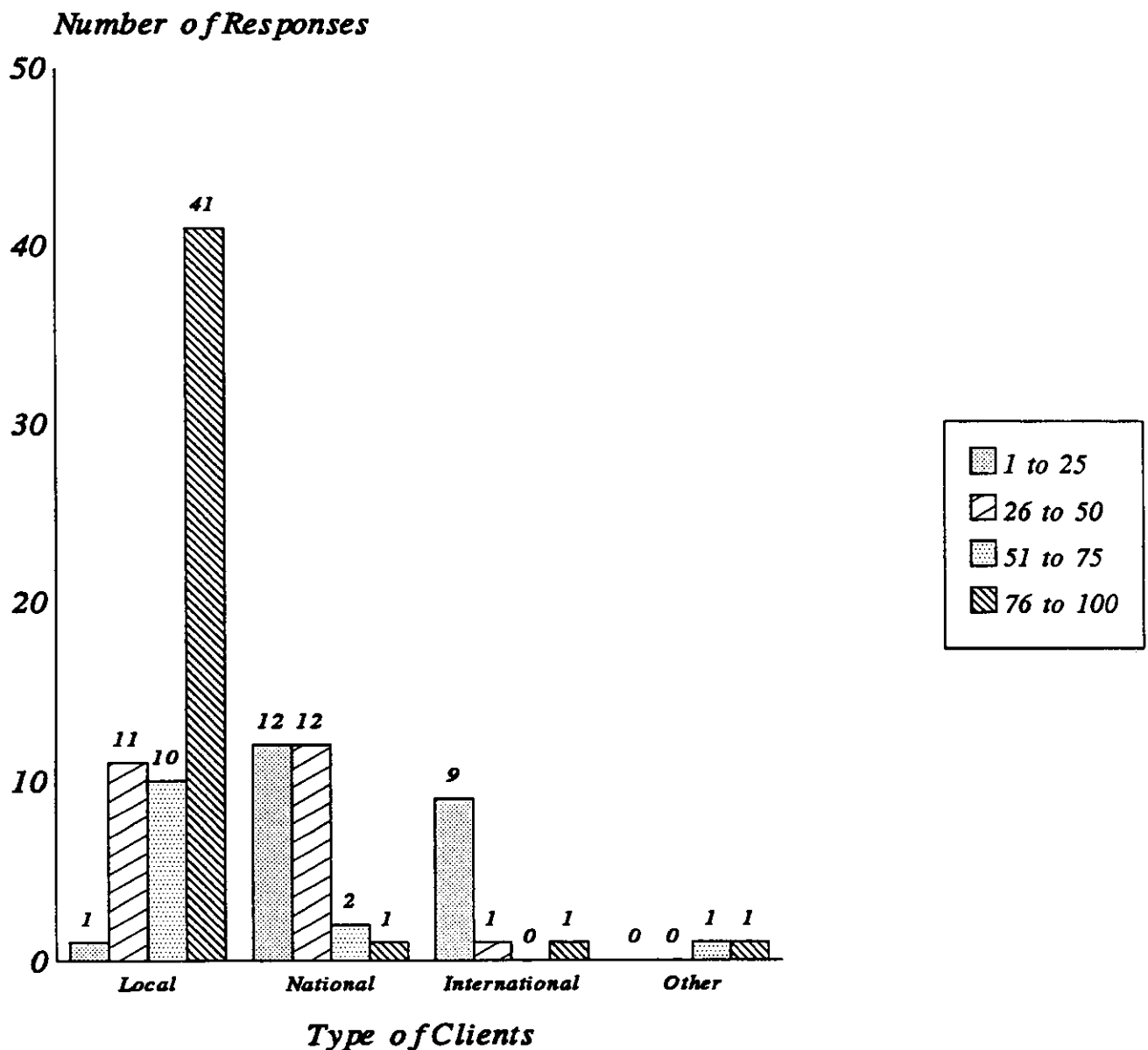
Question 5 (Blue) was asked to determine the origin of the clients of the responding contractors (and builder/developers). Three categories were included, local (Florida), national and international. An "other" category was also included to allow the respondents to indicate anything else. The results are shown graphically in Figure 3. Majority (41 out of 67) of the respondents do 76% to 100% of their business with local clients. In other words, majority of the respondents' business is only confined in the state of Florida. A good number of respondents (27 out of 67) do business at national level in varying degrees. Very few ( 11 out of 67) have international clients.

### **6.2.2 Type of Clients or Contracts (Competitive/Negotiated)**

In Question 6 (Blue), respondents were asked to indicate the type of contracts they encounter. The results are shown in Figure 4. The figures suggest that both types are more or less equally experienced by the

# *Question 5 (Blue)* *Percent of Work conducted with Clients who are*

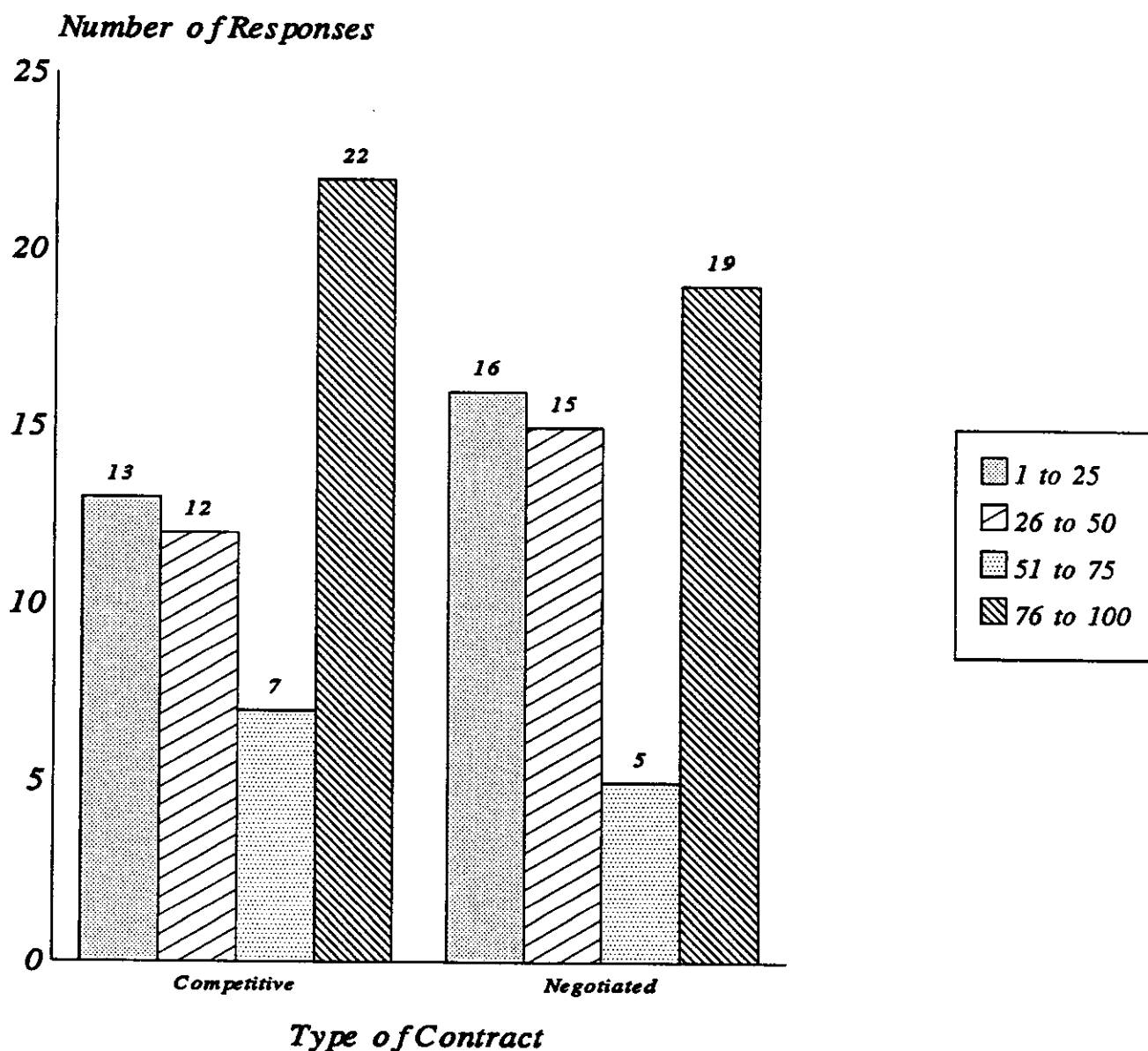
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**FIGURE 3**

## Question 6 (Blue)

### Percent of Work with Contracts that are



**FIGURE 4**

respondents. About a third (22 out of 67) of the respondents indicated that 76% to 100% of their work is done under competitive contracts. About the same number (19 out of 67) responded that 76% to 100% of their work is done under negotiated contracts. Between 26% to 75% of competitive work is experienced by 19 (out of 67) respondents. The same range of negotiated contracts is indicated by 20 respondents.

### 6.2.3 Annual Contract Volume of the Responding Contractors

Responses to Question 7 (Blue) are presented in Table 8. About 34% of the respondents' annual volume of business fall within the range of \$1 million to \$5 million. 82% of the respondents' annual volume of business is under \$20 million. Consequently, it should be noted that majority of the respondents to this question represent relatively small businesses.

**Table 8. Question 7 (Blue) - Annual Contract Volume of Business**

VALUE OF BUSINESS	NUMBER OF RESPONSES	% OF TOTAL RESPONSES
UNDER \$500,000	3	4
\$500,000 TO \$1,000,000	10	15
\$1,000,000 TO \$5,000,000	22	34
\$5,000,000 TO \$10,000,000	15	22
\$10,000,000 TO \$20,000,000	5	7
OVER \$20,000,000	12	18
<b>TOTAL</b>	<b>67</b>	<b>100</b>

#### 6.2.4 Extent of Providing Bonding

Table 9 shows the responses obtained from Question 8 (Blue). This question asked to indicate the extent of contract works for which bonding is provided by the respondents. About a third (32%) do not provide any bonding. Only about a quarter (24%) provide bonding to 76% to 100% of their construction work.

Table 9. Question 8 (Blue) - Extent of Providing Bonding

PERCENT OF WORK	NUMBER OF RESPONSES	% OF TOTAL RESPONSES
NONE	21	32
LESS THAN 25%	13	19
26% TO 50%	10	15
51% TO 75%	7	10
76% TO 100%	16	24
TOTAL	67	100

#### 6.2.5 Percent of Subcontractors Required to Provide Bonding

It is interesting to note that very few contractors require their subcontractors to provide bonding. This was asked in Question 9 (Blue) and the responses are shown in Table 10. About 45% of the respondents do not require bonding from their subs at all. 31% require from less than 25% of their subs. Only 9% require bonding from 51% to 100% of the subcontractors.

**Table 10. Question 9 (Blue) - Percent of Subcontractors Required to Provide Bonding**

PERCENT OF SUBCONTRACTORS	NUMBER OF RESPONSES	% OF TOTAL RESPONSES
NONE	30	45
LESS THAN 25%	21	31
26% TO 50%	10	15
51% TO 75%	4	6
76% TO 100%	2	3
<b>TOTAL</b>	<b>67</b>	<b>100</b>

**6.2.6 Percent of Work Requiring 10% Retainage throughout the Project Duration**

Responses to Question 10 (Blue) are summarized in Table 11. A majority (56%) of the respondents indicated that in 76% to 100% of their work they experience 10 percent retainage throughout the project duration. It can be concluded from figures in Table 11 that although

**Table 11. Question 10 (Blue) - Extent of Contract Requiring 10% Retainage throughout the Project Duration**

PERCENT OF WORK	NUMBER OF RESPONSES	% OF TOTAL RESPONSES
NONE	6	9
LESS THAN 25%	11	16
26% TO 50%	3	4
51% TO 75%	10	15
76% TO 100%	37	56
<b>TOTAL</b>	<b>67</b>	<b>100</b>



there are other methods of retainage in practice, they are not as widely used as the standard 10 percent method.

#### **6.2.7 Frequency of Encountering Different Methods of Retainage**

Responses to Question 11 (Blue) is graphically shown in *Figure 5*. Respondents were asked to indicate the frequency (by percentage) of encountering the methods of retainage. Two prominent types were mentioned in the questionnaire. They were also asked to write in any other method they encountered. 36 respondents (out of 67, with a percentage of 54) indicated a frequency of 76% to 100% corresponding to 10 percent flat method of retainage. The second method, "10% until 50% of the construction is completed and no retainage thereafter" although widely publicized in the literature on construction contracts (e.g. Clough 1985), was indicated only by 5 respondents (7.5%) as the predominant (76% to 100% frequency) method. 9 respondents (13%) indicated that they encounter "other" methods with varying degrees of frequency. Some of these "other" methods as mentioned are reproduced below:

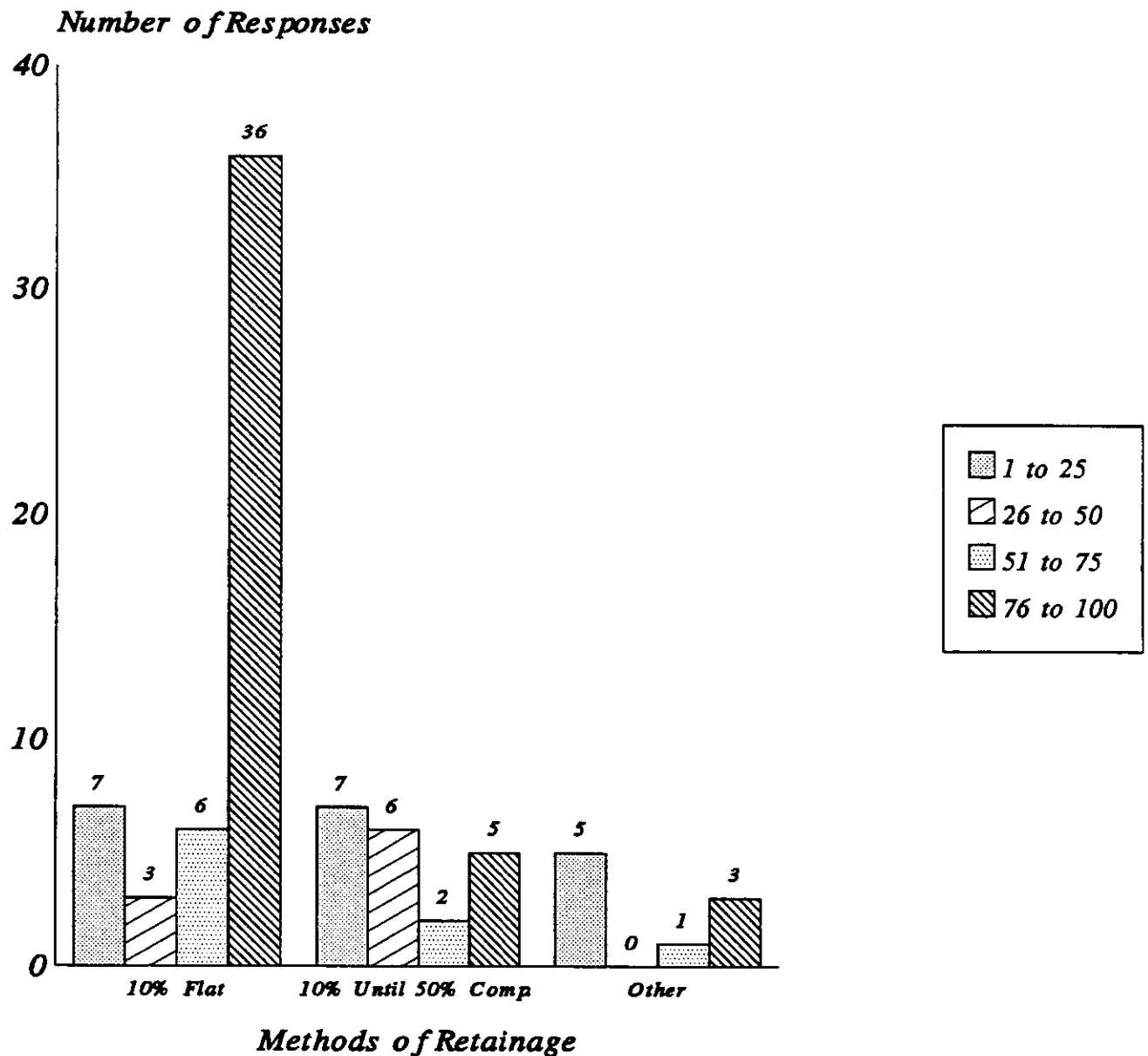
- 10% until substantial completion then 5%.
- 10% till 50% completion then 5% on balance.
- 0-75% no retainage, 75-100% 10 percent of value of uncompleted work exceeding 75% of contract amount.
- 5% flat retainage.

#### **6.2.8 Extent of 10% Retainage from Subcontractors**

Most contractors (including builder/developers) retain 10 percent from their subcontractors' payments.

*Question 11 (Blue)*

*Frequency of Encountering the Methods of Retainage*



**FIGURE 5**

This was indicated by the responses from Question 12 (Blue). The results are shown in Table 12. It should be noted that contractors in most cases pass-down the burden of retainage to their subcontractors. As a consequence, subcontractors are perhaps the worst sufferers of the financial impact caused by the standard 10 percent retainage policy.

**Table 12. Question 12 (Blue) - Extent of Retaining 10% from Subcontractors' Payment Request**

SUBCONTRACTORS	NUMBER OF RESPONSES	% OF TOTAL RESPONSES
ALL	32	48
ONLY MAJOR SUBCONTRACTORS	23	34
NONE	12	18
<b>TOTAL</b>	<b>67</b>	<b>100</b>

#### **6.2.9 Method of Retainage from Subcontractors**

Question 13 (Blue) responses are tabulated in Table 13. The figures in the table substantiates the findings of the previous one. The majority (44%) of the contractors retain from their subcontractors using 10 percent flat procedure. They follow this procedure regardless of the method used applied on them by their clients/owners. 26% of the respondents, however, follow the owners' policy of retention.

#### **6.2.10 Frequency of Adding Financing Cost of Retainage into Bid Price**

This was asked in Question 14 (Blue) and the answers are

**Table 13. Question 13 (Blue) - Method of Retaining  
from Subcontractors' Payment Request**

<b>METHOD OF RETENTION</b>	<b>NUMBER OF RESPONSES</b>	<b>% OF TOTAL RESPONSES</b>
DO NOT RETAIN	10	15
10% FLAT	29	44
REFLECTS THE OWNER'S POLICY	17	26
DEPENDS ON RELATIONSHIP WITH SUB	10	15
OTHER	0	0
<b>TOTAL</b>	<b>66</b>	<b>100</b>

shown in Table 14. The cost of financing 10 percent retainage is never added by most of the respondents (82%). Only 16% indicated that they do it "sometimes."

**Table 14. Question 14 (Blue) - Frequency of Adding  
Financing Cost of the 10% Retainage into Bid Price**

<b>FINANCING ADDED TO BID</b>	<b>NUMBER OF RESPONSES</b>	<b>% OF TOTAL RESPONSES</b>
NEVER	52	82
ALWAYS	1	2
SOMETIMES	10	16
<b>TOTAL</b>	<b>63</b>	<b>100</b>

### 6.3 The Effects of 10% Retainage and Alternatives

Questions 15 through 20 in the blue questionnaire and 5 through 10 in the ivory questionnaire are identical. These questions were asked of all the groups that were included in the survey. These questions constitute the main body of the survey and hence the research project. Opinions on the effects of the 10% retainage, as it is practiced, were sought from different participants. Their ratings were obtained for some alternatives included in the questionnaire. They were also asked to write in their own suggestions that were not listed. As predicted, responses are heavily influenced by the responding individual's nature of involvement in the construction industry, or in other words, by the group he or she belongs to.

The results of Questions 15-18 (Blue) and 5-8 (Ivory) are presented in the following sections. Each item in the question is analyzed by response figures from six major participating groups as identified from responses to Question 1 and reported in Table 4. These groups are:

- Developers/Builders
- Design/Build Firms
- Architect/Engineers
- General Contractors
- Specialty/Subcontractors
- Public Agency Owners

The combined results of all the items in each question have also been reported on the basis of aggregated responses of contractors' and non-contractors' groups. This was done to point out the differences in

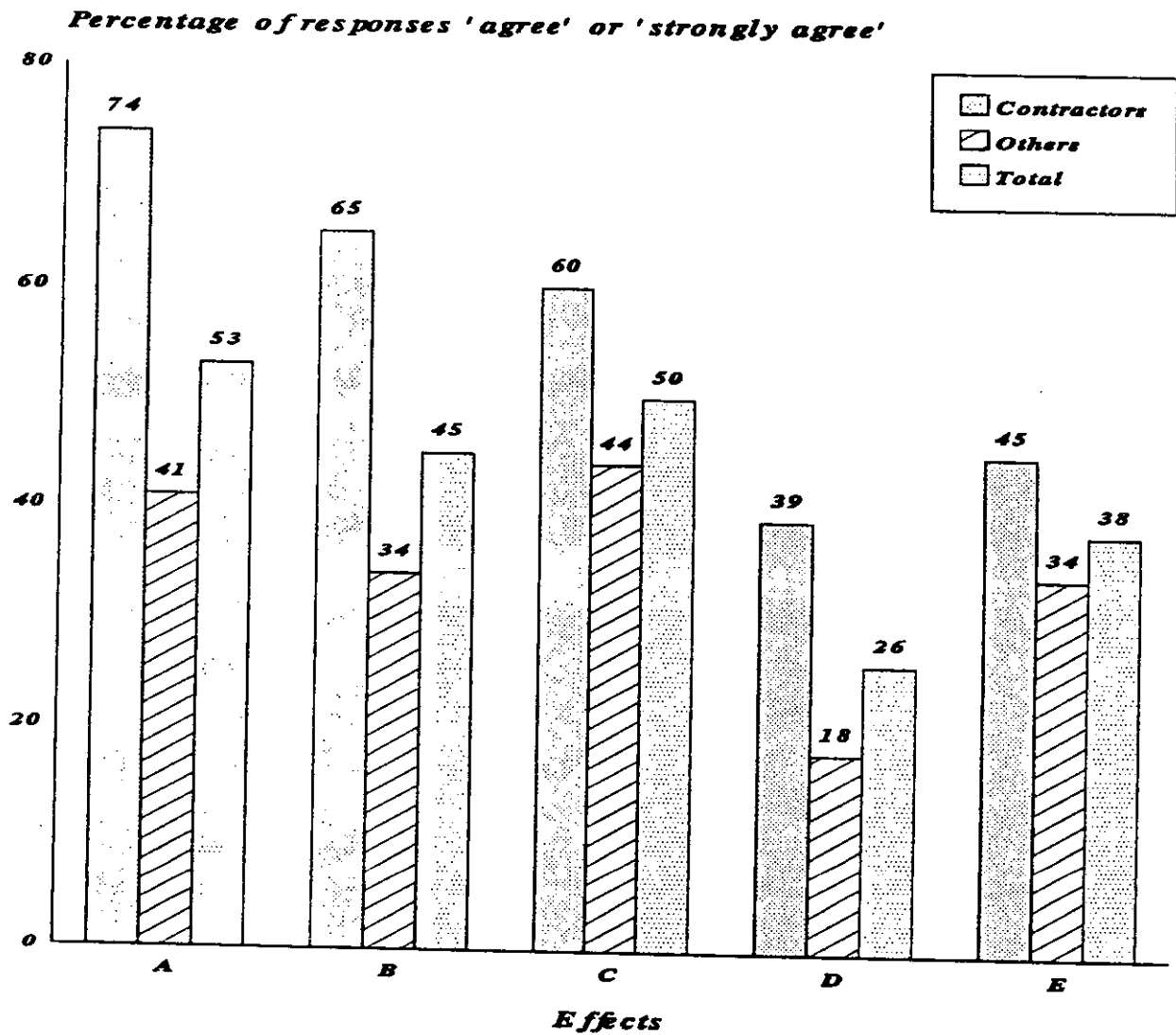
opinions between these two major groups with understandably dissimilar interests.

