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ALTERNATIVE BID-EVALUATION AND CONTRACT-AWARD SYSTEMS

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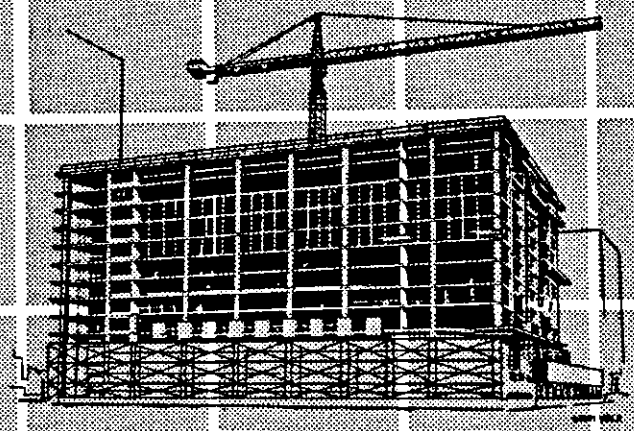

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1998

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EXECUTIVE SUMMARY

This project was initiated by the Building Construction Industry Advisory Committee (BCIAC) as a part of their continuing effort to aid the construction industry in the state of Florida. Persisting problems of inferior quality of constructed facilities, high incidence of claims and litigation, and frequent cost and schedule overruns prompted the Committee to undertake this study on alternative bid-evaluation and contract-award procedures. Questions were raised regarding the purpose and effects of the traditional low bidding method of awarding construction contracts. Is the low bidding method contributing to these problems?

This research project was undertaken to seek answers to the questions posed above and to examine and explore alternative systems for evaluating bids and awarding contracts.

An extensive literature search was carried out to identify different practices, a questionnaire survey was conducted among the different groups that make up the construction industry in the state of Florida, and interviews were conducted with selected industry professionals and agency officials.

A number of alternatives are presented and discussed in this report; some of these alternatives are in use in other countries and industries, and some are emerging. Federal Government regulations and Florida statutes are reviewed to examine the objectives and intent of the law on this issue.

We found that many public agencies are showing interest in alternative contract-award methods. Concerns about quality, time overrun and disputes/claims are probably the reasons behind this renewed interest among the public agencies in the U.S. Both Federal and State law permit competitive negotiated methods and selection of contractors based on an evaluation of factors other than price under very special circumstances.

The investigators identified several alternatives, some of these alternatives work under a competitive bid

framework and others in a negotiated bid atmosphere. The way these methods function and their relative advantages and disadvantages are pointed out.

Perceptions and opinions of survey respondents on different bid-evaluation methods are summarized and presented.

The investigators recommend:

that a pilot project be undertaken to compare the low bidding method with the average bidding procedure;

that an investigation be undertaken to identify problems associated with the prequalification procedure with an objective to make the process of prequalification effective and meaningful;

that competitive negotiation procedures such as the RFP method should be examined to address the contractors' concerns;

that public agencies should provide bill of quantities, where appropriate, to the potential bidders along with project plans and specifications;

that the public agencies should attempt to improve the quality of design document.

It is hoped that the findings of this study, will provide the basis to undertake more elaborate studies for actual comparison between different alternatives, will enable the investigators to focus on appropriate issues and factors, and will provide information to those who are responsible for and authorized to introduce modifications in the process with an objective to create a healthy construction industry in the state of Florida.

A copy of this report may be obtained by contacting:

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FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Findings

The ultimate consequence of a slow economy combined with fierce competition translates into shrinking profit margins for contractors, subcontractors, and those who are dependent on the construction industry for their income. It also hurts the owners and the public agencies in the form of delayed construction, inferior quality and adversarial relationships. Is the traditional competitive low bidding method adding to these problems? If so, what are the alternatives?

This research project was undertaken to investigate the questions posed above. The traditional practice of competitive low bidding was considered as one of the possible factors that might be contributing to some of the problems facing the construction industry. 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, if necessary, by the industry participants.

The major findings of this research, developed through literature search, questionnaire survey and interviews, are summarized in the following. The investigators identified the following items that they recommend should be considered by the public agencies, legislature and various construction industry associations and organizations.

- Many public agencies (federal, state and local) are demonstrating renewed interest in finding alternative contract-award methods. Deteriorating quality of

construction, frequent schedule overruns, and increasing disputes with the contractors in recent years may have prompted these public agencies to search for better alternatives.

- Government regulations, including Florida Statutes and Florida Administrative Code, require that the qualified or responsible low bidder should be selected for public construction projects. Under special circumstances, such as, in case of an emergency or in the best interest of the state competitive negotiation procedure for selection of a construction contractor is allowed.
- Competitive methods based on average bidding are used in some European and Asian countries. This system is intended to ensure a fair and reasonable price for the contractors. Whether or not the average bidding method has the potential to reduce claims/disputes, and to improve quality of construction could not be verified. Information for a meaningful comparison does not exist in the state of Florida. In the United States this method is nonexistent; many never heard of it. The countries, where this method is used are not, in general, free from such problems as, low contractor profit, high number of claims, and inferior quality of constructed facilities. Moreover, contract methods (design/build, turnkey, etc.) cultural setting, and typical industry norms/traditions in these countries are widely varied. It would be wrong to attribute any positive feature that can be found in the construction industry of these countries to their practice of average bidding method. There are concerns that if this method is introduced cost of construction

would go up and whether or not the method would benefit the owners/public agencies cannot be predicted with certainty.