#### **6.3.1 Major Effects of 10 Percent Retainage**

Five major effects were listed in the questionnaire under Question 15 (Blue) and Question 5 (Ivory). The respondents were asked to use a predefined scale to indicate their degree of agreement (or disagreement) with the statement. They were also asked to write in any other major effect that they felt important but was not listed in the question.

The overall result to this question is summarized in *Figure 6*. The responses are grouped in three ways: contractors, non-contractors and total. 74% of the contractors (including builder/developers) either agree or strongly agree that 10 percent retainage cuts into profit. Only 41% of the non-contractors believe the same way. A majority of the non-contractors (44%) believe that 10 percent retainage forces contractors to finance the retainage. 60% of the contractors agree or strongly agree with this. A considerable part (45% contractors and 34 % others) from both groups agree or strongly agree that 10 percent retainage prevents contractors from investment opportunities. In general, it can be concluded from *Figure 6* that 10 percent retainage is widely believed to having adverse effects in the construction industry. Responses by six major groups to each of the items of this question are presented in the following subsections.

**Question 15(Blue) & 5(Ivory)**  
**Major Effects of 10% Retainage**



- A Cuts into profit
- B Restrains cash management
- C Forces to finance retainage
- D Prevents from bidding more work
- E Prevents from investment opportunities

**FIGURE 6**

#### **6.3.1.1 Retainage Cuts into the Already Marginal Profit Margin**

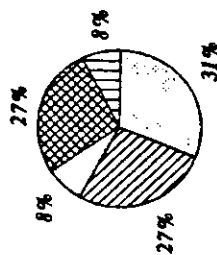
Figure 7 shows the responses. A considerable number of all six groups, except the public agency owners strongly agree with the statement that 10 percent retainage cuts into already marginal profit margin. 60% of public agency owners disagree or strongly disagree with the statement. It should also be noted that 53% of architect/engineers disagree or strongly disagree with the statement. Design/build firms, on the other hand, responded very much like the contractors and subcontractors. 88% of contractors, 94% of subcontractors and 91% of design/build firms agree or strongly agree with the stated effect of retainage.

#### **6.3.1.2 Retainage Restraints Proper Cash Management**

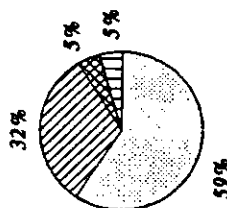
Responses are summarized in Figure 8. Design/build firms, Contractors, and subcontractors overwhelmingly believe that the practice of 10 percent retainage system restrains proper cash management. 86% of design/build firms, 80% of contractors, and 94% of subcontractors either agree or strongly agree with the statement. On the other hand, 68% of architect/engineers and 63% of public agency owners either disagree or strongly disagree with the stated effect of retainage. Developers/builders are almost equally split on this issue. 52% of them agree or strongly agree and 40% of them disagree or strongly disagree with the statement.



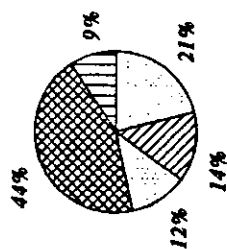
**Question 15A(Blue) & 5A(Ivory)**  
***Cuts into already marginal profit***



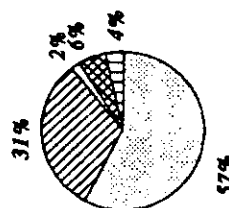
**Developer/Builder  
Respondents: 26**



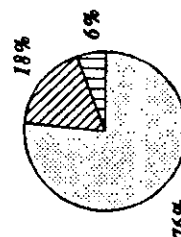
**Design/Build firms  
Respondents: 22**



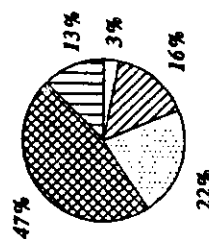
**Architect/Engineer  
Respondents: 43**



**General Contractors  
Respondents: 54**



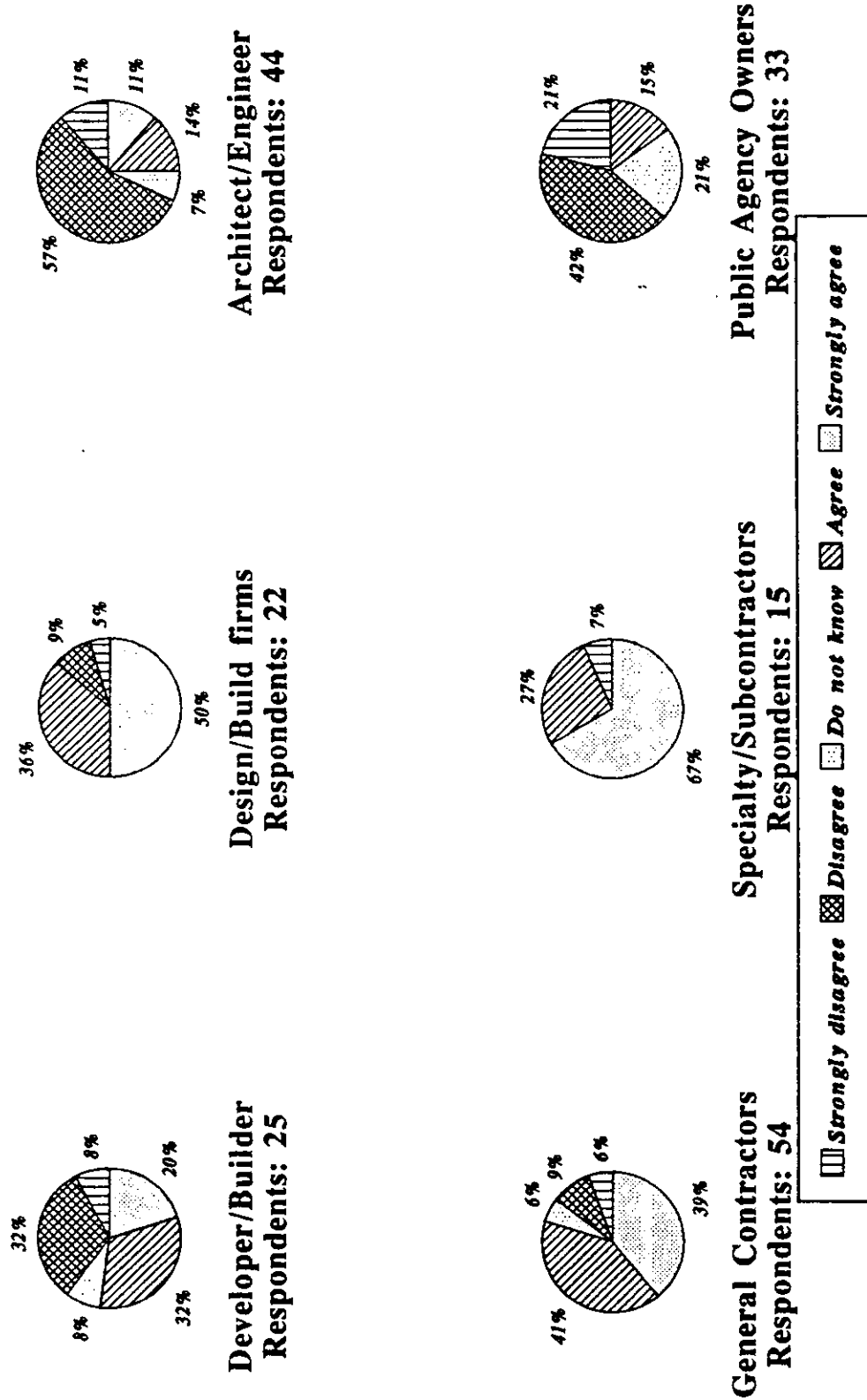
**Specialty/Subcontractors  
Respondents: 17**



**Public Agency Owners  
Respondents: 32**

☐ Strongly disagree  
 ☐ Disagree  
 ☐ Do not know  
 ☐ Agree  
 ☐ Strongly agree

*Question 15B(Blue) & 5B(Ivory)*  
***Restrains proper cash management***



**FIGURE 8**

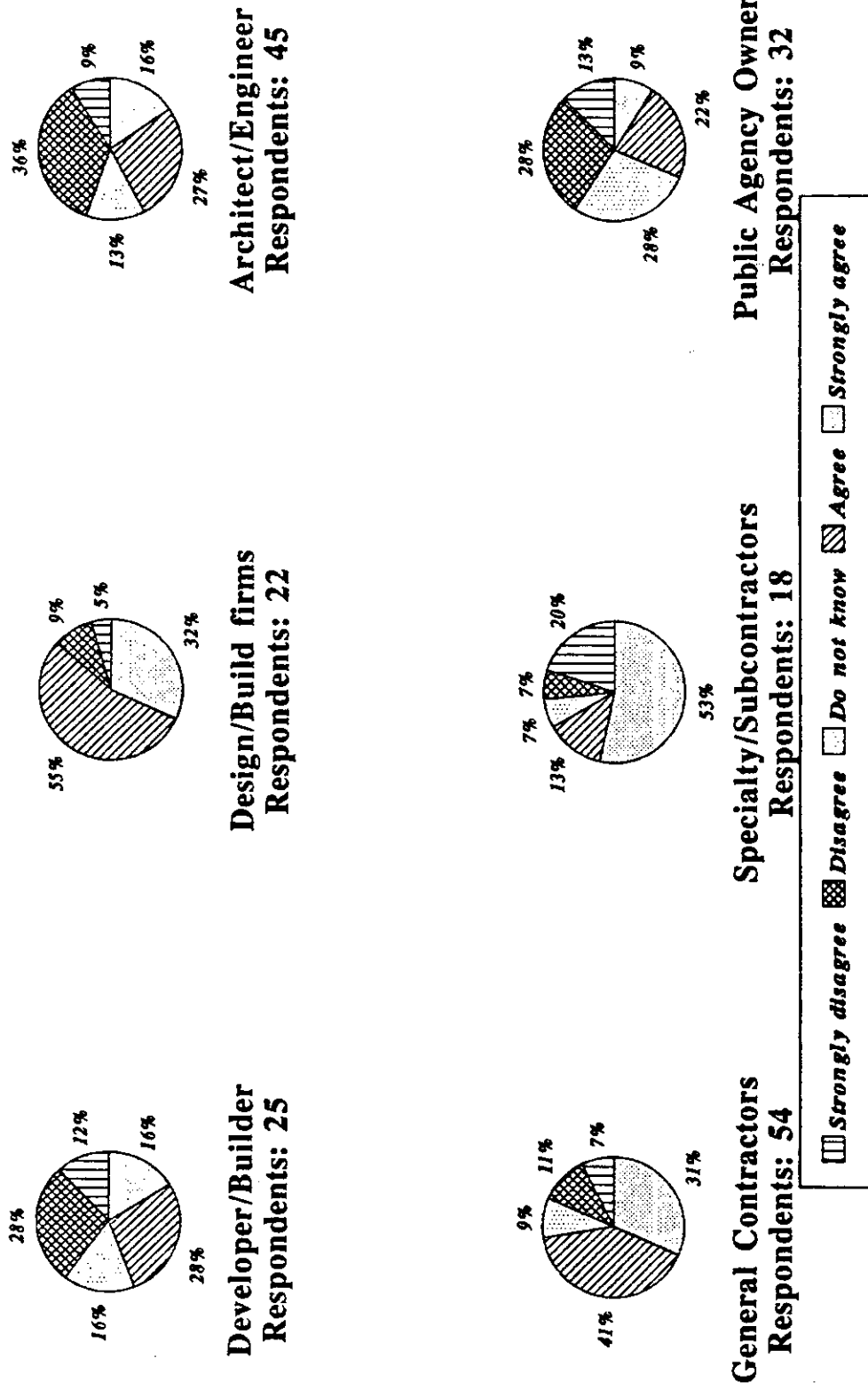
#### **6.3.1.3 Current Practice Forces Contractors to Finance Retainage**

Figure 9 shows the responses of six groups to this effect of retainage. 87% of design/build firms, 72% of contractors, and 66% of subcontractors agree or strongly agree with this statement. It should be noted that many contractors (18%) and subcontractors (27%) indicated disagreement or strong disagreement. Financing of retainage amount is perhaps not a realistic solution to the problems caused by retainage. It is also important to note that developer/builders, architect/engineers, and public agency owners, are almost equally split on this issue. 44% of the developer/builder respondents either agree or strongly agree and 40% disagree or strongly disagree. 43% of architect/engineers indicated that they agree or strongly agree and 45% of them disagree or strongly disagree. 31% of public agency owners indicated either agreement or strong agreement and 41% of them indicated disagreement or strong disagreement.

#### **6.3.1.4 Retainage Prevents Contractors from Bidding More Work**

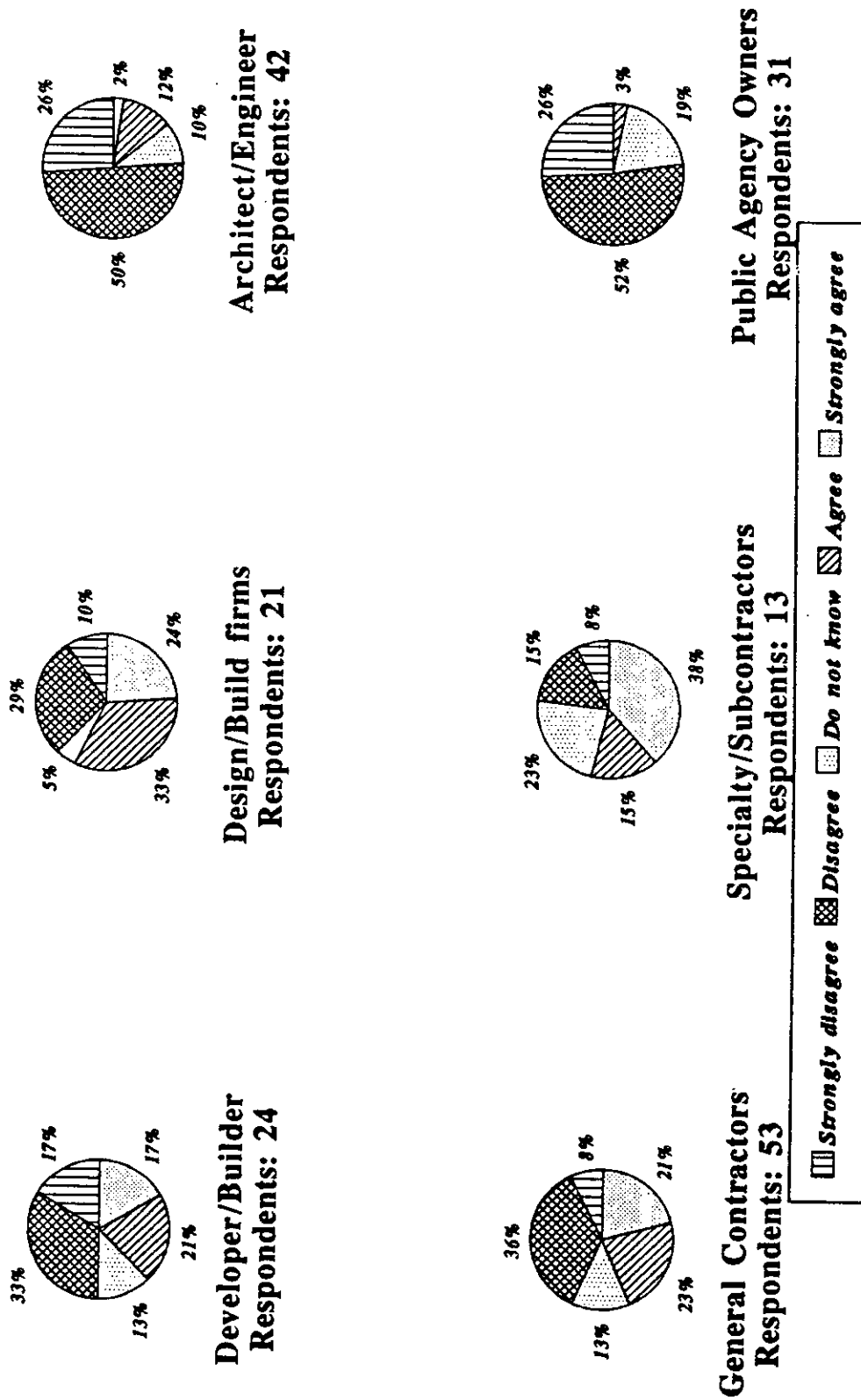
As illustrated in Figure 10, large percentage of contractors (44%) indicated disagreement or strong disagreement with this statement; although a similar number (44%) also indicated that they agree or strongly agree. More of the subcontractors are in agreement (53%) with this effect than in disagreement (23%). 50% of developer/builders and 39% of design/build firms indicated disagreement or strong disagreement, whereas, 38% of developer/builders and 57% of design/build firms

*Question 15C(Blue) & 5C(Ivory)*  
*Forces contractor to finance retainage*



**FIGURE 9**

*Question 15D(Blue) & 5D(Ivory)*  
*Prevents contractors from bidding more work*



**FIGURE 10**

either agreed or strongly agreed. Responses from architect/engineers and public agency owners are very similar. 76% of the former group and 78% of the latter group indicated either disagreement or strong disagreement.

#### **6.3.1.5 Retainage Prevents Contractors from Investment Opportunities**

Majority of the responding contractors (54%), design/build firms (57%), and subcontractors (84%) either agreed or strongly agreed with this stated effect, as shown in *Figure 11*. Only 23% of the contractors and 24% of design/build firms indicated disagreement or strong disagreement. Developer/builders are almost equally split in their responses to this issue. 38% of them agree or strongly agree whereas 34% disagree or strongly disagree. Responses from architect/engineers and public agency owners are very similar. 26% of architect/engineers agree or strongly agree and 48% disagree or strongly disagree. 22% of public agency owners agree or strongly agree and 50% disagree or strongly disagree.

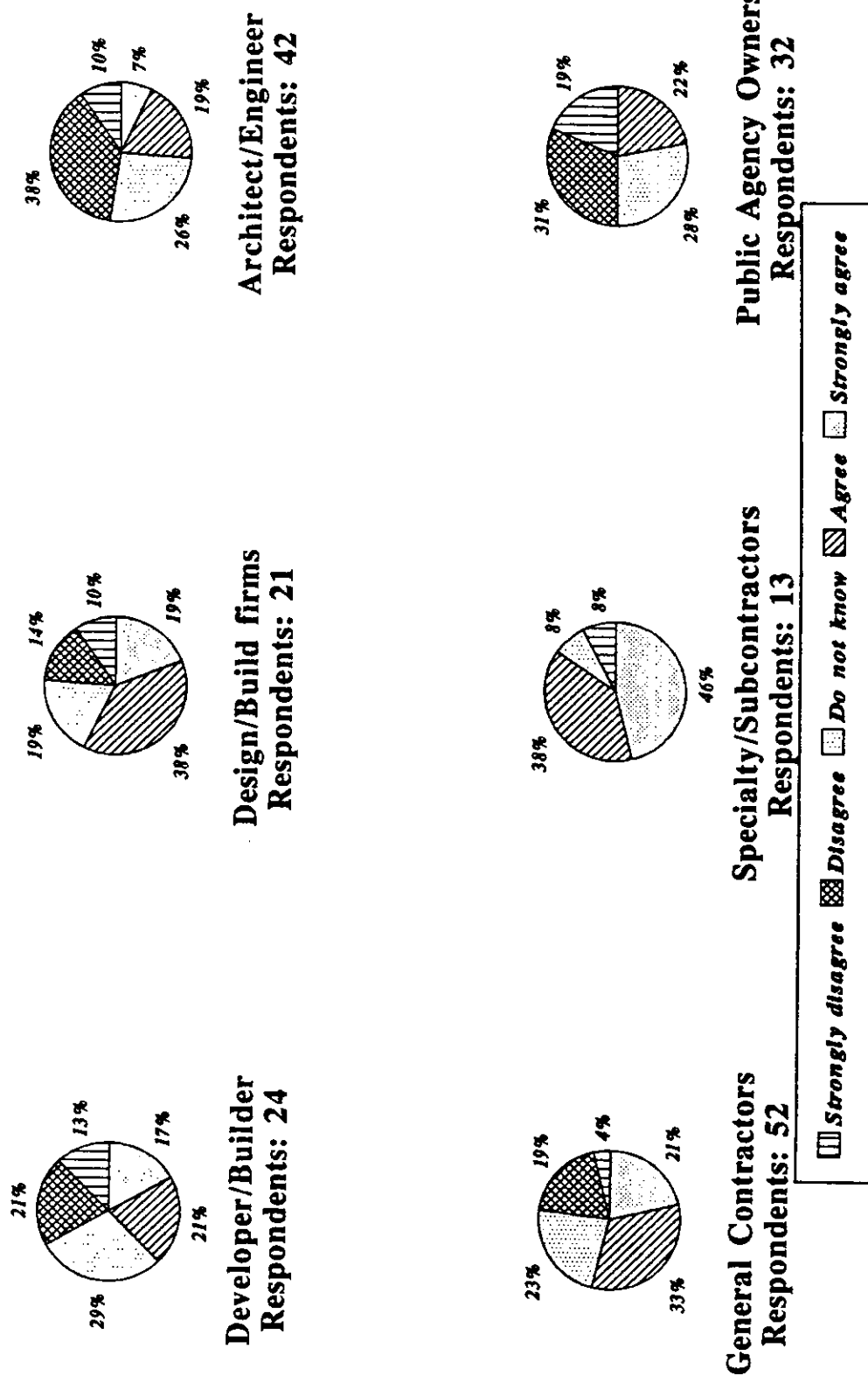
#### **6.3.1.6 Other effects of Retainage as Stated by the Respondents**

Following is a list of effects stated by some of the respondents:

"Mainly hurts cash flow."

"Forces subcontractors to finance amount, not general contractors."

*Question 15E(Blue) & 5E(Ivory)*  
***Prevents contractors from investment opportunities***



**FIGURE 11**

"Requires smaller operators to finance through lending institution."

"Forces contractor and subs, in Florida especially, to 100% finish a project and if he walks, enough money left to finish job and make repairs."

"Encourages contractor to complete punch list and submit required closeout documents."

"Gives owner more authority to acquire quality work."

"Causes contractor to pay all suppliers and subcontractors before he receives his money - owner has free use of money - contractor has to use his own money to finish project."

"Not fair."

"Affects smaller contractors the most."

"Hurts small, less viable subcontractors."

"Bond cost are minimized and/or held down, with other factors being sound."

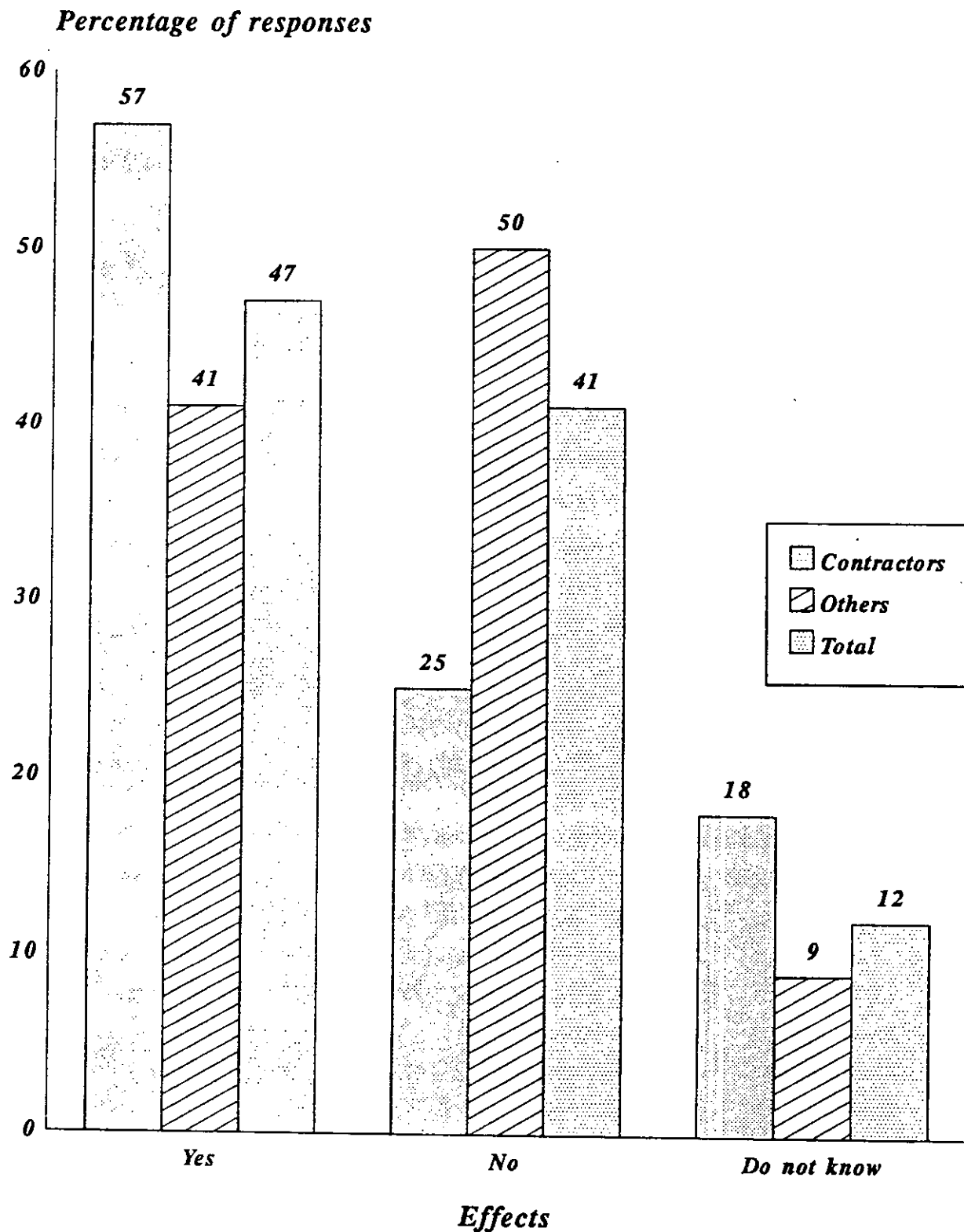
"Protects the owner from unpaid bills."

**6.3.2 Are There Other Measures that Serve the Same Purpose as 10% Retainage?**

This was asked in Question 16 (Blue) and 6 (Ivory). Results are reported in *Figure 12* and *Figure 13*. Both show the percentages responding yes, no or do not know. *Figure 12* shows contractors' responses against others. Predictably, more contractors (57%) responded with "yes" than non-contractors (41%). 50% of non-contractors said "no" as against 25% of contractors. Evidently, most of the contractors believe that there are duplicative protection for the owners through bonding and other means. *Figure 13* summarizes the responses of all six



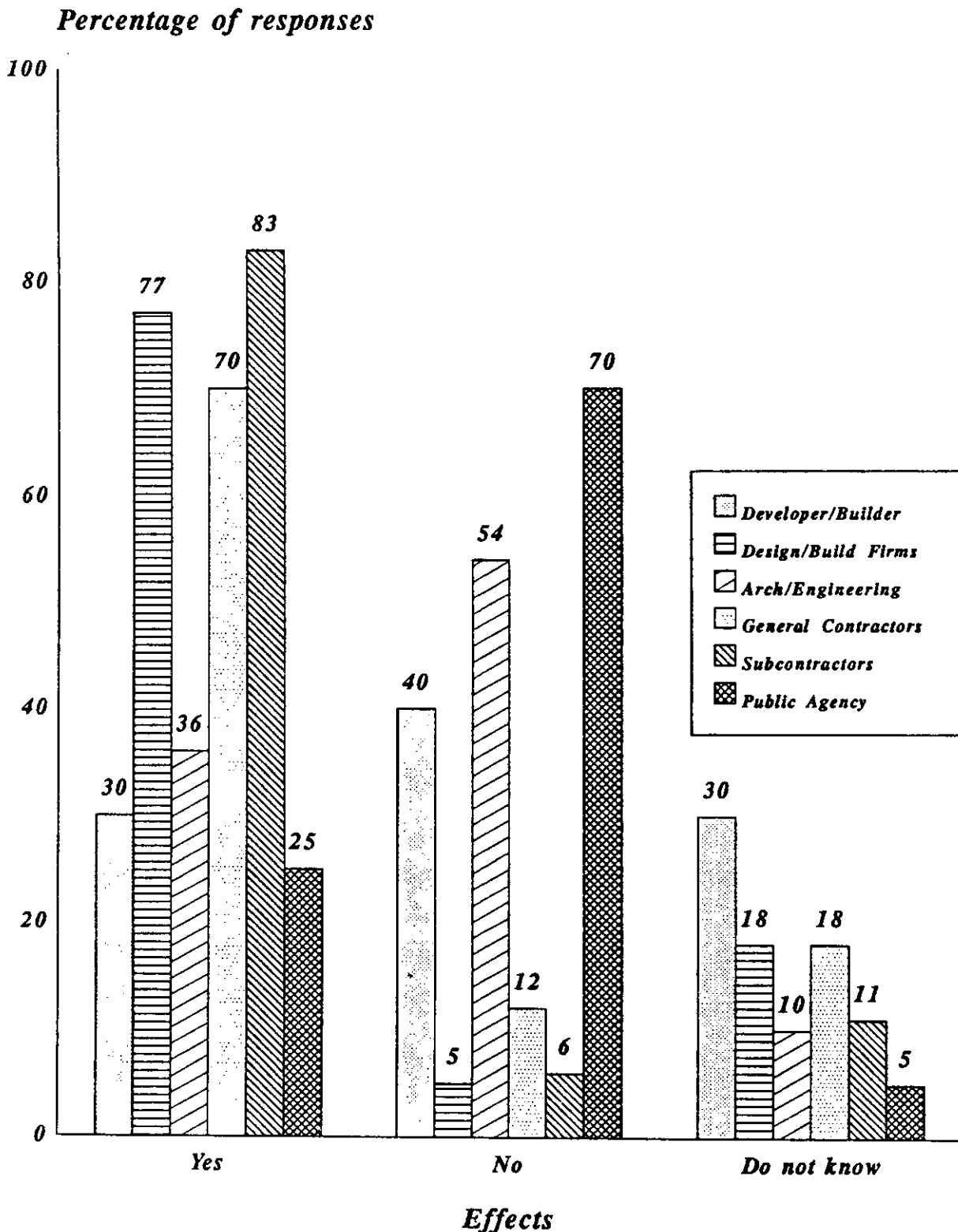
*Question 16(Blue) & 6(Ivory)*  
***Other Measures Serve the Same Purpose as 10% Retainage***



**FIGURE 12**

Question 16(Blue) & 6(Ivory)

*Other Measures Serve the Same Purpose as 10% Retainage*



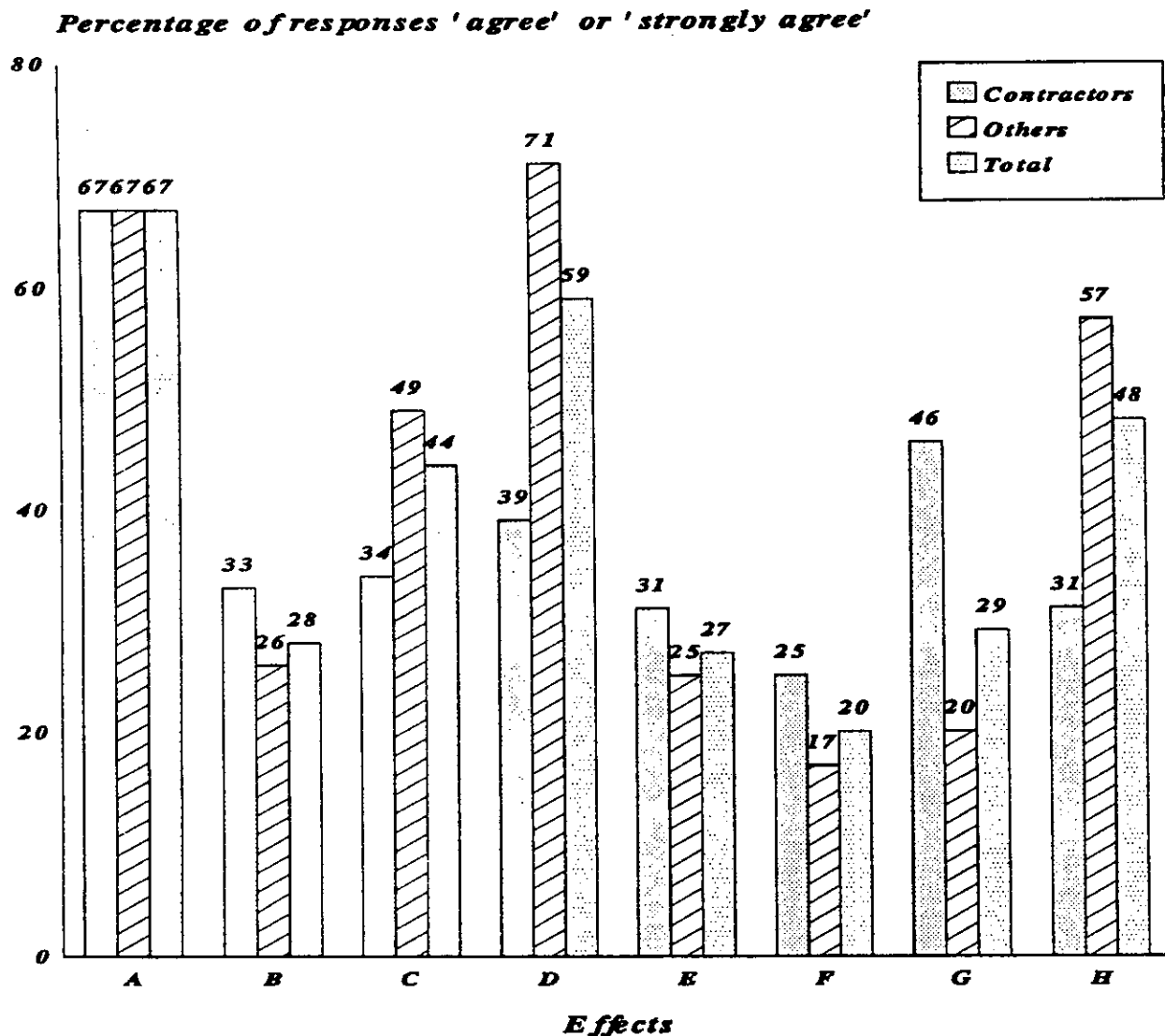
**FIGURE 13**

groups. Overwhelming majority of subcontractors (83%), design/build firms (77%), and general contractors (70%) agree that there are other measures that serve the same purpose as 10 percent retainage. It should be noted that 70% of public agency owners and 54% of architect/engineers responded "no" to this question.

### **6.3.3      How Revision of Retainage Policy Will Affect Practices in the Industry**

In Question 17 (Blue) and 7 (Ivory) respondents were asked to indicate their degree of agreement to stated practices as affected by the retainage policy. Responses (only agreement or strong agreement) of contractors and non-contractors are summarized in *Figure 14*. The total of all responses are also indicated in the figure. It is equally believed by contractors (67%) and non-contractors (67%) that general contractors front-load projects due to 10 percent retainage. The obvious implication is that this tendency will decrease if retainage policy is revised. 71% of the non-contractor respondents either agree or strongly agree that 10 percent retainage protects the owners, whereas only 39% of contractors feel the same way. In other words, the difference of opinion is big on the issue of owners' protection by retainage. 57% of responding non-contractors believe that revision of retainage policy will not make things any better. In total eight possible effects were listed in this question. Responses of all six groups to each of these effects are presented below.

**Question 17(Blue) & 7(Ivory)**  
***How revision of retainage policy will or will not affect***



- A Due to retainage GC front load projects
- B Due to retainage GC increase change orders
- C GC squeeze subcontractors
- D 10% retainage protects the owners
- E Quality will improve if 10% retainage is removed or revised
- F Bankruptcies will decrease if 10% retainage is removed or revised
- G Relationship between contractors and other groups will improve if 10% retainage is removed or revised
- H Revision of retainage policy will not make things better

**FIGURE 14**

#### **6.3.3.1 Front-Loading by the Contractors.**

As shown in *Figure 15*, almost all the respondents agree to some extent that due to retainage, contractors do front-load construction projects. Distribution of responses by all six groups is pretty much the same, about 20% in each group disagree.

#### **6.3.3.2 Contractors Increase Change Orders to Offset Retainage.**

*Figure 16* shows the responses. 55% of the general contractors disagree or strongly disagree with this statement. Only 28% of them believe that it might be true. Majority of the architect/engineers (59%) and public agency owners (55%) either disagree or strongly disagree that the number of change orders is a function of 10 percent retainage.

#### **6.3.3.3 General Contractors "Squeeze" Subcontractors Due to Retainage.**

Responses are summarized in *Figure 17*. 83% of the subcontractors who responded indicated agreement or strong agreement with this statement. 50% of the responding contractors disagreed or strongly disagreed. It is obvious that subcontractors feel revision of retainage will be beneficial for them.

#### **6.3.3.4 10% Retainage Protects Owners**

87% of the responding public agency owners and 87% of the architect/engineers either agree or strongly agree that owners are protected by the use of 10 percent

Question 17A(Blue) & 7A(Ivory)  
Contractors front-load due to 10% retainage

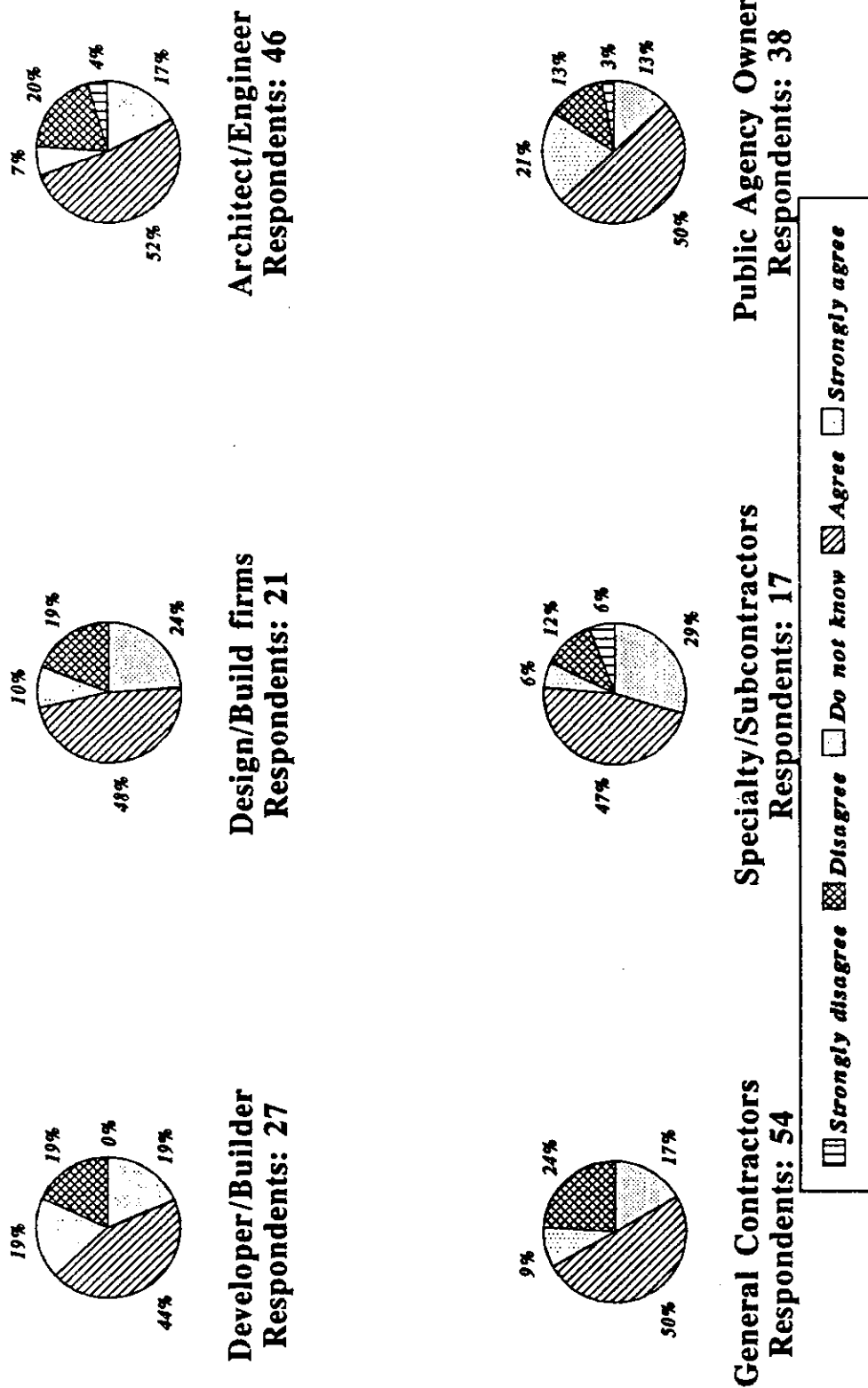
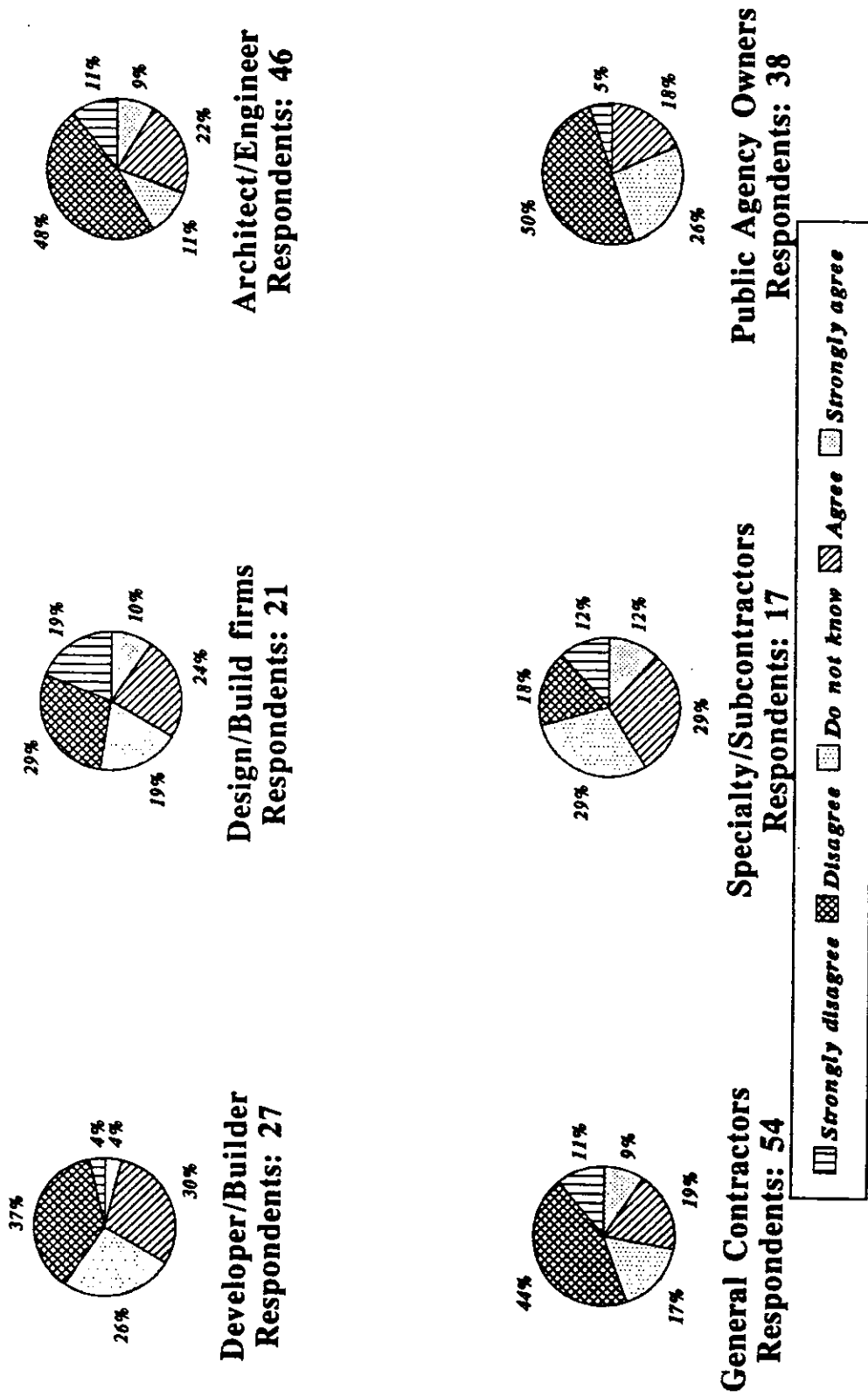


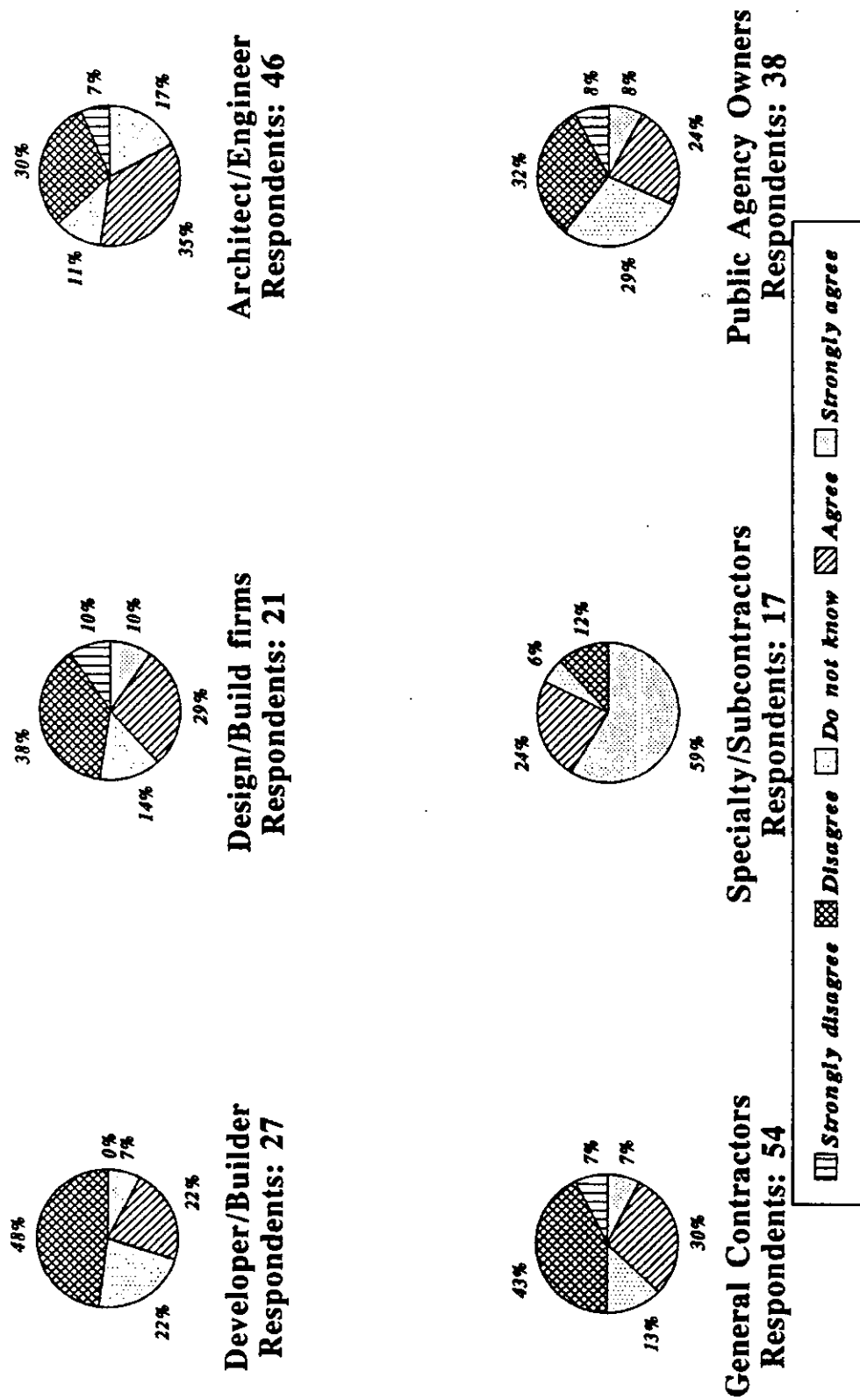
FIGURE 15

*Question 17B(Blue) & 7B(Ivory)*  
**Contractors increase change orders to offset retainage**



**FIGURE 16**

*Question 17C(Blue) & 7C(Ivory)*  
**GCs' "squeeze" subcontractors due to retainage**



**FIGURE 17**



retainage policy (*Figure 18*). 65% of general contractors, 55% of design/build firms, and an overwhelming 78% of subcontractors either disagree or strongly disagree with the statement.

**6.3.3.5 Quality Will Improve if 10% Retainage Policy is Revised**

Most of the respondents from all groups indicated their disagreement that quality of construction will improve with revision or removal of retainage policy. Results are shown in *Figure 19*. However, 36% of the contractors and 61% of the subcontractors thought it probably will.

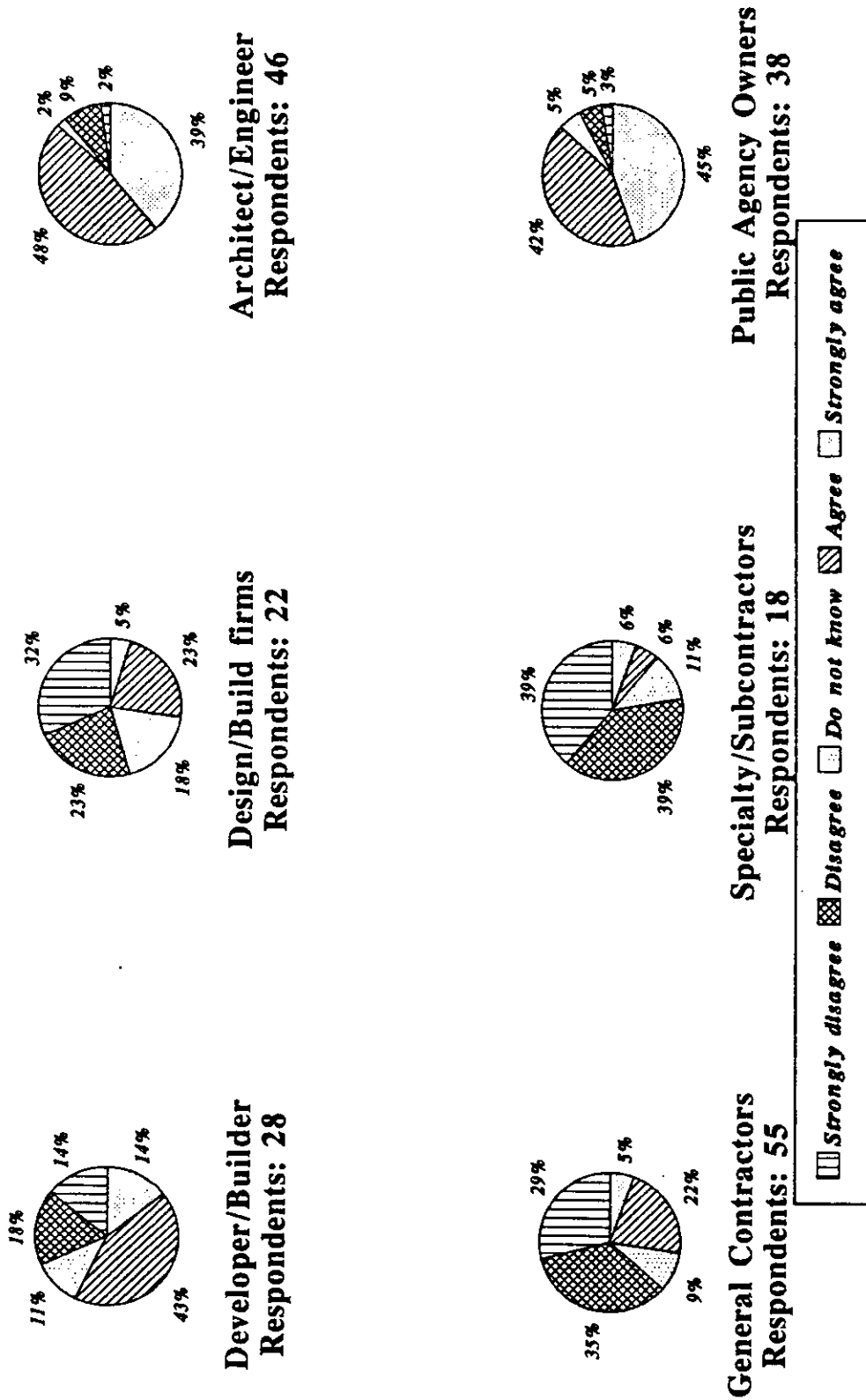
**6.3.3.6 Bankruptcies Will Decrease if 10% Retainage is Removed or Revised**

Again, most of the respondents did not find any correlation between contractor bankruptcies and retainage. Most of those who indicated agreement or strong agreement are contractors (32%) and subcontractors (48%). The response data is summarized in *Figure 20*.

**6.3.3.7 Relationship Between Contractors, Owners and Architects Will Improve if Retainage is Revised**

*Figure 21* shows the responses of the six groups to this statement. 59% of the contractors and 57% of the design/build firms think that it will (indicated that they agree or strongly agree). 69% of the architect/engineers and 82% of the public agency owners think that it will not (indicated by disagreement or strong disagreement).

*Question 17D(Blue) & 7D(Ivory)*  
**10% retainage serves its purpose by protecting owners**



**FIGURE 18**

Question 17E(Blue) & 7E(Ivory)  
*Quality will improve if retainage is removed or revised in favor of contractors*

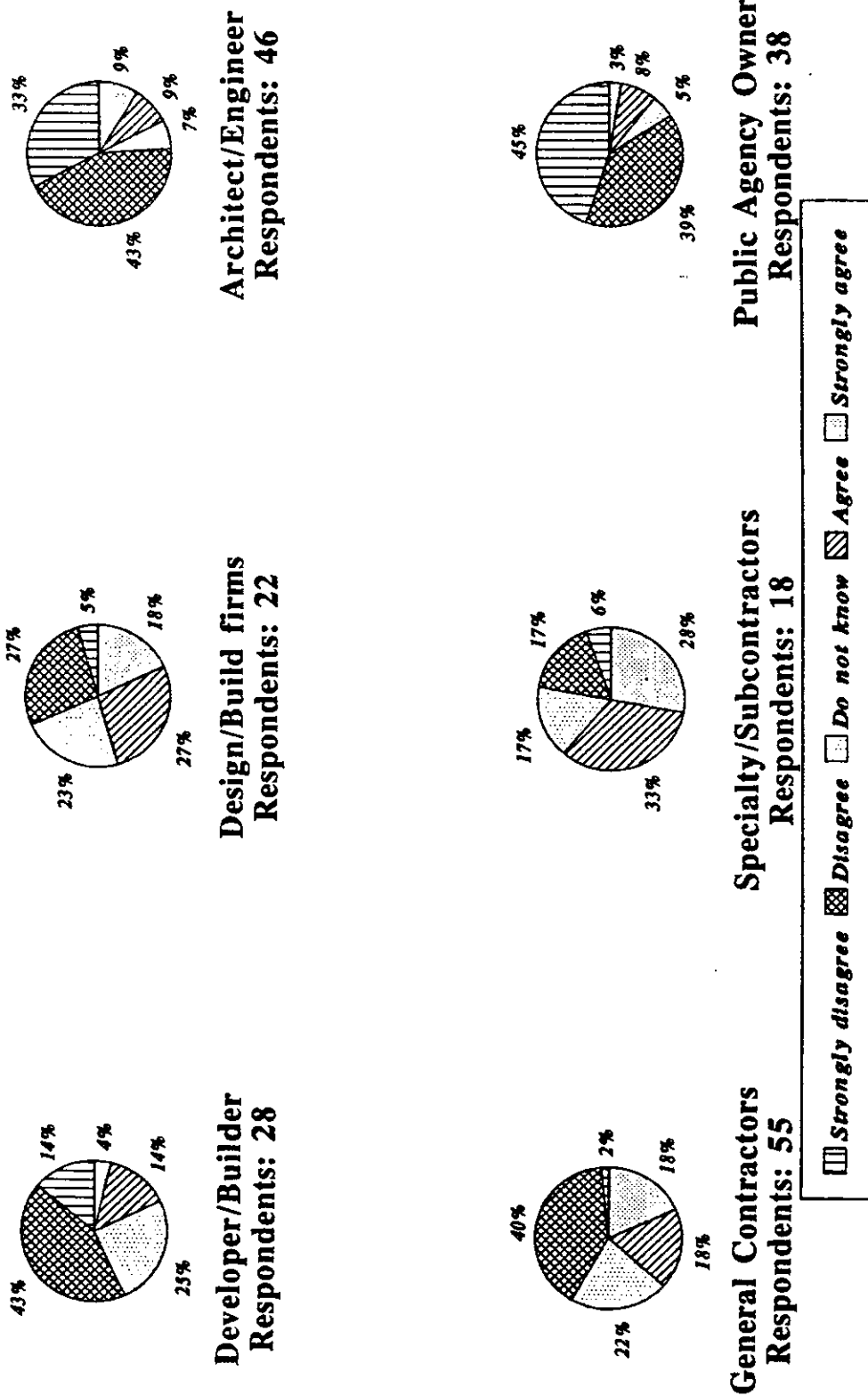
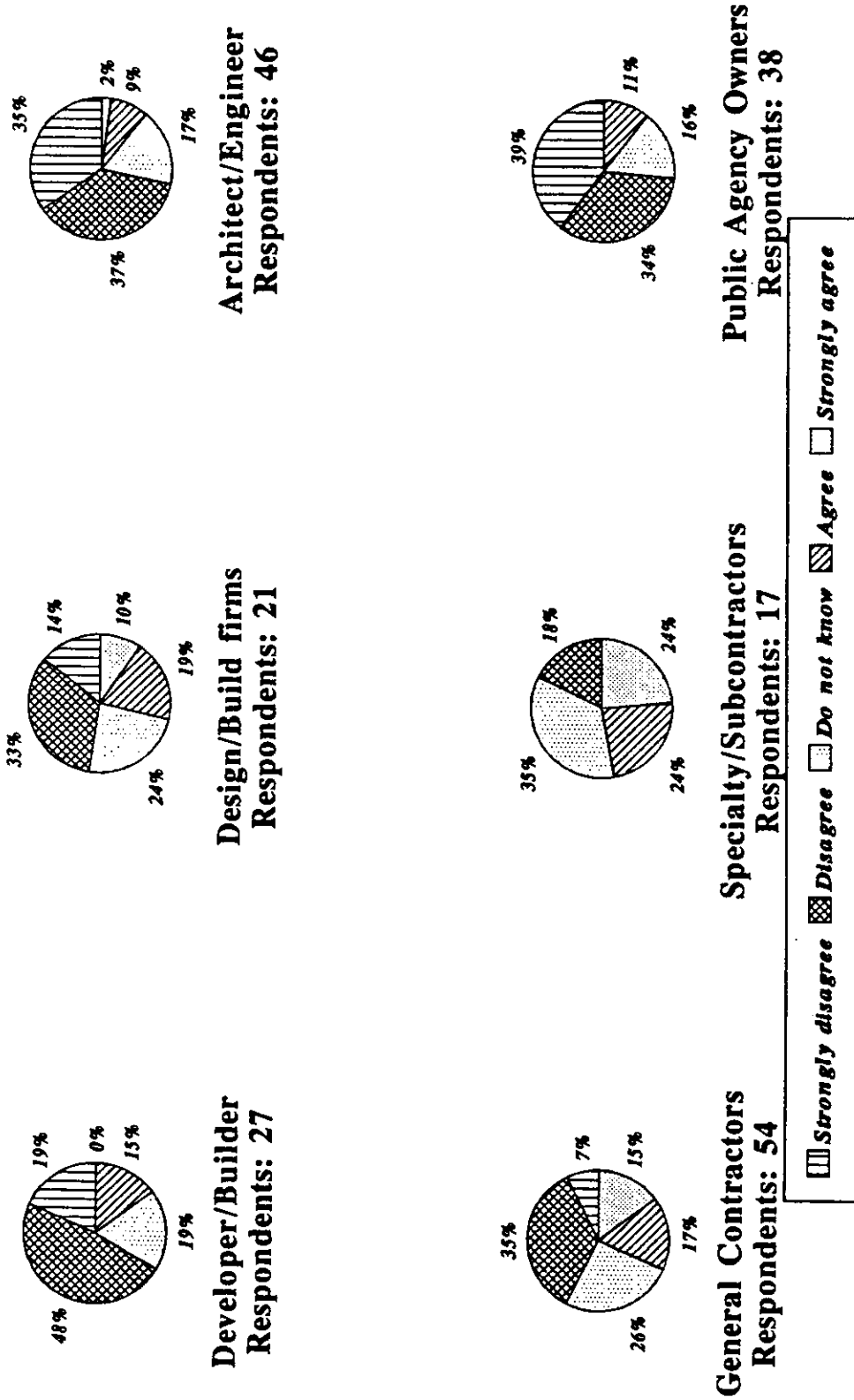


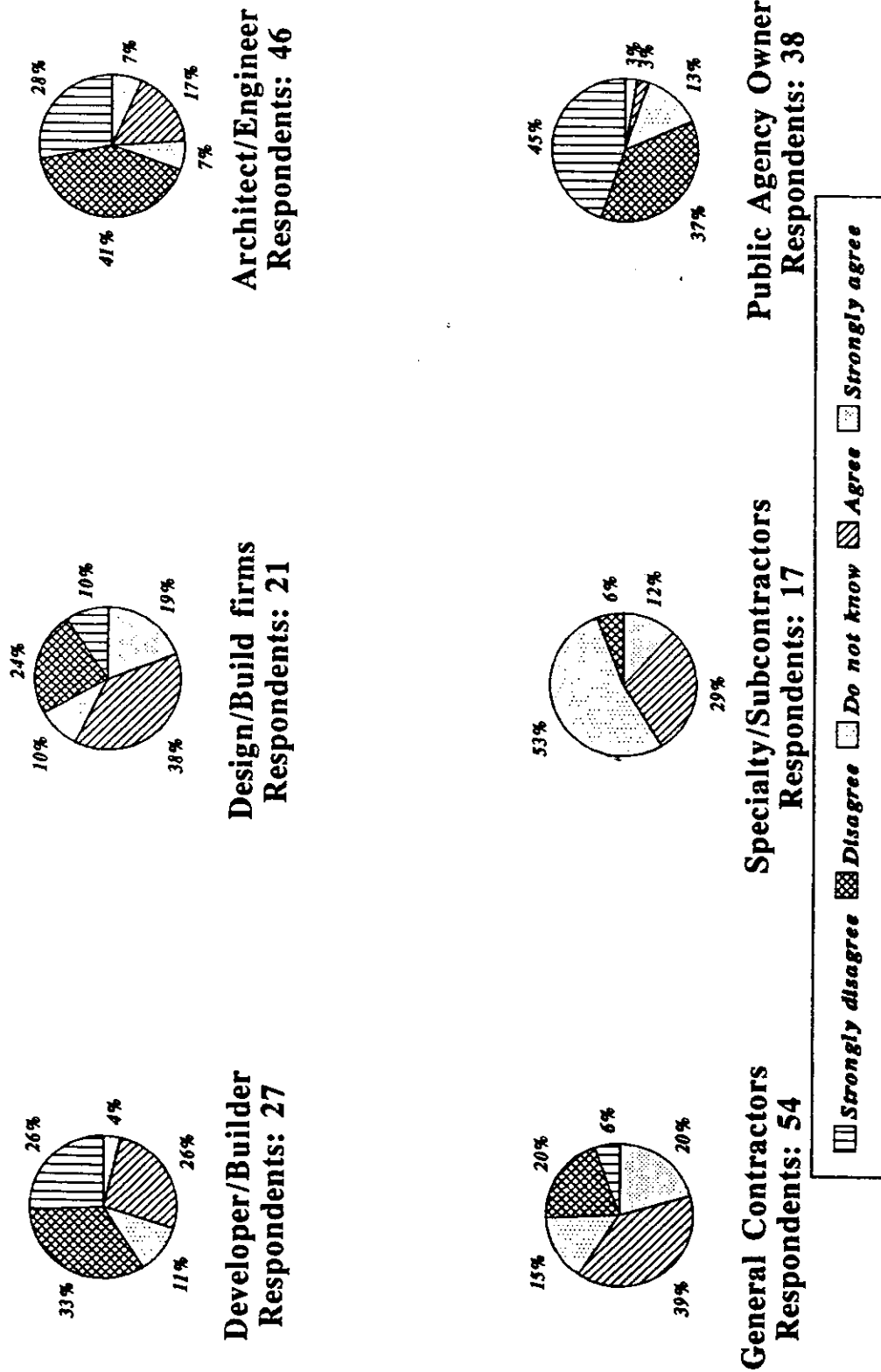
FIGURE 19

*Question 17F(Blue) & 7F(Ivory)*  
**Bankruptcies will decrease if retainage is removed or revised**



**FIGURE 20**

**Question 17G(Blue) & 7G(Ivory)**  
***Relationship between contractors, owners and architects will improve if retainage is revised***



**FIGURE 21**

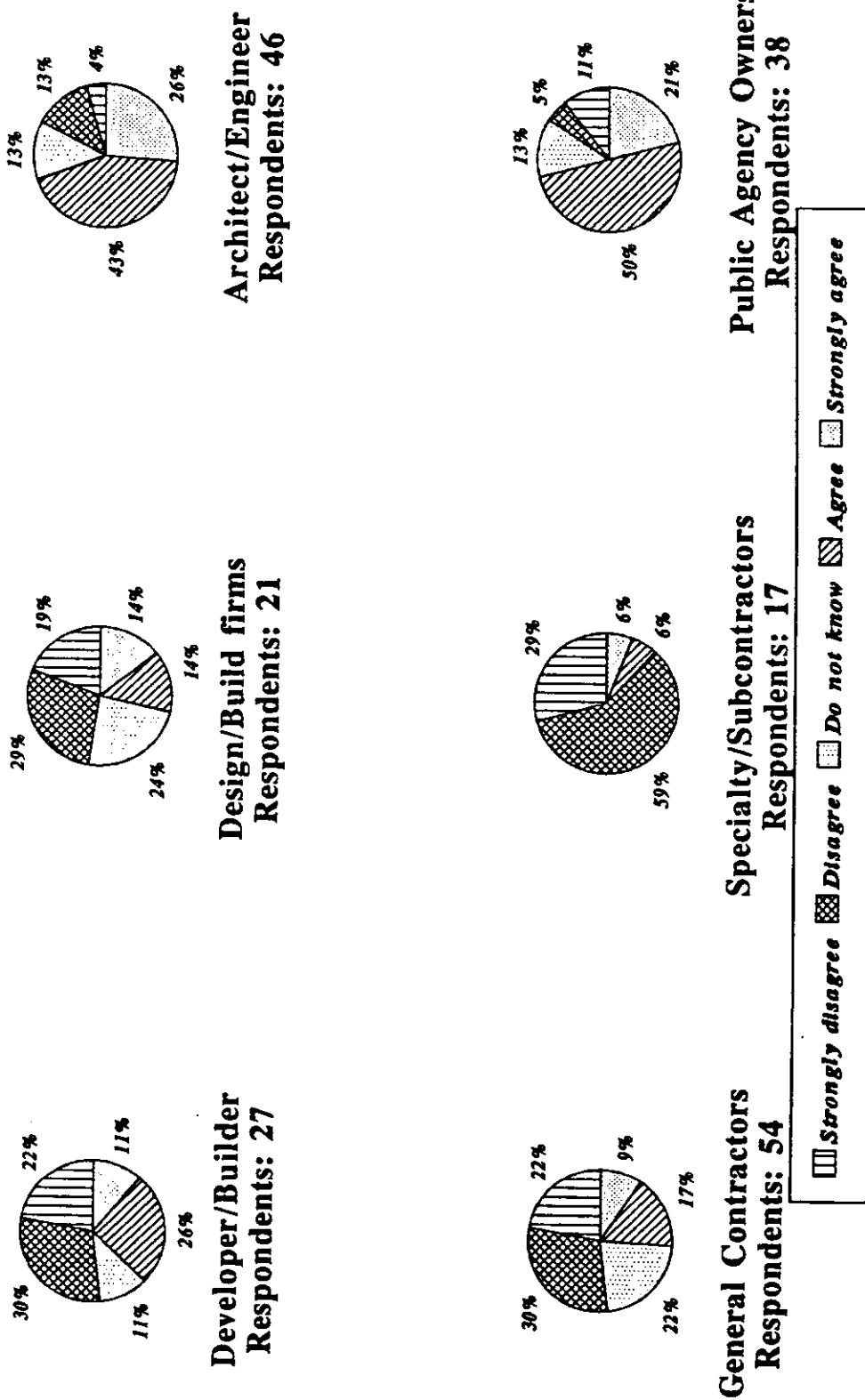
#### 6.3.3.8 Revision or Removal of Retainage will not Improve Anything

52% of responding general contractors and 88% of the subcontractors disagree or strongly disagree with this statement. 69% of the architect/engineers and 71% of the public agency owners, however, indicated agreement or strong agreement with the statement. *Figure 22* shows the data. The tremendous differences of opinion among various groups on the issue of retainage are once again reflected by the responses to this question.

#### 6.3.4 Alternatives to 10% Retainage

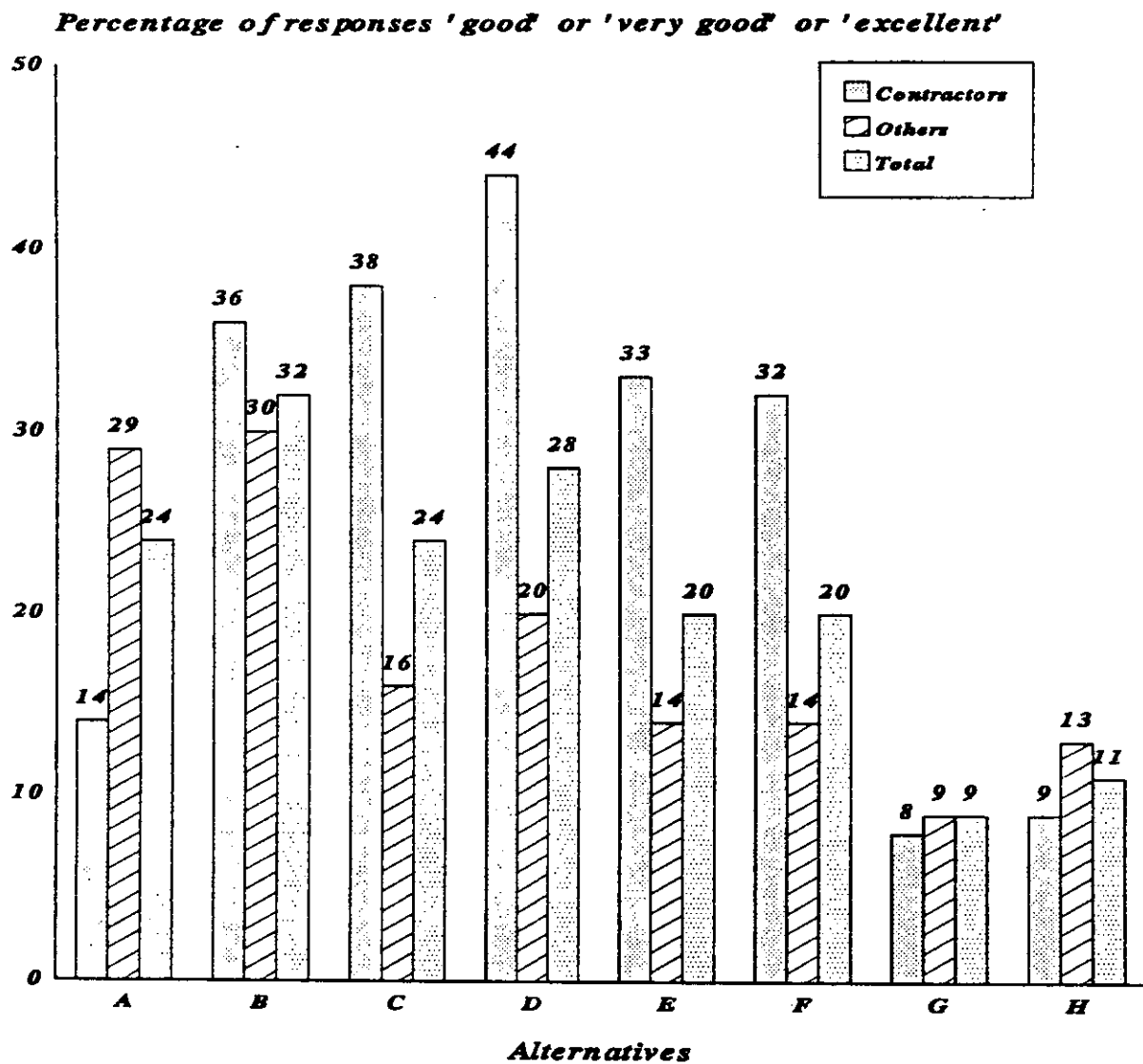
Eight potential alternatives were listed in Question 18 (Blue) and 8 (ivory). These lists of alternatives were compiled from literature on construction contracts and from the input of experienced individuals. In addition, respondents were also encouraged to suggest any other alternative(s) that they consider good. Respondents were asked to use a predefined scale (poor to excellent) to grade the stated alternatives. *Figure 23* summarizes the results by contractors, non-contractors and combined responses. The chart shows the rating (good, very good, and excellent) of each alternative. The alternative, most favored by the contractors (44%) is "retain 10% until 50% complete and none thereafter." This alternative obtained favorable response from only 20% of the non-contractors. The alternative that received highest score (32%) from combined group is "deposit retainage to an interest bearing account." This was also the most favored alternative by the non-contractors group (30%). 36% of the contractors thought

*Question 17H(Blue) & 7H(Ivory)*  
**Revision or removal of retainage will not improve anything**



**FIGURE 22**

**Question 18(Blue) & 8(Ivory)**  
**Alternatives to 10% retainage**



- A No Change needed
- B Deposit retainage to an interest bearing escrow account
- C Reduce retainage to 5% or other realistic rate
- D Retain 10% until 50% complete and none thereafter
- E For jobs 1 year or longer release retainage periodically
- F Eliminate all retainage
- G Eliminate retainage but require a letter of credit from GC
- H Increase bonding requirement and eliminate retainage

**FIGURE 23**



it was a good, very good, or excellent alternative. It should be noted that this is a provision that can be used with any other alternative of retainage. Responses obtained on this item indicate that most people feel it is fair to pay interest on retainage to contractors. Contractors and non-contractors differed widely on the alternative "Reduce retainage to 5% or other realistic rate." 38% of contractors vs. only 16% of non-contractors thought it was either good, very good, or excellent alternative. Similar responses were indicated to the alternative, "Eliminate all retainage." It is interesting to note that "No change needed" received favorable response from 29% of the non-contractor respondents and 14% of the responding contractors. Responses of all six groups on each of the alternatives are discussed in the following subsections.

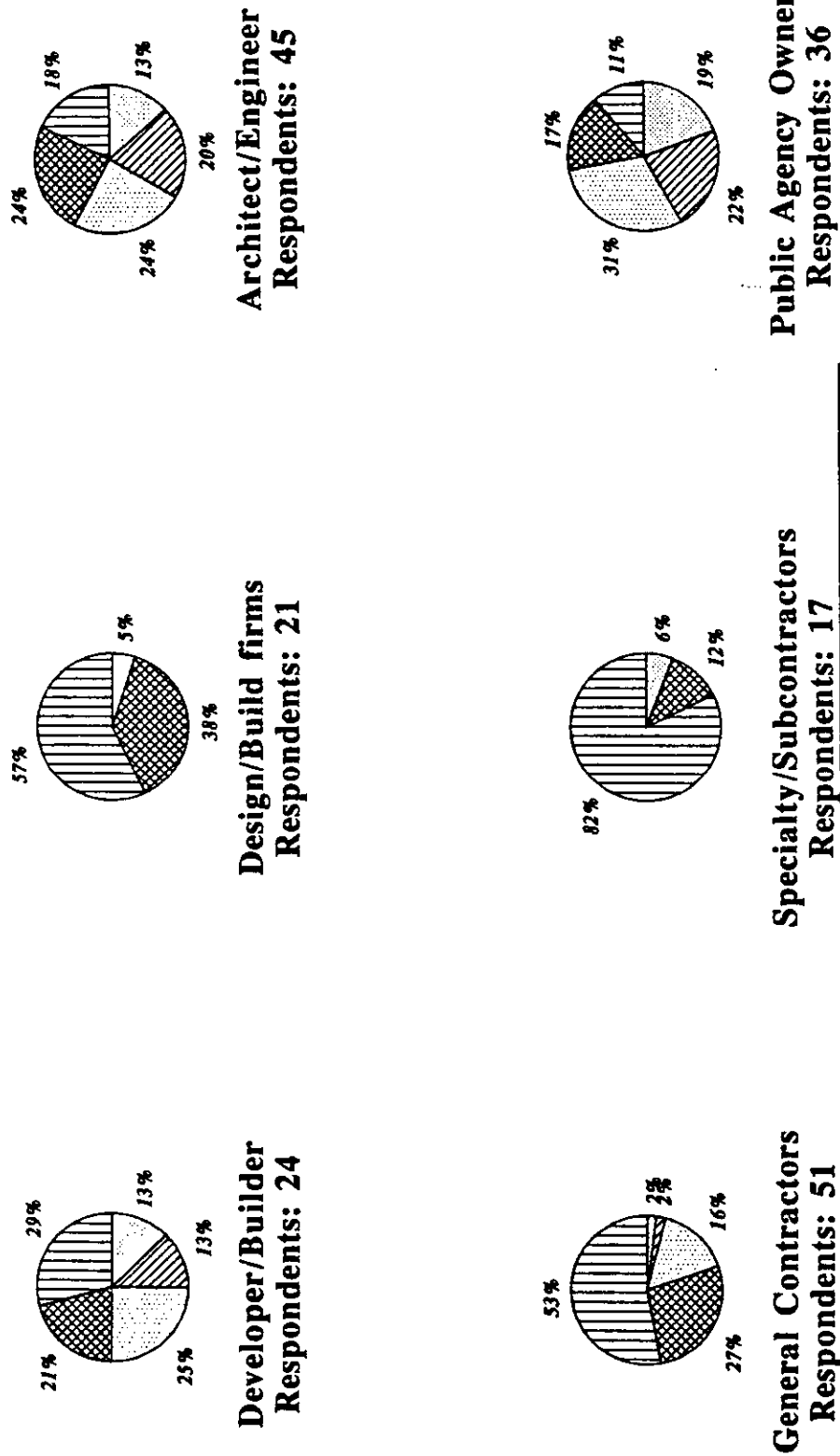
#### **6.3.4.1 No Change is Necessary**

This was considered a poor choice by 53% of the general contractors, and 57% of the design/build firms and 82% of the subcontractors as shown in Figure 24. It was thought excellent or very good or good by 57% of the architect/engineers and 72% of the public agency owners.

#### **6.3.4.2 Retainage Should be Deposited in Interest Bearing Escrow Account**

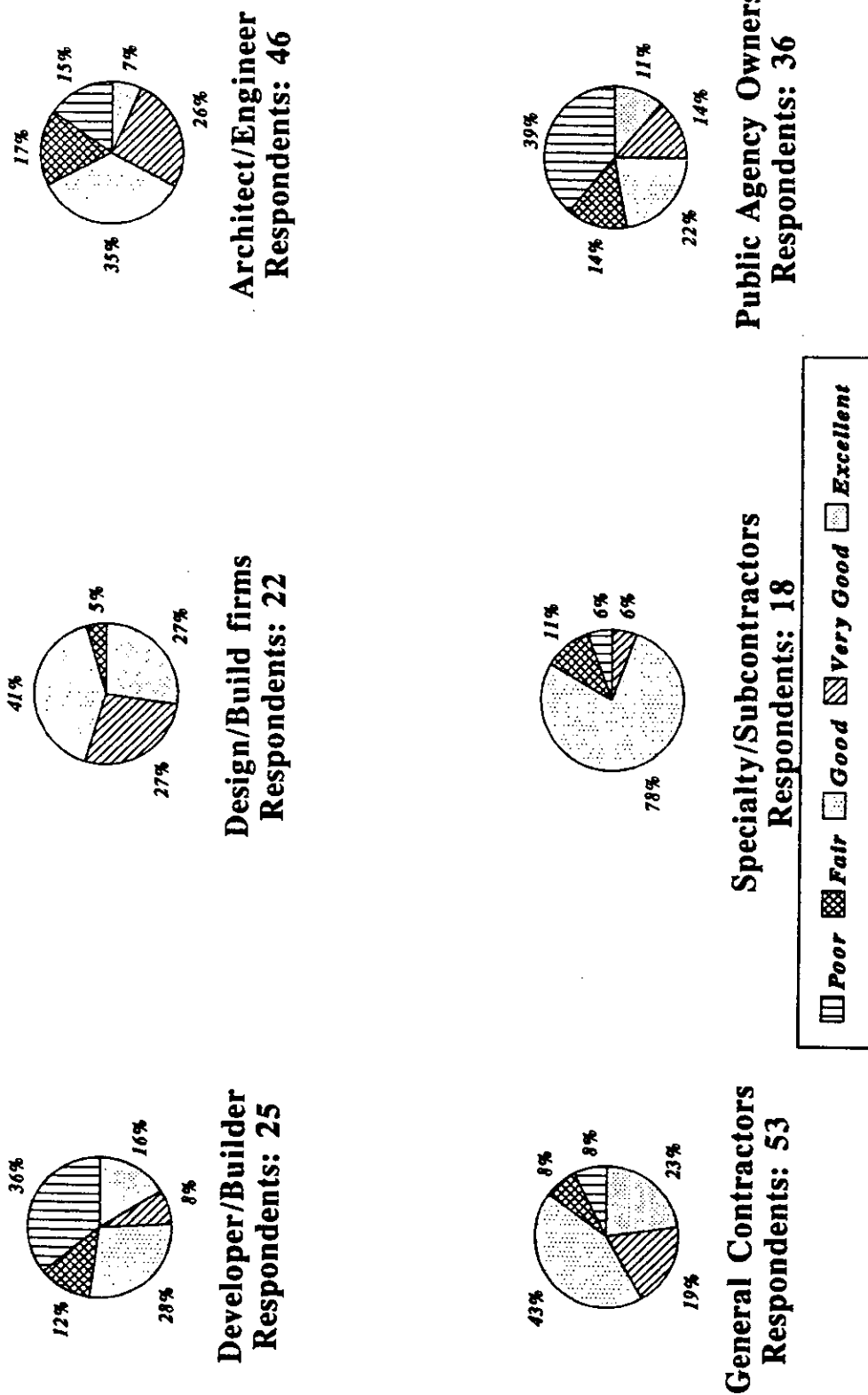
This alternative was favored in varying degrees by all six groups. The results are shown in Figure 25. 85% of the general contractors, 84% of the subcontractors, 95% of the design/build firms, 52% of the developer/builders, 68% of the architect/engineers, and

*Question 18A(Blue) & 8A(Ivory)*  
*No change is necessary*



**FIGURE 24**

*Question 18B(Blue) & 8B(Ivory)*  
***Retainage should be deposited in interest bearing escrow account***



**FIGURE 25**

47% of the public agency owners indicated either good, very good, or excellent to this alternative. It should be noted, however, that 15% of the architect/engineers and 39% of the public agency owners thought this is a poor alternative.

**6.3.4.3 Reduce Retainage to 5% or Other Realistic Figure**

Responses to this alternative is shown in *Figure 26*. General contractors (73%), subcontractors (65%), developer/builders (37%), and design/build firms (86%) approved this alternative by indicating good, very good, or excellent. 47% of the public agency owners, 43% of the architect/engineers and 42% of the developer/builders graded this alternative as poor.

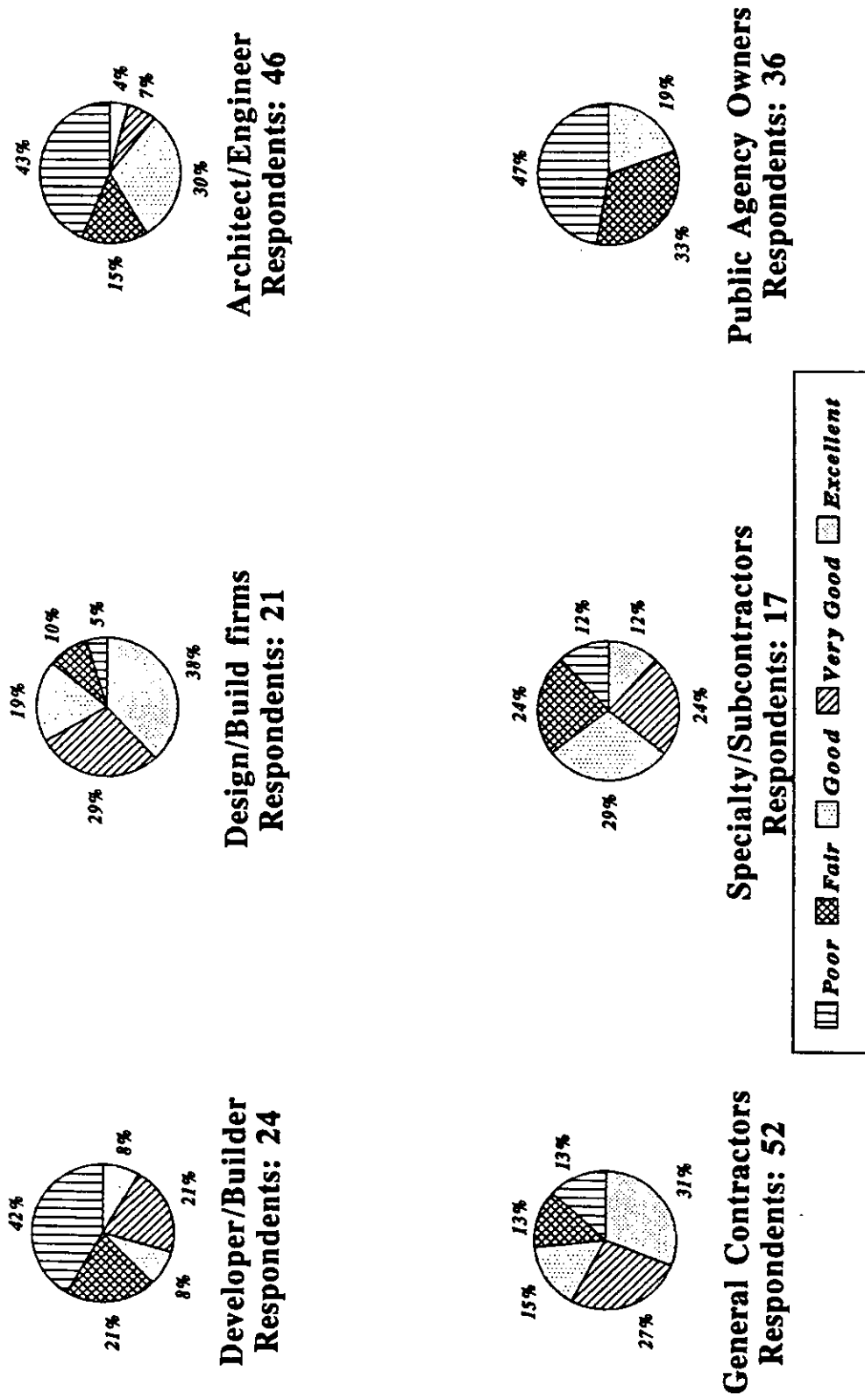
**6.3.4.4 Retain 10% until 50% Completion and 0% Thereafter**

As mentioned earlier, this alternative, or some kind of variations of it, are being used by many agencies. Results are summarized in *Figure 27*. General contractors and design/build firms favor this alternative the most. 83% of the general contractors, 86% of the design/build firms, and 48% of the developer/builders indicated that this is either a good, or very good or excellent alternative. 58% of the public agency owners and 39% of the architect/engineers thought it was a poor idea.

**6.3.4.5 For Jobs 1 Year or Longer, Release Retainage Periodically**

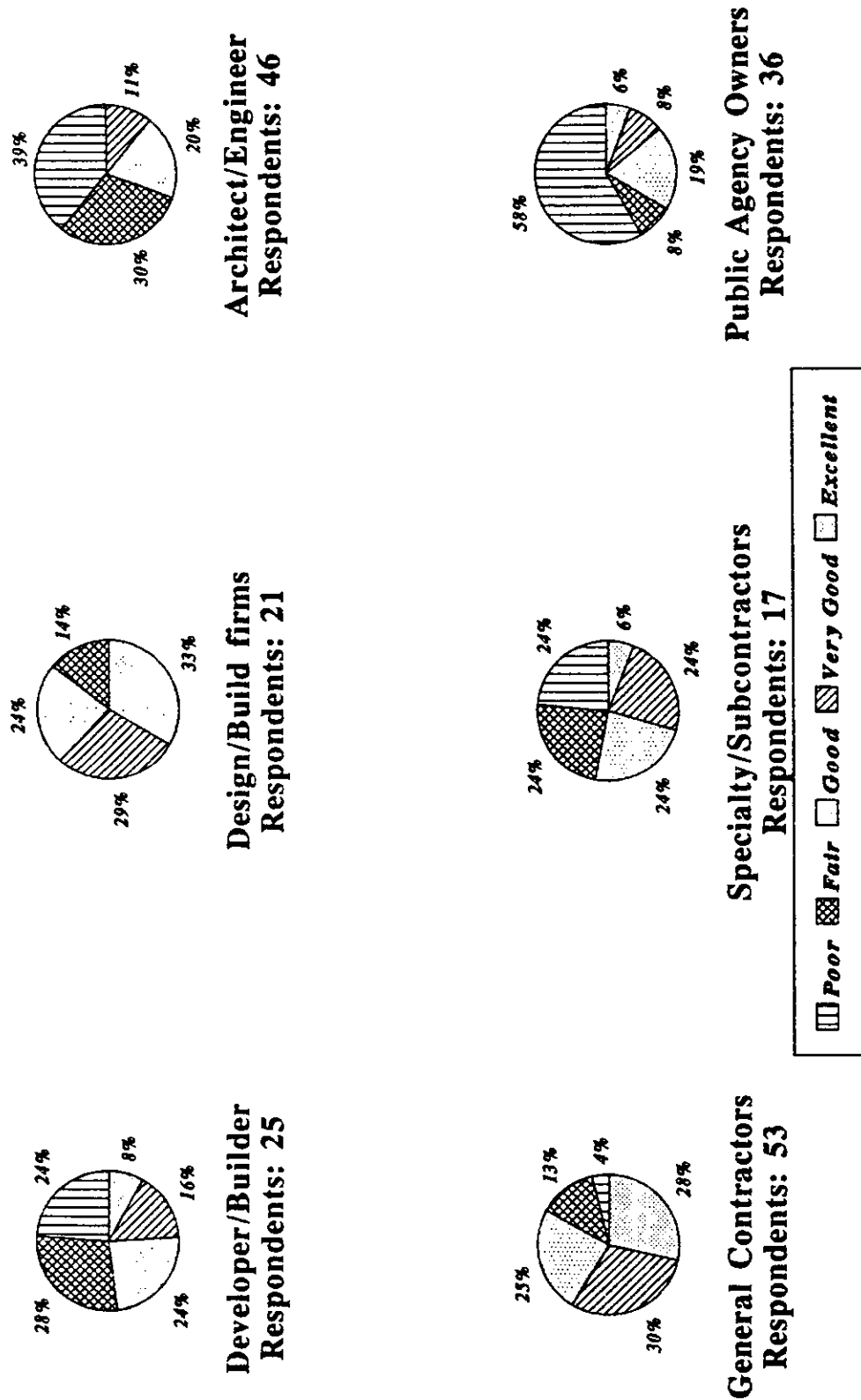
*Figure 28* shows responses to this alternative. Like

*Question 18C(Blue) & 8C(Ivory)*  
*Reduce retainage to 5% or other realistic figure*



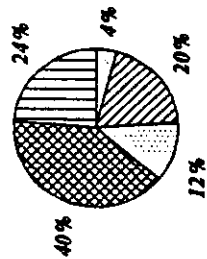
**FIGURE 26**

*Question 18D(Blue) & 8D(Ivory)*  
**Retain 10% until 50% completion and 0% thereafter**

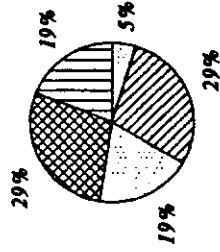


**FIGURE 27**

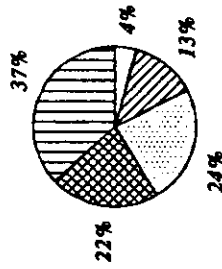
*Question 18E(Blue) & 8E(Ivory)*  
***For jobs 1 year or longer, release retainage periodically***



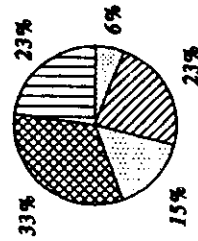
**Developer/Builder  
Respondents: 25**



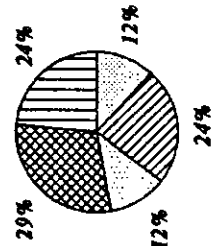
**Design/Build firms  
Respondents: 21**



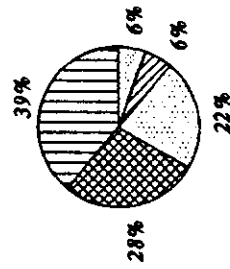
**Architect/Engineer  
Respondents: 46**



**General Contractors  
Respondents: 52**



**Specialty/Subcontractors  
Respondents: 17**



**Public Agency Owners  
Respondents: 36**

Poor
 Fair
 Good
 Very Good
 Excellent

**FIGURE 28**

others, it received high acceptance (indicated good, very good or excellent) from general contractors (44%), subcontractors (48%), and design/build firms (53%). 37% of the responding architect/engineers and 39% of the public agency owners indicated that this is a poor alternative.

**6.3.4.6 Eliminate All Retainage, Protect Owner by Bonding**

Public agency owners (84% indicated poor), architect/engineers (71% indicated poor), and developer/builders (58% indicated poor) overwhelmingly rejected this alternative as illustrated in *Figure 29*. It is important to note that about a quarter of the responding general contractors (26%), subcontractors (24%), and design/build firms (24%) disapproved this alternative by rating it poor. 61% of the general contractors, 60% of the subcontractors, and 67% of the design/build firms, however, favored this alternative by indicating good, very good, or excellent.

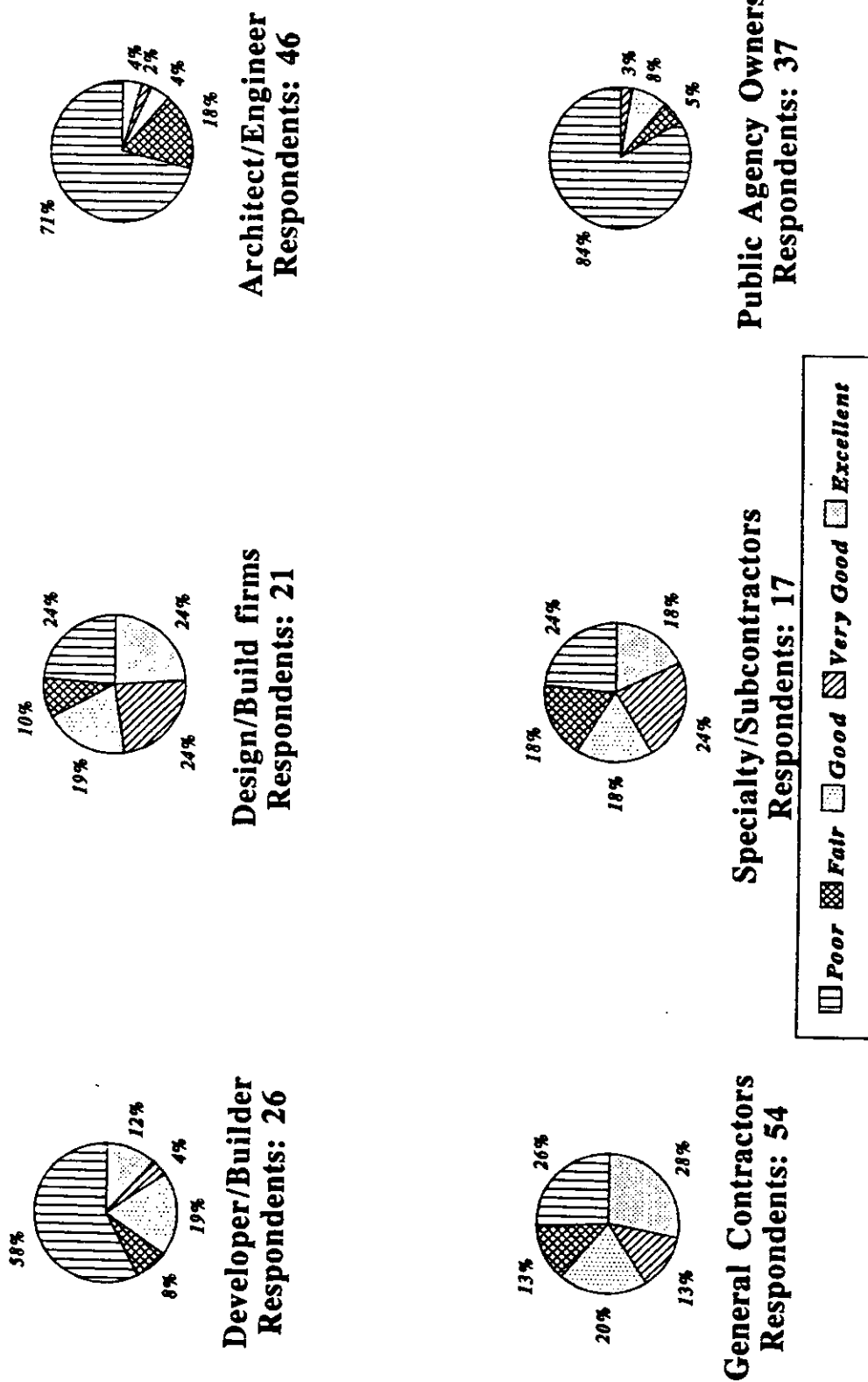
**6.3.4.7 Eliminate Retainage, Require Contractor to Furnish Letter of Credit**

This alternative, as shown in *Figure 30*, was not favored by most in the six responding groups. Even a majority of the general contractors (64% indicated poor) and subcontractors (53% indicated poor) disapproved this as a viable alternative.

**6.3.4.8 Eliminate Retainage, Increase Bonding Requirement**

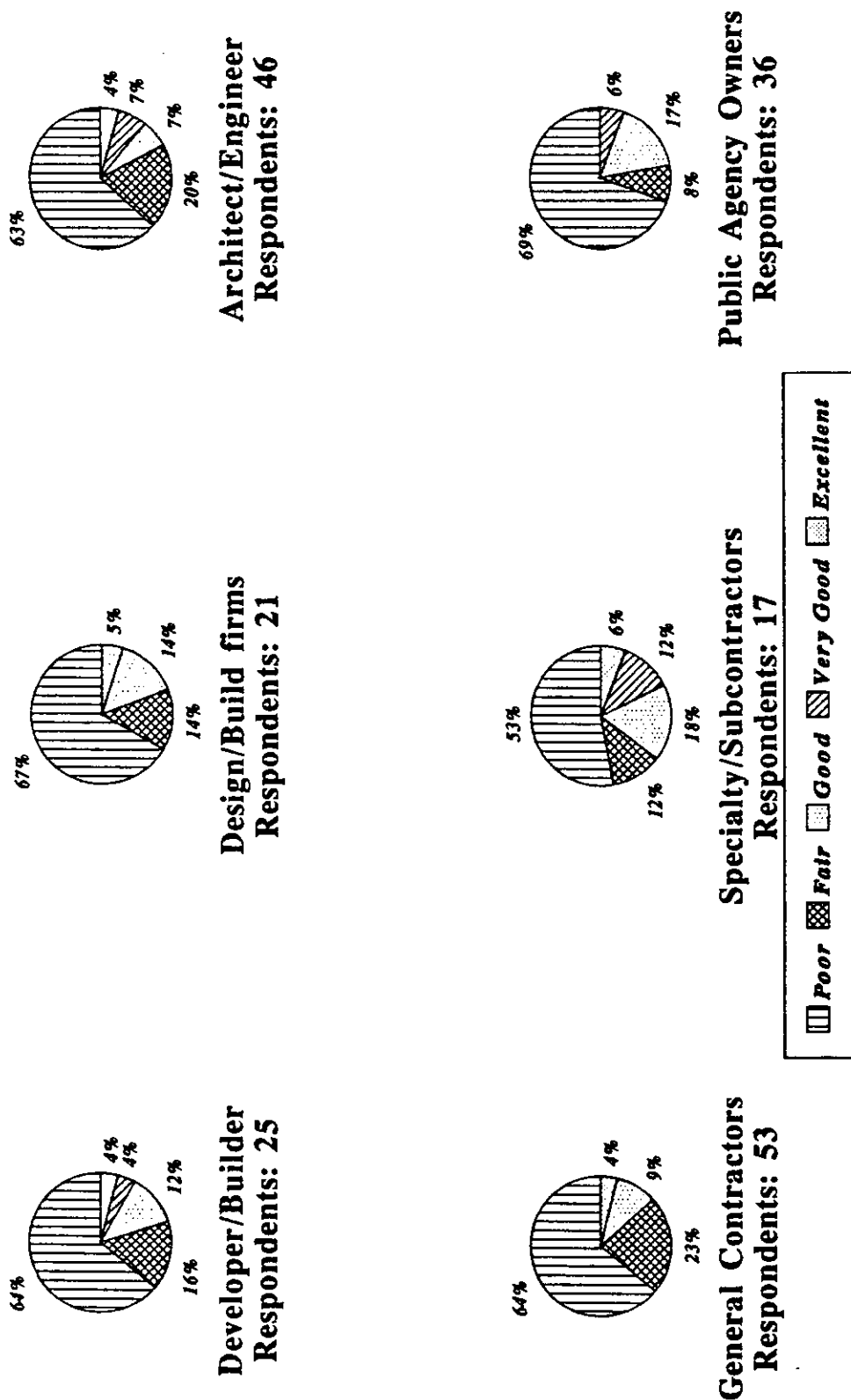


*Question 18F(Blue) & 8F(Ivory)*  
***Eliminate all retainage, Protect owner by bonding***



**FIGURE 29**

**Question 18G(Blue) & 8G(Ivory)**  
***Eliminate retainage, require GC to furnish letter of credit***



**FIGURE 30**

Like the previous one, this alternative was also disapproved by the majority of the respondents. Figure 31 shows the result. 45% of the general contractors, 44% of the developer/builders, 45% of the design/build firms, and 53% of the subcontractors rated this alternative as poor. About a third of the general contractors (33%), subcontractors (30%), and developer/builders (32%) approved it by indicating good, very good, or excellent.

#### **6.3.4.9 Other Alternatives Suggested by the Respondents**

Respondents were asked to suggest other alternatives that were not listed in the question. Following is a summary of the suggestions made by the respondents of the survey.

"Maintain 10% retainage, get waivers for materials and subcontractors work."

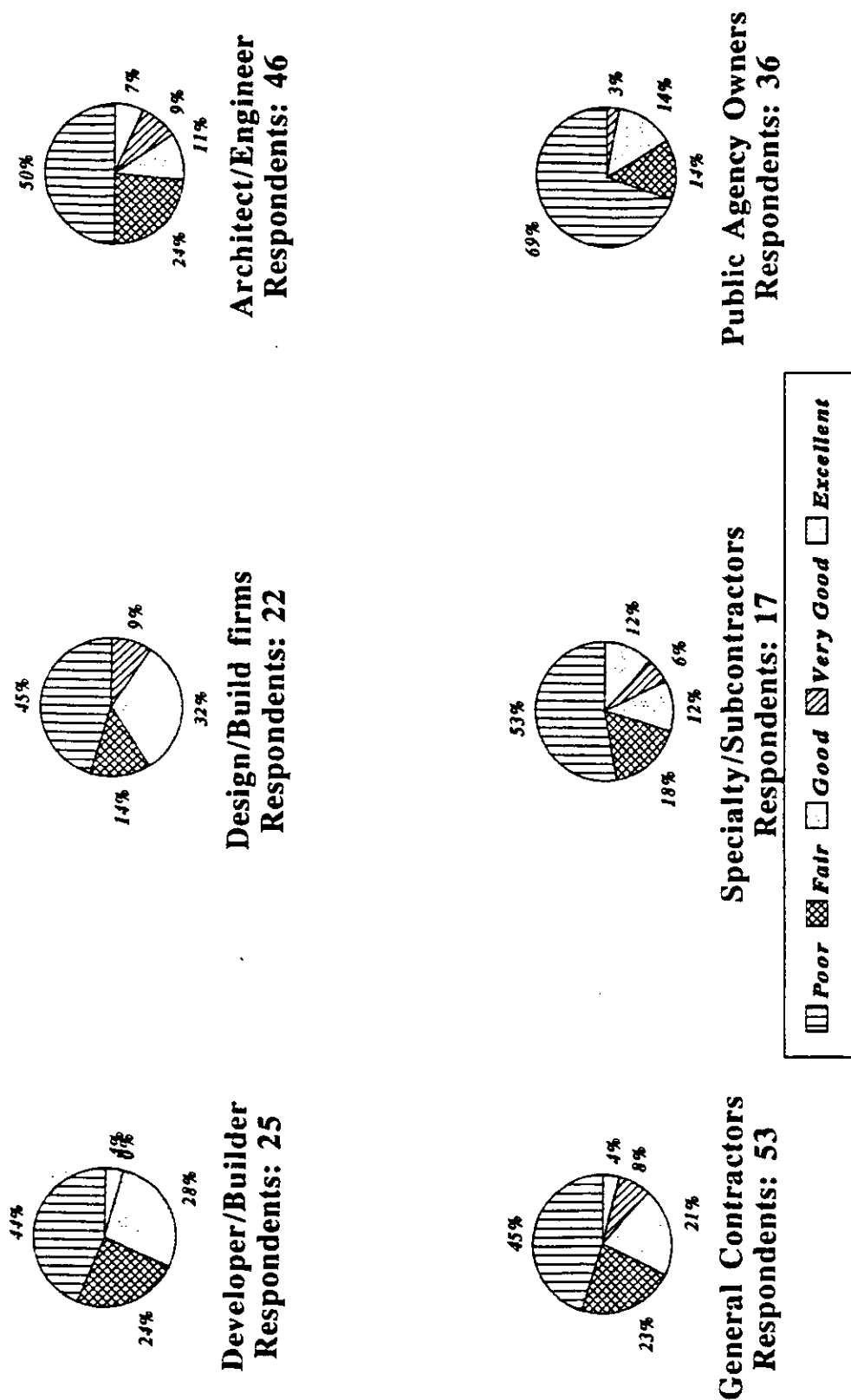
"10% until 50% complete if work is on schedule and satisfactory - reduce to 5% with option to increase back to 10% if work falls behind schedule."

"Retainage could be reduced if a method of payment to subcontractors could be developed that would stimulate project completion. For example, the owner holding and releasing 10% of each subcontractor's contract directly to the subcontractor upon ok from contractor."

"Securities of deposit placed on large or extended term projects with a public agency or mutual escrow party if private."

"At 50% job completion reduce total retainage to 5% so that retainage at substantial completion is 5%."

*Question 18H(Blue) & 8H(Ivory)*  
***Eliminate retainage, increase bonding requirement***



**FIGURE 31**

"Owners hold actual retainage amounts for unsatisfactory or incomplete work, and release it when work is corrected or completed."

"Wish joint checks and bonds could reduce retainage."

"Sliding scale reduction for good performance, on time and cooperative, few change orders, realistic negotiation on change order costs."

"If the bonding companies would be easier to work with, then the 10% retainage will become unnecessary."

"Write retainage procedure appropriate for the particular project, I favor 10% retainage throughout most of the project with the percentage going down at the end."

"Why not prequalify contractors as to their track record, quality reputation, financial condition, and general reputation prior to contracting with them."

"Keep retainage but don't require G.C. to pay all debts held by retainage until this money is received."

"10% until 50% completion and 5% thereafter."

"Allow the retainage expense to be a bid item along with insurance, bonds etc."

"Progressively reduce 10% retainage down to 5% especially if contractors performance is adequate."

"Force GCs to use same method with subs as they receive from owner e.g., if GCs receive interest they should pay interest to subs on retainage."

"Use a sliding scale, but never reduce to 0% till the final payment. Percentage to vary based on size and nature of project."

#### **6.3.5 Other Comments**

Respondents were asked to include any comments they

wanted to make on the issue of retainage in item 19 (Blue) and 9 (Ivory) of the questionnaire. Some very interesting comments were made. Knowledgeable and experienced respondents by way of making comments pointed out many critical issues on the subject of retainage. These comments would help anyone who wants to comprehend the problem of retainage. Following is a representative sampling (grouped by type of respondent) of the comments made:

#### *General Contractors*

- "To eliminate retainage would probably run bond cost up and increase financial requirement beyond reach of many contractors."
- "Bonding is not the answer either. Bonding is very difficult to qualify for already."
- "Bonding and retainage is the owner and architects' method of avoiding the task of research required to ensure upfront, that the contractor is reliable and will do what is contractually required."
- "Maybe incentives instead of retainage would help. Zero punch list jobs on time could be rewarded."

#### *Sub-Contractors*

- "GCs passed-through the retainage requirement, and held at least 10% of their subcontract amounts. If the sub had no bond, the GC would, or could, retain 15% or even 20% of funds due that subcontractor. Thus a shrewd GC would evade the 10% retainage requirement entirely by passing it on to his subs. Furthermore, when interest rates were high, some GCs would also delay subs' payments for 30 days, deposit the owners payments in a 30 day CD,

and pocket the interest for the short term investment."

■ "As a subcontractor I believe we should receive 100% upon completion and not have our money held until all the work is completed."

■ "Retainage from subs completing their work early in the project should be released prior to the expiration of their lien rights - not waiting until the GC receives its retainage."

*Owners (Public and Private)*

■ "During 1983, the Federal Contracts were revised to make the 10% retainage requirement entirely discretionary by the Contracting Officer. Present philosophy now excludes fixed rate retainage except in cases where the contractor is 30 days or more behind schedule, and even then, the reason for delay must clearly be the fault of the contractor. However, prudent Resident Engineers and Contracting Officers will hold actual amounts of retainage (in the estimated value of the work) for corrections of defective or unsatisfactory work, or for omitted work. Ninety nine percent of the time, this retainage is passed through to a subcontractor."

■ "Hillsborough County's construction contracts currently require 10% retainage until 50% of the project is complete. The contractor may then request that no more retainage be withheld. If the Project Manager feels that the progress of the job and quality of work is acceptable at that point, no additional retainage will be withheld, unless the progress of the work or the quality of the work deteriorates to the point that the Project Manager feels that additional retainage is required. We do not feel that performance bonds take the place of

retainage. Retainage provides the owner with a less cumbersome method of addressing certain elements of the work that may be ignored by the contractor, particularly at the final closeout stage."

■ "I strongly believe that if a 100% Performance and Payment Bond is furnished to the owner by the contractor, then retainage should not also be required. However, I also realize that many owners who have had to deal with Surety Companies to finish a defaulted project have found that they needed retainage monies to cover current and ongoing costs, because of the delay tactics of Surety Companies in funding the completion of defaulted projects. Maybe one of the solutions would be for Owners to demand better bonds, whereby they can make stronger demands on the Surety Companies. As a direct consequence, this might compel the Surety Companies to be more selective in furnishing bonds only to the best contractors - companies who are not just licensed contractors but also completely equipped construction organizations."

■ "The retainage policy of the Florida Department of Transportation for many years was 10% of monies earned until 50% of the contract was complete - then 5% until 90% was complete; then 2-1/2% until final acceptance; then, if no problems were ongoing (no disputed claims, etc.) the Department might hold only a nominal retainage (1/2%) while the final review of quantities and other paperwork is being finalized prior to final payment. This policy seemed to work very well; however, contractors feel that all retainage monies should be placed in interest bearing accounts with the interest



accruing to the account of the contractor. As you probably know, the F.D.O.T. now allows contractors to substitute securities for retainage, and thereby obtain the release of retainage monies and earn interest on the securities. But many contractors do not have securities to furnish."

- "The owner must be able to withhold some funds to get them to perform or make corrections."

- "Retainage is held not only for punch list items but also for required close-out documents, such as, as-builts, warranties, close-out forms, maintenance and operation manuals to mention a few. Therefore, it is critical to note that if retainage is reduced these items should be held from another line item - may be the general conditions."

- "Low quality work by using low bid subs will continue to cause owners to use retainage."

#### *Architects/Engineers*

- "I do feel there is some merit in considering that the interest earned on the retainage go to the contractor. This would appear to provide some measure of comfort to contractors who feel that their cash flow and financial planning is adversely affected by the retainage requirements in contracts."

- "Inasmuch as most contractors do not have the discipline to set aside funds for replacement of equipment, expansion, contingencies, etc. The 10% retainage requirement serves as a type of forced savings, which in the past has saved many small contractors from insolvency. A 10% retainage policy also tends to make contractors bid more realistically."

■ "Dealing with the retainage problem is simply one of the rules of the game, changing it changes the game and may lead to developing alternative tactics, but it will remain a game. Bonding protects the owner. Retainage is really a carrot on a stick to keep the contractor motivated to finish. Penalty and bonds clauses can do the same thing."

■ "In my 33 years of contracting the absolute only way a contractor will complete the contract as specified is by withholding retainage. It would be a disaster to eliminate retainage. Even with retainage most contractors are a disaster. Bonds aren't worth the paper they are written on!"

■ "Bonding is cumbersome. Retention is necessary in S. Florida to get quality and service."

■ "Since periodic payments are made based on an estimate of the work completed, the elimination of retainage would require costly refinements in the process. Also, the retainage gives the owner some leverage to get contractors to complete incidental work and have minor repairs/replacements made in a timely manner."

■ "From our experience, approximately 95% of construction runs smoothly and more or less on schedule. There must be something to encourage contractors to complete all work, including submitting the Record Drawings, warranties, guarantees, waivers of lien, affidavits, etc. This procedure to complete the final 5% of the work and submit all required project closeout documents routinely takes more than 6 months to a year and is rarely satisfied 100%. The contractor places an

unnecessary burden on the Architect and the Owner and retainage seems the best viable mechanism. If the contractor were to complete the final items in a shorter timeframe, it would relieve everyone's burden and rejuvenate cash flow quickly at the final completion of the project."

#### 6.3.6 Future Participation

In the last item of the questionnaire, 20 (Blue) and 10 (Ivory), respondents were asked to indicate their willingness to participate in future research projects involving the issue of retainage. 65 out of 172 respondents (about 38%) indicated their willingness. This figure is 31% (20 out of 65) among the contractors and 42% (45 out of 107) among the other participants.

## Chapter 7

### INTERVIEWS

#### 7.1 General

One of the major approaches used in this research was conducting interviews with some of the state's construction industry professionals, in order to obtain opinions on the effects of retainage policy as currently practiced, and suggestions regarding reasonable alternatives. These interviews allowed the investigators to explore some of the key issues in depth but in an informal manner. The interviews were conducted without following any rigid format. Some were conducted at the interviewee's place of business, others at special functions or meetings, and some via telephone and fax.

Four basic steps, as outlined below, were followed in conducting the interviews:

1. *Explain the nature and importance of the research study:*

Each interviewee was given a copy of the survey questionnaire (blue or ivory, depending on their type of involvement in the industry) and were asked to briefly review them so that they would quickly understand the objectives of the research. Then a brief introduction was made by the interviewer(s) as to the nature and the importance of the research study.

2. *Need for Retainage.*

Interviewees were asked to explain their position on the issue of retainage. They were specifically requested to give their opinions from their own perspectives as to the purpose and the need for having the retainage clause in Contract Documents.

3. *State of the Construction Industry.*

Interviewees were asked to express their feelings on the current economic situation prevailing in the industry. They were also asked to comment on the perceived effects retainage provisions may have had on the business of construction.

4. *Suggestions.*

Interviewees were then requested to give their suggestions on how to solve the problems created by retainage practice, if it indeed created the problems. They were also asked, when appropriate, to explain how to implement their suggestions.

There were a total of fourteen interviews conducted with the representatives of the following:

Professional Associations (Architects, Contractors)  
Public Agency Representatives (Major owners)  
Construction Management Company  
General Contracting Firm  
Engineering Firm  
Architectural Firm  
Bonding Company  
Bank (Lending Institutions)

The outcome of these interviews are presented in the following subsections. Each interview is summarized in three paragraphs: (1) Purpose of retainage, (2) Its effects, and (3) Suggestions on alternatives.

**7.2 Interview with Mr. Richard M. Waas (Current President of the Associated Builders and Contractors (ABC) State of Florida) and Mr. James J. Phillips of Waas-Phillips Construction Company**

*Purpose of Retainage*

The basic purpose of retainage is to protect the owners' interest and to ascertain that the contractor completes the project in accordance to Contract Documents.

*Its Effects*

The 10% retainage amount is not a major factor in the construction industry, but its effects are amplified in today's economic situation. Especially in the present competitive bidding atmosphere where there is only a 3% to 5% markup. Contractors and Subcontractors have to basically subsidize and perhaps finance these amounts because the 10% retainage amount is not figured in the contractor's bid price. In today's economy, and under the low bid scenario, those that do include the 10% retainage in their bids will most likely not get awarded the projects. Subcontractors are the ones that seem to be impacted the most by the 10% retainage. General Contractors usually withhold the same retainage amount from some of their Subs, thus the retainage amount places a heavier burden on the Subs.

### *Suggestions on Alternatives*

10% retainage should be reduced to 0% or 5% when construction reaches 50% completion.

The 10% retainage amount may not be a problem as long as the retained monies are paid to contractors in a timely manner, so that contractors can pay their subcontractors on time as well.

### **7.3 Interview with Mr Jorge Cibran and Mr. David Perez of the American Institute of Architects (AIA), South Florida Chapter.**

#### *Purpose of Retainage*

It basically protects the owner by making certain that contractors complete punch list items in an expeditious and proper manner.

#### *Its Effects*

The quality of the work or the performance of the contractor and the excessive amount of change orders have no relation to the 10% retainage. The economic burden that the 10% retainage amount imposes on the contractor, for all intended purposes, seems to be neutralized by the fact that most contractors utilize "front loading" tactics. As such, the one that may really feel the impact of any retainage would be the subcontractors, because they do not get the benefit of "front loading" but do get assessed a retainage amount.

#### *Suggestions on Alternatives*

Additional monies (besides the 10% retainage) may be withheld from the Contractor related to deficient work because the Architect feels it will protect the owner.

Extension of bonding or other type of surety

coverage will not work in replacing retainage.

Agree that owners shall deposit retainage sums in interest bearing escrow accounts and that the contractor shall be paid the interest derived from those monies.

As another alternative, an owner may require an irrevocable letter of credit from the contractor in lieu of the 10% retainage.

The best alternative may lie between the interest bearing escrow account and the irrevocable letter of credit.

#### **7.4 Interview with Mr. Sebastian Alamzan, Director, Metro-Dade County - Department of Development and Facilities Management (DDFM).**

##### *Purpose of Retainage*

The 10% retainage amount protects the owner. Specially in assuring that the contractor will complete the punch list items in a more expeditious manner than they would do otherwise.

##### *Its Effects*

Contractors have a tendency to "front load" the project, thus avoiding the full impact of the 10% retainage. While the subcontractors seem to be the ones affected the most. Disagrees that 10% retainage is a contributing factor for increasing bankruptcy of contractors.

##### *Suggestions on Alternatives*



Agrees that the owner shall deposit the retainage monies in an interest bearing escrow account and the contractor be paid the interest accrued along with the retained monies. Other measures, such as extension of bonding will not serve the same purpose.

Basically thinks that the present 10% retainage amount is the most fair for the protection of the owner.

**7.5 Interview with Dr. John Pennington III - Assistant  
Superintendent, Department of Facilities  
Management, Dade County Public Schools**

*Purpose of Retainage*

The 10% retainage (standard in the industry) is basically designed to assure the owner that there is enough money to complete the project in case the contractor is unable to continue.

*Its Effects*

But many believe, it is really utilized to acknowledge for latitude in judging the percentage of completion that Architects must assess when authorizing payments to Contractors. Of course, some Contractors are raising the question of why should they get penalized if the Architects cannot accurately assess the proper

percentage of completion.

The retainage system provides a setting where the subcontractors and the suppliers are the ones that really feel the "squeeze," rather than the contractor. Contractors basically pass on the retainage clauses imposed on them to their subs and some of their suppliers

The 10% retainage amount does not affect the quality of the work. The work is done by people, thus the quality of the work depends on the training and expertise these people have.

The 10% retainage amount does not affect the number of change order requests. The increase in change order requests is a direct result of the quality of the documents produced by Architects and Engineers, and the present market conditions where every contractor seems to underbid the other.

#### *Suggestions on Alternatives*

No alternative was suggested except the following comment on bonding: Bonding companies rarely payoff, and if they do, it is usually after a long battle, therefore, it is not a good alternative to increase the bonding coverage to substitute for the retainage amount.

**7.6 Interview with Dr. Rose Barfield-Cox, Executive Director, and Mr. Calvin Jennings, Coordinator, Dade County Public Schools - Department of Minority Business**

*Purpose of Retainage*

The 10% retainage system has traditionally been implemented to protect and assure the owner that the contractors will complete projects as per the contract documents.

*Its Effects*

In real terms, subcontractors are the ones that carry the economic burden of the 10% retainage sum. Contractors simply pass-on to their subcontractors whatever retainage monies the owner withholds from their contract.

*Suggestions on Alternatives*

Three to four years ago the Dade County Public School system recognized the fact that Contractors were experiencing cash flow problems during the duration of construction projects. The 10% retainage amount was identified as an unrealistic sum and perhaps one area where times had caught up with tradition. Therefore they worked out a way to still protect the interest of the

owner while allowing a relief to the cash flow problem. They incorporated a retainage process where 10% of the monies due to contractors were held only until the 50% construction completion had been achieved and 0% thereafter.

The School Board is still exploring several other solutions that will basically ensure that the contractor utilizes the subcontractor whose price was utilized in the presentation of the bid proposal and that they get paid promptly as well.

**7.7 Interview with Mr. Pat D'Addio of Tishman Construction Corporation of Florida, a construction management firm of Orlando**

*Purpose of Retainage*

Retainage is necessary to make sure that the contractor will perform and do all the necessary work till the completion of the project. Even GCs want to hold retainage from their subs for the same reason.

*Its Effects*

10% may not be the right figure, especially for large volume jobs.

*Suggestions on Alternatives*

Bonding is not an alternative, it affects schedule. Size of the project should determine the percentage of retainage. Say for example: small jobs 10%, medium jobs 5%, and large jobs 2-1/2%. A special task group formed from among the industry professionals should try to reach a consensus on the job size and corresponding retainage percentages.

**7.8 Interview with Mr. William H. Snider, Manager, Adams and Robinson of Florida, a General Contracting Firm**  
*Purpose of Retainage*

Basically to protect owners.

*Its Effects*

Owners are overly protected. Bonding somewhat duplicates owners' protection. Also, retainage policy can easily be abused by the owners.

*Suggestions on Alternatives*

Put 10% retainage into escrow accounts. Reduce retainage to 5% after 50% completion. Other variations should be considered depending on type and size of job.

**7.9 Interview with Mr. Donald G. Dorner, A/R/C Associates, An architectural Firm**

### *Purpose of Retainage*

Protection of owners. Projects fail at the end of the project because contractors tend to walk out.

### *Its Effects*

10% is too high especially for big jobs.

### *Suggestions on alternatives*

Reduce the amount according to the size of the project. Government officials (in case of public works) should not delay inspection so that the retained money can be promptly released. Retainage should be released as each subdivision (or work package) is being completed.

## **7.10 Interview with Mr. Jeff Jennings and Ms. Tony Jennings of Jack Jennings and Sons, A General Contracting Firm**

### *Purpose of Retainage*

Serves as a protection for owners for the punch list items and close-out documents. Retention does not guarantee adequate funds.

### *Its Effects*

Retainage is used as a negotiating tool by the owners. Delay in payment by the owners or their representatives affects the contractor more than the

amount of retainage.

*Suggestions on Alternatives*

5% reduction in retainage after substantial completion of a specific trades work, not the project.

**7.11 Interview with Mr. Joel Thomas Arnold of Richardson Engineering, An Engineering Firm**

*Purpose of Retainage*

It is very important for the owners and engineers to have this tool in their possession since most contractors would tend to walk away at the last part of the project.

*Its Effects*

10% is excessive for many jobs. Elimination of 10% retainage will not solve all the problems, subs will be squeezed anyway.

*Suggestions on Alternatives*

Reduce to 5% or other realistic figure depending on the job size.

**7.12 Interview with Mr. Jeffrey P. Salvin, PE, Resident Engineer, General Services Administration, Miami**

*Purpose of Retainage*

Basically to protect owners from unscrupulous

contractors.

#### *Its Effects*

It adversely affects the cash flow of contractors, subcontractors and suppliers; but mostly of subs and suppliers. It has been my experience (since 1983) that even though no retainage is held by the Government, the GC still retains 10% from most of his subcontractors.

#### *Suggestions on Alternatives*

The US Government changed (in 1983) its retention language and allows contractors to request release of 50% of the retainage at 50% of the project completion. The decision to release the money, however, is made by the contracting officer or the resident engineer based on the satisfactory performance of the contractor. In addition to this variation, the Government now requires the GC to sign a release form with each progress payment, wherein he states that he is making (passing through) "timely" payments to his subcontractors and suppliers from the proceeds of that progress payment. However, without an explicit definition of "timely," I routinely see GCs withholding payments for 30 days or more from subs or suppliers. In my opinion, the change in contractual language has not benefitted the people for which it was



intended.

**7.13 Interview with Mr. Charles Nielson, Partner,  
Collinsworth, Alter, Nielson, Fowler and Dowling  
Bonding Company, Miami.**

*Purpose of Retainage*

Retainage is a different kind of protection for the owners. Unlike bonding, which becomes effective only when the contractors fails, retainage is an continuous protection to get the job completed (including punch-list items) according to the specifications. Retainage also protects the bonding companies to some extent. In the event of contractor-failure, in most cases, retained money becomes available to the bonding companies for completion of the job.

*Its Effects*

In today's market, the most critical victim of the flat 10% retainage is the contractors' cash flow and as a consequence, the cash flow of the subs and the suppliers. Contractors tend to front-load to avoid cash flow problems. Subcontractors, hired during the early phase of the project, wait too long for getting paid. It becomes very difficult, specially when the work is labor-

intensive and the burden of retainage cannot be passed through to suppliers or other subs.

#### *Suggestions on Alternatives*

Elimination of retainage is not a good idea. For large projects gradual reduction of retainage can be practiced. Another idea is to put a cap on the amount of retained money; at no point in time the total amount of retainage will exceed the capped maximum dollar amount. This should depend on some factors such as, the size and duration of the project and the contractor's projected cash flow. Paying interests on the retained money to the contractors is a minor consolation but will not solve the problem. The main problem is the cash flow problem. Public owners, tend to hold money for too long.

**7.14 Interview with Mr. James Dunn, Senior Vice President/Branch Manager, Willis Corron Construction Services Corporation of Florida, Tampa.**

#### *Purpose of Retainage*

The main purpose of retainage is to ensure that the last phase of the project would be completed and items like close-out documents and punch-list would not be left out.

Public projects seem to have a stringent retainage policy despite the fact that they are also bonded. It seems to be redundant.

*Its Effects*

It has an adverse effect on the cash flow of the contractors, the subcontractors and the suppliers. We, bonding companies, prefer smooth cash flow. The reason is, most failures in construction are the result of bad cash flow. I think that the bankers would also feel the same way, contractors will repay loan if their cash flow is smooth. We get concerned when retainage is too high and when the cash flow of the contractors, and especially, of the subs is being adversely affected. From this point of view we think less retainage is better and preferable. However, I think that for most jobs, generally speaking, 10% is not too high. Bonding companies want to know when and how retained money is going to be released. Owners are required to have bonding companies' consent before releasing retainage money on public projects.

If there is a reduction in retainage, bonding companies would be required to track the job progress and

payments to subs and suppliers more closely.

#### *Suggestions on Alternatives*

We prefer variations such as 5% or 0% after 50% completion. We have seen escrow accounts set up to hold retainage money in private jobs. DOT has a procedure of setting up restricted or pledged certificates of deposit (like securities) in lieu of retainage.

#### **7.15 Interview with Mr. Steve Cohen, Commercial Loan Department, Sun Bank, Miami.**

##### *Purpose of Retainage*

It protects owners and its purpose is different from that of bonding. Our standard policy is flat 10% retainage. We do not release retainage to builders. We release it based on our inspectors' field report and we have not experienced much problem.

##### *Its Effects*

If retainage is not handled carefully it may hurt contractors' and subs' cash flow.

##### *Suggestions on Alternatives*

Based on satisfactory progress on specific items, entire retainage can be released. This way subcontractors' and suppliers' money will not be held back for too long. From accounting standpoint, however,

this alternative of releasing retainage on line items, is  
a complicated procedure.

**APPENDIX A**

**QUESTIONNAIRE**

# BLUE

## 10% RETAINAGE QUESTIONNAIRE

PLEASE RESPOND BY PUTTING A CHECK OR CROSS MARK NEXT TO THE APPROPRIATE LETTER.

TITLE OR POSITION OF THE RESPONDENT \_\_\_\_\_

1. TYPE OF FIRM/ORGANIZATION: CHECK ALL THAT APPLY

- |  |   |
|--|---|
| A__ DEVELOPER/BUILDER                  | B__ DESIGN/BUILD FIRM                         |
| C__ ARCHITECTURAL OR A/E DESIGN FIRM   | D__ GENERAL CONTRACTOR                        |
| E__ SPECIALTY CONTRACTOR/SUBCONTRACTOR | F__ CONSTRUCTION MATERIAL/EQUIPMENT SUPPLIERS |
| G__ BONDING COMPANY                    | H__ FINANCIAL (LENDING) INSTITUTION           |
| I__ CONSTRUCTION LAW FIRM              | J__ PUBLIC AGENCY OWNER                       |
| K__ PRIVATE OWNER                      | L__ PROFESSIONAL ORGANIZATION                 |
| M__ OTHER (PLEASE SPECIFY) _____       |   |

2. SIZE OF FIRM/ORGANIZATION:

- |                     |                       |
|---------------------|-----------------------|
| A__ 1-3 EMPLOYEES   | B__ 4-9 EMPLOYEES     |
| C__ 10-50 EMPLOYEES | D__ OVER 50 EMPLOYEES |

3. CHIEF AREAS OF BUSINESS: CHECK ALL THAT APPLY.

- |                                 |                                   |
|---------------------------------|-----------------------------------|
| A__ RESIDENTIAL                 | B__ RENOVATION/ADDITIONS/INTERIOR |
| C__ PRIVATE COMMERCIAL          | D__ PUBLIC (LOCAL/STATE/FEDERAL)  |
| E__ HEAVY (ENGINEERING/HIGHWAY) |                                   |

4. HOW LONG HAS YOUR FIRM/ORGANIZATION BEEN ESTABLISHED?

- |                             |                            |
|-----------------------------|----------------------------|
| A__ LESS THAN ONE YEAR      | B__ ONE YEAR TO FOUR YEARS |
| C__ FOUR YEARS TO TEN YEARS | D__ MORE THAN TEN YEARS    |

5. ABOUT WHAT PERCENT (%) OF YOUR BUSINESS IS CONDUCTED WITH CLIENTS WHO ARE:

- |                                    |                |                     |
|------------------------------------|----------------|---------------------|
| A__ % LOCAL (STATE OF FLORIDA)     | B__ % NATIONAL | C__ % INTERNATIONAL |
| D__ % OTHER (PLEASE SPECIFY) _____ |                |                     |

6. WHAT PERCENT (%) OF YOUR BUSINESS IS CONDUCTED WITH THE DIFFERENT CLIENT TYPES?

- |   |
|---|
| A__ % COMPETITIVE BIDDING                         |
| B__ % NEGOTIATED, INVITED AND/OR SELECTED BIDDING |

7. PLEASE INDICATE THE APPROXIMATE CONTRACT VALUE YOUR BUSINESS DOES PER YEAR:

- |                                  |                                 |
|----------------------------------|---------------------------------|
| A__ UNDER \$500,000              | B__ \$500,000 TO \$1,000,000    |
| C__ \$1,000,000 TO \$5,000,000   | D__ \$5,000,000 TO \$10,000,000 |
| E__ \$10,000,000 TO \$20,000,000 | F__ OVER \$20,000,000           |

8. TO WHAT PERCENT (%) OF YOUR WORK DO YOU PROVIDE BONDING?

- |                 |                   |
|-----------------|-------------------|
| A__ NONE        | B__ LESS THAN 25% |
| C__ 26% TO 50%  | D__ 51% TO 75%    |
| E__ 76% TO 100% |                   |

## BLUE

9. WHAT PERCENT (%) OF YOUR SUBCONTRACTORS ARE REQUIRED TO PROVIDE BONDING?
- A \_\_\_ NONE                      B \_\_\_ LESS THAN 25%                      C \_\_\_ 26% TO 50%  
D \_\_\_ 51% TO 75%                      E \_\_\_ 76% TO 100%
10. WHAT PERCENT (%) OF YOUR CONTRACT WORK REQUIRES 10% RETAINAGE THROUGHOUT THE PROJECT DURATION ON PAYMENTS FOR WORK IN PLACE?
- A \_\_\_ NONE                      B \_\_\_ LESS THAN 25%                      C \_\_\_ 26% TO 50%  
D \_\_\_ 51% TO 75%                      E \_\_\_ 76% TO 100%
11. PLEASE INDICATE APPROXIMATELY, IN PERCENTAGE, HOW FREQUENTLY YOU ENCOUNTER THE FOLLOWING METHODS OF RETAINAGE
- A \_\_\_ 10% FLAT  
B \_\_\_ 10% UNTIL 50% OF THE CONSTRUCTION IS COMPLETED AND NO RETAINAGE THEREAFTER.  
C \_\_\_ OTHER (PLEASE SPECIFY) \_\_\_\_\_
12. FROM WHAT SUBCONTRACTORS DO YOU RETAIN 10% FROM THEIR PAYMENT REQUESTS?
- A \_\_\_ ALL  
B \_\_\_ ONLY MAJOR SUBCONTRACTORS, SUCH AS MECHANICAL, ELECTRICAL.  
C \_\_\_ NONE
13. HOW DO YOU RETAIN FROM YOUR SUBCONTRACTORS PAYMENT REQUEST?
- A \_\_\_ DO NOT RETAIN  
B \_\_\_ 10% FLAT  
C \_\_\_ REFLECTS THE OWNER'S RETAINAGE POLICY  
D \_\_\_ DEPENDS ON THE RELATIONSHIP WITH THE SUBCONTRACTORS  
E \_\_\_ OTHER (PLEASE SPECIFY) \_\_\_\_\_
14. DO YOU ADD THE FINANCING COST OF THE 10% RETAINAGE INTO YOUR BID PRICE?
- A \_\_\_ NEVER                      B \_\_\_ ALWAYS                      C \_\_\_ SOMETIMES
15. 10% RETAINAGE IS A SIGNIFICANT CONTRIBUTOR TO THE CASH FLOW PROBLEM IN A TYPICAL GENERAL CONTRACTING FIRM. ITS MAJOR EFFECTS ARE LISTED BELOW. USE THE FOLLOWING GRADING SCALE TO GIVE YOUR OPINION:
- |                  |                     |                          |
|------------------|---------------------|--------------------------|
| 5 STRONGLY AGREE | 4 AGREE             | 3 NO OPINION/DO NOT KNOW |
| 2 DISAGREE       | 1 STRONGLY DISAGREE |                          |
- A \_\_\_ CUTS INTO THE ALREADY MARGINAL PROFIT MARGIN  
B \_\_\_ RESTRAINTS THE EFFECTIVENESS OF PROPER CASH MANAGEMENT  
C \_\_\_ FORCES THE CONTRACTOR TO FINANCE THIS AMOUNT  
D \_\_\_ PREVENTS THE CONTRACTOR FROM BIDDING MORE WORK  
E \_\_\_ PREVENTS THE CONTRACTOR FROM INVESTMENT OPPORTUNITIES  
F \_\_\_ OTHER (PLEASE SPECIFY) \_\_\_\_\_
16. DO YOU FEEL THAT THERE ARE OTHER MEASURES (E.G. BONDING), IN EFFECT, THAT SERVE THE SAME PURPOSE AS 10% RETAINAGE?
- A \_\_\_ YES                      B \_\_\_ NO                      C \_\_\_ DO NOT KNOW



## BLUE

17. FOR THE NEXT SERIES OF QUESTIONS PLEASE INDICATE THE DEGREE TO WHICH YOU AGREE OR DISAGREE WITH THE STATEMENT USING THE NUMBER OF YOUR CHOICE ACCORDING TO THE FOLLOWING SCALE:

5 STRONGLY AGREE  
2 DISAGREE

4 AGREE  
1 STRONGLY DISAGREE

3 NO OPINION/DO NOT KNOW

- A\_\_\_ GENERAL CONTRACTORS FRONT-LOAD THE PROJECT TO WORK AROUND THE RESTRICTION OF THE 10% RETAINAGE.
- B\_\_\_ GENERAL CONTRACTORS INCREASE REQUESTS FOR CHANGE ORDERS IN ORDER TO COMPENSATE FOR THE LIMITED AMOUNT OF CASH FLOW BECAUSE OF THE RESTRICTION OF THE 10% RETAINAGE.
- C\_\_\_ GENERAL CONTRACTORS USUALLY "SQUEEZE" THE SUBCONTRACTORS TO THE LIMIT (CREATING A VERY DIFFICULT ECONOMICAL SITUATION) BECAUSE OF THE 10% RETAINAGE.
- D\_\_\_ 10% RETAINAGE SYSTEM IS SERVING ITS PURPOSE I.E. IS PROTECTING THE OWNERS.
- E\_\_\_ THE QUALITY OF ALL CONSTRUCTION PROJECTS WILL IMPROVE IF THE 10% RETAINAGE POLICY IS REVISED TO REFLECT A MORE REALISTIC AMOUNT, OR IF IT IS REMOVED ALTOGETHER.
- F\_\_\_ BANKRUPTCIES AMONG THE GENERAL CONTRACTORS WILL DECREASE IF THE 10% RETAINAGE IS REVISED, OR IF IT IS REMOVED ALTOGETHER.
- G\_\_\_ THE RELATIONSHIP BETWEEN THE OWNER/ARCHITECTS AND THE CONTRACTORS WILL IMPROVE WITH THE REVISION OR ABOLISHMENT OF THE 10% RETAINAGE.
- H\_\_\_ ABOLISHMENT OR REVISION OF 10% RETAINAGE WILL NOT MAKE THINGS ANY BETTER IN THE INDUSTRY.

18. THE FOLLOWING ARE SOME ALTERNATIVES, USE THE FOLLOWING GRADING-SCALE TO GIVE YOUR OPINION.

5 EXCELLENT

4 VERY GOOD

3 GOOD

2 FAIR

1 POOR

- A\_\_\_ NO CHANGE IS NECESSARY. EXISTING SYSTEM HAS WORKED IN THE PAST THEREFORE IT SHOULD WORK IN THE FUTURE.
- B\_\_\_ MAINTAIN THE PRESENT SYSTEM, BUT REQUIRE OWNERS TO DEPOSIT RETAINAGE SUMS IN INTEREST BEARING ESCROW ACCOUNTS. THE INTEREST TO BE PAID TO THE CONTRACTOR ON A REGULAR BASIS OR AT THE END OF THE PROJECT.
- C\_\_\_ REDUCE THE RETAINAGE PERCENTAGE TO 5% OR OTHER MORE REALISTIC FIGURE THAT REFLECTS THE EXISTING LOW PROFIT-MARGIN CONDITIONS.
- D\_\_\_ RETAIN 10% UNTIL 50% OF THE CONSTRUCTION IS COMPLETED, AND 0% THEREAFTER (SYSTEM PRESENTLY BEING UTILIZED BY SOME PUBLIC AGENCIES).
- E\_\_\_ RETAIN 10% FROM THE FIRST 4 MONTHS PAYMENT REQUESTS (FOR JOBS 1 YEAR OR LONGER). THEREAFTER, RETAIN 10% FOR EVERY PAYMENT REQUEST, BUT START RELEASING THE PREVIOUSLY RETAINED MONIES. THE OWNER WILL ALWAYS HAVE AT LEAST 4 MONTHS WORTH OF RETAINAGE. THE BALANCE OF THE RETAINAGE AMOUNT WILL BE RELEASED AT FINAL COMPLETION.
- F\_\_\_ ELIMINATE ALL RETAINAGE AMOUNTS, SINCE PERFORMANCE BONDS AND FINAL PAYMENT CONTROL ALREADY ASSURES THE OWNER THAT THE PROJECT WILL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- G\_\_\_ ELIMINATE ALL RETAINAGE AMOUNTS, BUT REQUIRE GENERAL CONTRACTOR TO FURNISH A LINE OF CREDIT (PAYABLE TO THE OWNER AND OBTAINABLE ON THE BASIS OF THEIR CREDIT WORTHINESS) WITH A BALANCE NOT TO EXCEED 10% OF PAYMENTS MADE TO THE GENERAL CONTRACTOR AND ADMINISTERED BY A THIRD PARTY (ARCHITECTS, FOR EXAMPLE).

**BLUE**

H\_\_\_ LET PRESENT BONDING REQUIREMENTS BE EXTENDED (BY INCREASING THE AMOUNT OF COVERAGE) OR BECOME MORE RIGOROUS TO PROTECT THE OWNER AND TO JUSTIFY THE ELIMINATION OF 10% RETAINAGE.

I\_\_\_ WRITE IN OTHER SUGGESTIONS: ATTACH ADDITIONAL PAGES, IF NECESSARY.

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19. ANY OTHER COMMENTS: ATTACH ADDITIONAL PAGES, IF NECESSARY

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20. DO YOU WANT TO PARTICIPATE IN A FOLLOW-UP DISCUSSION TO BE ARRANGED AT A FUTURE DATE:

A\_\_\_ YES      B\_\_\_ NO

IF YES, PLEASE GIVE US THE FOLLOWING INFORMATION SO THAT WE CAN CONTACT YOU:

NAME: \_\_\_\_\_

COMPANY: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

TELEPHONE: (\_\_\_\_\_) \_\_\_\_\_

FAX: (\_\_\_\_\_) \_\_\_\_\_

BEEPER: (\_\_\_\_\_) \_\_\_\_\_

THANK YOU FOR YOUR COOPERATION  
DATED: OCTOBER 1991

# IVORY

## 10% RETAINAGE QUESTIONNAIRE

PLEASE RESPOND BY PUTTING A CHECK OR CROSS MARK NEXT TO THE APPROPRIATE LETTER.

TITLE OR POSITION OF THE RESPONDENT \_\_\_\_\_

1. TYPE OF FIRM/ORGANIZATION: CHECK ALL THAT APPLY

- |   |  |
|---|--|
| A___ DEVELOPER/BUILDER                  | B___ DESIGN/BUILD FIRM                         |
| C___ ARCHITECTURAL OR A/E DESIGN FIRM   | D___ GENERAL CONTRACTOR                        |
| E___ SPECIALTY CONTRACTOR/SUBCONTRACTOR | F___ CONSTRUCTION MATERIAL/EQUIPMENT SUPPLIERS |
| G___ BONDING COMPANY                    | H___ FINANCIAL (LENDING) INSTITUTION           |
| I___ CONSTRUCTION LAW FIRM              | J___ PUBLIC AGENCY OWNER                       |
| K___ PRIVATE OWNER                      | L___ PROFESSIONAL ORGANIZATION                 |
| M___ OTHER (PLEASE SPECIFY) _____       |  |

2. SIZE OF FIRM/ORGANIZATION:

- |                      |                        |
|----------------------|------------------------|
| A___ 1-3 EMPLOYEES   | B___ 4-9 EMPLOYEES     |
| C___ 10-50 EMPLOYEES | D___ OVER 50 EMPLOYEES |

3. CHIEF AREAS OF BUSINESS: CHECK ALL THAT APPLY.

- |                                  |                                    |
|----------------------------------|------------------------------------|
| A___ RESIDENTIAL                 | B___ RENOVATION/ADDITIONS/INTERIOR |
| C___ PRIVATE COMMERCIAL          | D___ PUBLIC (LOCAL/STATE/FEDERAL)  |
| E___ HEAVY (ENGINEERING/HIGHWAY) |                                    |

4. HOW LONG HAS YOUR FIRM/ORGANIZATION BEEN ESTABLISHED?

- |                              |                             |
|------------------------------|-----------------------------|
| A___ LESS THAN ONE YEAR      | B___ ONE YEAR TO FOUR YEARS |
| C___ FOUR YEARS TO TEN YEARS | D___ MORE THAN TEN YEARS    |

5. 10% RETAINAGE IS A SIGNIFICANT CONTRIBUTOR TO THE CASH FLOW PROBLEM IN A TYPICAL GENERAL CONTRACTING FIRM. ITS MAJOR EFFECTS ARE LISTED BELOW. USE THE FOLLOWING GRADING SCALE TO GIVE YOUR OPINION:

- |                  |                     |                          |
|------------------|---------------------|--------------------------|
| 5 STRONGLY AGREE | 4 AGREE             | 3 NO OPINION/DO NOT KNOW |
| 2 DISAGREE       | 1 STRONGLY DISAGREE |                          |

- A\_\_\_ CUTS INTO THE ALREADY MARGINAL PROFIT MARGIN  
B\_\_\_ RESTRAINTS THE EFFECTIVENESS OF PROPER CASH MANAGEMENT  
C\_\_\_ FORCES THE CONTRACTOR TO FINANCE THIS AMOUNT  
D\_\_\_ PREVENTS THE CONTRACTOR FROM BIDDING MORE WORK  
E\_\_\_ PREVENTS THE CONTRACTOR FROM INVESTMENT OPPORTUNITIES  
F\_\_\_ OTHER (PLEASE SPECIFY) \_\_\_\_\_

6. DO YOU FEEL THAT THERE ARE OTHER MEASURES (E.G. BONDING), IN EFFECT, THAT SERVE THE SAME PURPOSE AS 10% RETAINAGE?

- |          |         |                  |
|----------|---------|------------------|
| A___ YES | B___ NO | C___ DO NOT KNOW |
|----------|---------|------------------|

## IVORY

7. FOR THE NEXT SERIES OF QUESTIONS PLEASE INDICATE THE DEGREE TO WHICH YOU AGREE OR DISAGREE WITH THE STATEMENT USING THE NUMBER OF YOUR CHOICE ACCORDING TO THE FOLLOWING SCALE:

5 STRONGLY AGREE  
2 DISAGREE

4 AGREE  
1 STRONGLY DISAGREE

3 NO OPINION/DO NOT KNOW

- A\_\_\_ GENERAL CONTRACTORS FRONT-LOAD THE PROJECT TO WORK AROUND THE RESTRICTION OF THE 10% RETAINAGE.
- B\_\_\_ GENERAL CONTRACTORS INCREASE REQUESTS FOR CHANGE ORDERS IN ORDER TO COMPENSATE FOR THE LIMITED AMOUNT OF CASH FLOW BECAUSE OF THE RESTRICTION OF THE 10% RETAINAGE.
- C\_\_\_ GENERAL CONTRACTORS USUALLY "SQUEEZE" THE SUBCONTRACTORS TO THE LIMIT (CREATING A VERY DIFFICULT ECONOMICAL SITUATION) BECAUSE OF THE 10% RETAINAGE.
- D\_\_\_ 10% RETAINAGE SYSTEM IS SERVING ITS PURPOSE I.E. IS PROTECTING THE OWNERS.
- E\_\_\_ THE QUALITY OF ALL CONSTRUCTION PROJECTS WILL IMPROVE IF THE 10% RETAINAGE POLICY IS REVISED TO REFLECT A MORE REALISTIC AMOUNT, OR IF IT IS REMOVED ALTOGETHER.
- F\_\_\_ BANKRUPTCIES AMONG THE GENERAL CONTRACTORS WILL DECREASE IF THE 10% RETAINAGE IS REVISED, OR IF IT IS REMOVED ALTOGETHER.
- G\_\_\_ THE RELATIONSHIP BETWEEN THE OWNER/ARCHITECTS AND THE CONTRACTORS WILL IMPROVE WITH THE REVISION OR ABOLISHMENT OF THE 10% RETAINAGE.
- H\_\_\_ ABOLISHMENT OR REVISION OF 10% RETAINAGE WILL NOT MAKE THINGS ANY BETTER IN THE INDUSTRY.

8. THE FOLLOWING ARE SOME ALTERNATIVES, USE THE FOLLOWING GRADING-SCALE TO GIVE YOUR OPINION.

5 EXCELLENT

4 VERY GOOD

3 GOOD

2 FAIR

1 POOR

- A\_\_\_ NO CHANGE IS NECESSARY. EXISTING SYSTEM HAS WORKED IN THE PAST THEREFORE IT SHOULD WORK IN THE FUTURE
- B\_\_\_ MAINTAIN THE PRESENT SYSTEM, BUT REQUIRE OWNERS TO DEPOSIT RETAINAGE SUMS IN INTEREST BEARING ESCROW ACCOUNTS. THE INTEREST TO BE PAID TO THE CONTRACTOR ON A REGULAR BASIS OR AT THE END OF THE PROJECT.
- C\_\_\_ REDUCE THE RETAINAGE PERCENTAGE TO 5% OR OTHER MORE REALISTIC FIGURE THAT REFLECTS THE EXISTING LOW PROFIT-MARGIN CONDITIONS.
- D\_\_\_ RETAIN 10% UNTIL 50% OF THE CONSTRUCTION IS COMPLETED, AND 0% THEREAFTER (SYSTEM PRESENTLY BEING UTILIZED BY SOME PUBLIC AGENCIES).
- E\_\_\_ RETAIN 10% FROM THE FIRST 4 MONTHS PAYMENT REQUESTS (FOR JOBS 1 YEAR OR LONGER). THEREAFTER, RETAIN 10% FOR EVERY PAYMENT REQUEST, BUT START RELEASING THE PREVIOUSLY RETAINED MONIES. THE OWNER WILL ALWAYS HAVE AT LEAST 4 MONTHS WORTH OF RETAINAGE. THE BALANCE OF THE RETAINAGE AMOUNT WILL BE RELEASED AT FINAL COMPLETION.
- F\_\_\_ ELIMINATE ALL RETAINAGE AMOUNTS, SINCE PERFORMANCE BONDS AND FINAL PAYMENT CONTROL ALREADY ASSURES THE OWNER THAT THE PROJECT WILL BE COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- G\_\_\_ ELIMINATE ALL RETAINAGE AMOUNTS, BUT REQUIRE GENERAL CONTRACTOR TO FURNISH A LINE OF CREDIT (PAYABLE TO THE OWNER AND OBTAINABLE ON THE BASIS OF THEIR CREDIT WORTHINESS) WITH A BALANCE NOT TO EXCEED 10% OF PAYMENTS MADE TO THE GENERAL CONTRACTOR AND ADMINISTERED BY A THIRD PARTY (ARCHITECTS, FOR EXAMPLE).

## IVORY

H\_\_\_ LET PRESENT BONDING REQUIREMENTS BE EXTENDED (BY INCREASING THE AMOUNT OF COVERAGE) OR BECOME MORE RIGOROUS TO PROTECT THE OWNER AND TO JUSTIFY THE ELIMINATION OF 10% RETAINAGE.

I\_\_\_ WRITE IN OTHER SUGGESTIONS: ATTACH ADDITIONAL PAGES, IF NECESSARY.

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9. ANY OTHER COMMENTS: ATTACH ADDITIONAL PAGES, IF NECESSARY

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10. DO YOU WANT TO PARTICIPATE IN A FOLLOW-UP DISCUSSION TO BE ARRANGED AT A FUTURE DATE:

A\_\_\_ YES      B\_\_\_ NO

IF YES, PLEASE GIVE US THE FOLLOWING INFORMATION SO THAT WE CAN CONTACT YOU:

NAME: \_\_\_\_\_

COMPANY: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

TELEPHONE: (\_\_\_\_\_) \_\_\_\_\_

FAX: (\_\_\_\_\_) \_\_\_\_\_

BEEPER: (\_\_\_\_\_) \_\_\_\_\_

THANK YOU FOR YOUR COOPERATION  
DATED: OCTOBER 1991

**APPENDIX B**

**SAMPLE COVER LETTER**



**Florida International University**  
*The State University of Florida at Miami*

Department of Construction Management

October 21, 1991

Design Group Associates, Inc.  
821 Douglas Ave.  
Altamonte Springs, FL 32714

**SAMPLE**

Dear Sir/Madam:

The Department of Education of the State of Florida through the Building Construction Industry Advisory Committee (BCIAC) has awarded the Department of Construction Management of Florida International University a grant to investigate viable alternatives to the 10% retainage customarily being held from periodic contract payments.

Your participation is of great importance to the effective analysis of this critical issue and the eventual impact it will have in the construction industry. You, as an important member of the construction industry, are being requested to take some time out of your busy schedule to complete the attached questionnaire.

The main objective of this project, is to obtain input and suggestions from the construction industry, in the form of perception of the several groups that make up the industry. All the gathered data and information will be classified, analyzed and utilized for the development of viable alternatives. Information obtained from you and your company will only be presented as part of a class or group statistics and will not be singled out on an individual basis.

The findings and developed alternatives will be disseminated throughout the industry in the form of a project report.

If you shall have any questions regarding this research project please contact the Principal Investigator Dr. Irtyshad Ahmad at (305) 348-3172.

In order to complete the investigation by the scheduled time frame, we need to receive your completed questionnaire as soon as possible. This research is literally dependent on your input. Your timely response will be greatly appreciated.

Thank you in advance.

Sincerely,

Irtyshad Ahmad, Ph.D., P.E.  
Assistant Professor

## APPENDIX C

### LETTERS FROM INDIVIDUALS, COMPANIES AND ASSOCIATIONS

#### PAGE

C-2	Letter from Mark S. Woodall, Executive Director, Florida AGC Council
C-3	Letter from W.R. Greenwell of Capeletti Bros. Inc.
C-6	Letter from Jesse L. Yoder of Hillsborough County
C-8	Letter from James F. Crowder, Jr. of Kimbrell & Hamann
C-10	Letter from W. Frank DiMare of DiMare Construction Company





## Florida AGC Council *Associated General Contractors of America*

322 Beard Street • Tallahassee, Florida 32303 • Post Office Box 10569 • Tallahassee, Florida 32302-2569  
Phone 904/222-2421 • Fax 904/222-2911

November 4, 1992

Dr. Irishad Ahmad  
Assistant Professor  
Department of Construction Management  
Florida International University  
University Park  
Miami, FL 33199

Dear Dr. Ahmad:

As per your request, enclosed please find National AGC and the Florida AGC Councils position concerning alternatives to 10% retainage.

- \* AGC supports the policy of 5% retainage throughout the project except when the owners retainage is greater than 5%, in which case the higher amount would govern, and provided that the security between the G.C./Subcontractor is the same as that between the G.C./Owner.

This position is the consensus opinion of all National AGC Committees and the Florida AGC Council, and is slightly different than the policy I reported to you earlier.

Please feel free to utilize this information in your study for the BCIAC, and do not hesitate to contact me if I can be of any further assistance.

Very truly yours,

Mark S. Woodall  
Executive Director

Representing and Serving



Florida AGC Chapters

Northwest Florida

Northeastern Florida

Mid-Florida

Florida East Coast

South Florida

***"Build with the Best"***

capeletti bros. inc.



engineering  
contractors

P. O. BOX 4944 • HIALEAH, FLORIDA 33014 • 823-9500

December 6, 1991.



Florida International University  
Department of Construction Management  
College of Engineering & Applied Sciences  
University Park, VH 230  
Miami, Florida 33174-9973

Attention: Dr. Irtishad Ahmad, P.E.

Re: 10% Retainage Questionnaire

Gentlemen:

The enclosed questionnaire was completed by the writer; however, rough drafts were distributed for critique to key people in our organization, i.e. our In-house Counsel, Comptroller, Chief Engineer/Chief Estimator, General Superintendent and Joe Capeletti, the President of our company.

The consensus was that my answers were contradictory, which I admit is true. I strongly believe that if a 100% Performance and Payment Bond is furnished to the Owner by the Contractor, then retainage should not also be required. However, I also realize that many owners who have had to deal with Surety Companies to finish a defaulted project have found that they needed retainage monies to cover current and ongoing costs, because of the delay tactics of Surety Companies in funding the completion of defaulted projects.

Maybe one of the solutions would be for Owners to demand better bonds, whereby they can make stronger demands on the Surety Companies. As a direct consequence, this might compel the Surety Companies to be more selective in furnishing bonds only to the best contractors,--companies who are not just licensed contractors but also completely equipped construction organizations,--i.e. having the necessary equipment, control of required materials, qualified personnel, financial responsibility, etc. with a history of satisfactory performance.

In my opinion, one of the reasons for the "dog-eat-dog" competition in our industry today is because Surety Companies are not sufficiently selective in furnishing bonds. It requires considerable investment and fixed overhead costs to maintain a complete, experienced, well equipped, financially responsible general contracting organization;--and it's impossible for such companies to compete with brokers and charlatans who manage to put together a financial statement that impresses the Surety Company enough to obtain bonding for projects they are not really equipped

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Florida International University  
December 6, 1991.  
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to perform. Needless to say,--such companies, with everything to gain and nothing to lose, are very adept at turning in low bids. As our Chief Estimator says,--"It's not hard to be low bidder, but it's something else to be the low bidder with a price that covers all direct and indirect costs, contingencies and a reasonable profit".

The retainage policy of the Florida Department of Transportation for many years was 10% of monies earned until 50% of the contract was complete;--then 5% until 90% was complete; then 2-1/2% until final acceptance; then, if no problems were ongoing (no disputed claims, etc.) the Department might hold only a nominal retainage (1/2%) while the final review of quantities and other paperwork is being finalized prior to final payment. This policy seemed to work very well; however, contractors feel that all retainage monies should be placed in interest bearing accounts with the interest accruing to the account of the contractor.

As you probably know, the F.D.O.T. now allows contractors to substitute securities for retainage, and thereby obtain the release of retainage monies and earn interest on the securities. But many contractors do not have securities to furnish.

We have strongly believed for many years that Surety Companies (and Owners) fail to give proper consideration to "complete contractors",--firms that not only have the key administrative personnel necessary but also equipment, finances, etc.--and produce and/or manufacture the materials required for a project. Such companies are gradually disappearing from the scene, because they cannot compete with "brokers" who have only invested in a telephone, bid jobs at cost (or below cost) and make their profit by "shopping" the prices of subcontractors to the point that the subs also live on the edge of bankruptcy from job to job. In our opinion, the Owners--especially government contracting agencies,--need to somehow help the "complete contractors" survive. If they are honest, they will admit that the project goes much smoother, in both the field and the office, when a prime contractor is a legitimate general contractor than when a "broker" is building the job with umpteen subcontractors and a multitude of suppliers. The only jobs that we have had a major difficulty in performing were jobs where we subcontracted to others the controlling items of work. In our opinion, no contractor should be awarded a contract who is not properly organized and equipped and in possession of the financial resources to perform the controlling items of work on a contract!

It's encouraging to know that colleges are looking for input from contractors in order to better understand the problems in the construction industry. Unfortunately, most contractors, including

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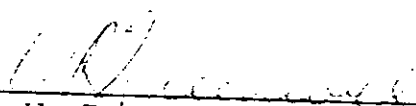
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Page Three

ourselves, seldom take the time to participate. Hopefully, in this instance, our input will help you to help our industry.

Very truly yours,

CAPELETTI BROS., INC.

  
W. R. Greenwell

, Secretary

WRG:ago

Enclosures

c.c. Joe Capeletti

P.S. Also enclosed are changes in some of my answers on the questionnaire and comments pertaining to same, which were made by the people I asked to critique my responses.

BOARD OF COUNTY COMMISSIONERS  
HILLSBOROUGH COUNTY, FLORIDA

Office of the County Administrator

Frederick B. Karl  
County Administrator



P.O. Box 1110  
Tampa, Florida 33601

December 20, 1991

Irtishad Ahmad, Ph.D., P.E.  
Assistant Professor  
Florida International University  
The State University of Florida at Miami  
Department of Construction  
College of Engineering & Applied Sciences  
Miami, FL 33174-9973

**Subject: Administrative Referral 21999 - Questionnaire regarding  
construction industry/retainage**

Dear Mr. Ahmad:

Enclosed find a completed questionnaire regarding a 10% retainage in the construction industry. Hillsborough County appreciates the opportunity to participate in this survey.

Hillsborough County's construction contracts currently require 10% retainage until 50% of the project is complete. The contractor may then request that no more retainage be withheld. If the Project Manager feels that the progress of the job and quality of work is acceptable at that point, no additional retainage will be withheld, unless the progress of the work or the quality of the work deteriorates to the point that the Project Manager feels that additional retainage is required.

We feel this is an adequate compromise to the traditional method of withholding 10% retainage throughout the project. We do not feel that performance bonds take the place of retainage. A performance bond is intended to provide insurance that the project will be completed should the contractor default through no fault of the owner. I am sure you are aware of the difficulty that is involved in pursuing performance bonds. Retainage, on the other hand, provides the owner with a less cumbersome method of addressing certain elements of the work that may be ignored by the contractor, particularly at the final closeout stage. With the requirement of retainage well known ahead of time, I do not feel it presents an unsurmountable problem to contractors in their financial planning. With the litigious and claims oriented atmosphere in construction today, an owner, particularly a public owner, must protect itself and its citizens from contractors that do not perform, but where calling in the bond may not be in the best interest of all the parties.

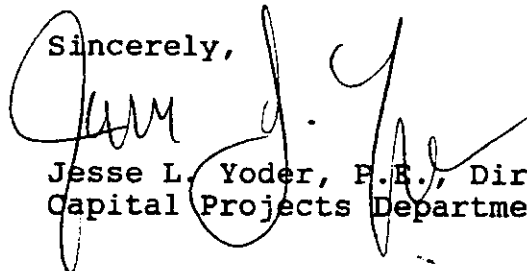
Irtishad Ahmad, Ph.D., P.E.  
Page Two  
December 20, 1991

I do feel there is some merit in considering that the interest earned on the retainage go to the contractor. This would appear to provide some measure of comfort to contractors who feel that their cash flow and financial planning is adversely affected by the retainage requirements in contracts.

I do not feel that removing the retainage requirement will necessarily result in less claims, or better working relationships between owners and contractors. If a contractor is of the mind-set to pursue claims on a project, or the owner is not willing to adopt a reasonable attitude towards dealing with extra work, an adversarial relationship will arise due to specific claims, irrespective of whether retainage is withheld or not.

I would be happy to discuss Hillsborough County's experience with retainage with you if you so desire. I can be contacted at the Capital Projects Department, (813) 272-5275.

Sincerely,



Jesse L. Yoder, P.E., Director  
Capital Projects Department

sjb  
Enclosure

cc: Larry N. Blick, Senior Assistant County Administrator  
Swati Bose, R.A., Manager, Architecture Services  
Lynne Fillmon, Manager, Contracts Management  
Robert R. Gordon, Acting Manager, Projects Management  
DC 00221/6.0 - 3421999.IA

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JOS. W. WOMACK

December 6, 1991

Irtishad Ahmad, Ph.D., P.E.  
Assistant Professor  
Department of Construction Management  
College of Engineering and Applied  
Sciences  
Florida International University  
University Park  
Miami, FL 33199

Dear Dr. Ahmad:

I have returned your questionnaire regarding your investigation of alternatives to the 10% retainage withholding procedure currently in wide use in the construction industry.

I have been fortunate to be able to limit my practice to the representation of bonding companies for the past 15 years and would be happy to become involved in any phase of the learning process in your department by presenting the surety's viewpoint on healthy construction projects and those which go into default.

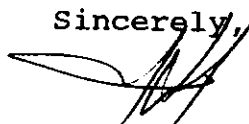
I have enclosed my CV which will give you an idea of the areas in which I have published and lectured. I am currently serving as an advisor to the American Law Institute in drafting the Restatement of Suretyship 3rd, and I have also served on various committees of the Forum Committee on the Construction Industry sponsored by the American Bar Association.

Please give me a call if I can be of assistance. It seems quite apparent from much of what I read, including your questionnaire, that the bonding company's role in the construction process and its entitlement to priority is much misunderstood.

Congratulations on being awarded the grant by the State of Florida, Department of Education. My hope is that we will be able

to find some way to shore-up the state and national economies to a point where the construction industry will again flourish in South Florida.

Sincerely,

A handwritten signature in dark ink, appearing to be 'JFC', written over a horizontal line.

James F. Crowder, Jr.

JFC/aes





CONSTRUCTION COMPANY

3545 U.S. 1 South  
St. Augustine, Florida 32086  
Telephone (904) 797-3328  
FAX 797-4341

4241 Baymeadows Road • Suite 21  
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November 8, 1991

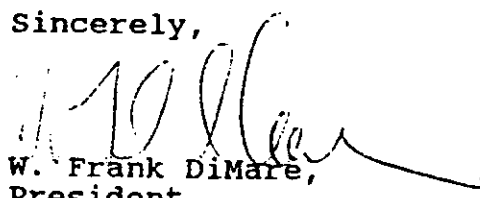
Irtishad Ahmad  
Florida International University  
College of Engineering  
University Park, Miami, FL 33199

Dear Sir:

I have seen that you are conducting an investigation of Viable Alternatives to the 10% Retainage in the Construction Industry. I am very interested in the results of your investigation.

Please make available to us your findings.

Sincerely,



W. Frank DiMare,  
President

WFD/bg

## BIBLIOGRAPHY

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