- Newer methods that are being developed and tried by some public agencies in the United States mostly work within a competitive evaluation framework. Evaluation of factors, such as schedule, technical merit, qualification of staff, financial strength, etc. are given importance. Request for Proposal (RFP) method is becoming increasingly popular among public agencies, including GSA and the US Army Corps of Engineers. The law, however, restricts the use of competitive negotiation procedures. Use of these methods is allowed only under very special circumstances, and only after meeting a stringent set of criteria.
- Prequalification procedure, although permitted under law, was not found to be used to its fullest extent. About 50% of the public agency respondents to our survey indicated that the low bidder is selected on the basis of either price or price and responsiveness only. One probable reason for this is that the process of prequalification involves some degree of subjectivity. Public agencies usually avoid applications of subjective judgment in their attempts to stay away from potential lawsuits.
- Poor quality of design document, incomplete and inadequate set of plans and specifications, and lack of an effective prequalification procedure were cited by many interviewees as reasons for problems, such as, excessive change orders, disputes, and delay in construction.

- Quantity surveying, a common feature in the European construction industries, is rarely used in the United States. Recently Florida DOT and other public agencies have begun using similar methods. This practice enforces a standard method of measurement to measure facility component quantities. It also provides a description of the different work items and their quantities in the form of a bill of quantity for each facility. The bill of quantities are given to the competing contractors along with the plans and specifications. Thus contractors are not required to do the takeoff for bidding.
- Most of the respondents to our survey felt that competitive low bidding method is responsible for low contractor profit. This method was also perceived to have negative effects on disputes/claims, project quality and duration. Although many respondents did not know much about the average bidding method, it was thought to have positive effects on quality, duration and relationship among the project participants. Many respondents, however, felt that it would increase owners' cost. Competitive negotiated method was also favored by many construction organizations as well as by the public agencies. About 50% of the public agency respondents, however, felt that this procedure may not save owners' cost. The methods based on subjective evaluation of factors other than cost was also favored by most of the respondents in both groups. These methods were considered to have positive impacts on attributes, such as, contractor profit, owner cost, and quality. Many of the construction organizations that responded to our survey were in favor of some kind of modification in the

system; most public agencies, however, are not. A majority of the respondents in both groups favored application of prequalification procedure along with the low bidding system.

These responses must be interpreted on the basis of the fact that most of the construction organization and the general contractor respondents to our survey were small to medium companies. About 71% of the construction organization respondents had less than 25 employees, and 37% of them had an annual sales volume of less than $5 million. 46% of the responding general contractors, the largest group among the construction organizations that responded, had less than $5 million in annual sales. It should also be noted that only 22% of the responding construction organizations were involved in public construction. About 47% of the general contractor respondents were engaged in private commercial construction.

- The AGC (Associated General Contractors) of America is opposed to procedures that are based on subjective evaluation of factors. AGC is in favor of using the competitive low bidding method and asserts that it is fair to both the contractors and the owners. AGC believes, most of the problems being attributed to the competitive low bidding method can be avoided with appropriate additional measures. The ASA (American Subcontractors Association) favors average bidding method along with the provision of submitting subcontractor listing with the bid. ASA contends, subcontractors are the worst sufferers of the low bidding system. The investigators could not obtain any official position of

ABC (Associated Builders and Contractors) on this issue.

Conclusions

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

- The US construction industry is suffering from problems such as inferior quality of construction, excessive disputes/claims, adversarial relationship, and cost and schedule overrun. The Florida construction industry is not an exception. The findings of this investigation, however, do not provide any evidence that these problems can be attributed solely to the traditional low bid method of awarding contracts. A slow economy combined with excessive competition may have caused these problems.
- The alternative, based on selecting the winning bid closest to the average of bids submitted is well-intended but it is difficult to ascertain whether it will bring the much desired positive results in the US construction industry. Typical problems associated with the low bid method would still be present with the average bidding method. It is certain that contract price will go up. But it cannot be claimed with any amount of certainty that the long-term effects on disputes/claims, change orders, relationship, etc. would be beneficial to the industry and the public.
- Competitive negotiation, and evaluation based on factors other than price, are allowed by law under certain restricted situations and are being practiced by many public agencies.
- Prequalification requirements are not rigorously implemented in the public sector.

- Contractors have problems with the quality of design document.

Recommendations

Following are recommendations based on the findings of this study.

- A pilot project should be undertaken by one of the public agencies in the state of Florida to compare alternatives. In particular, the average bidding procedure should be compared with the low bidding method. The selected public agency should award comparable contracts using both methods. Parameters, such as, number and magnitude of change orders, number and amount of claims, cost and schedule overrun/underrun, owner/GC and GC/sub relationships, and project quality should be monitored for a valid comparison. Without such comparable data it would not be proper to recommend one particular method over another.
- An investigation should be undertaken to seek answers to the following questions on the prequalification procedure. What are the problems and obstacles that make the prequalification provision ineffective? How can the prequalification process be made more objective and effective? And, how can it be used more meaningfully? Effective application of the prequalification provision can minimize many of the problems of public sector construction. If there are barriers that inhibit effective use of prequalification procedure, those should be identified and eliminated. Submission of unrealistic low bids can be avoided by enforcement of an effective prequalification procedure.
- Public agencies should take measures to improve the

quality of design documents. Owners should attempt to save costs by good planning, complete design, reliable estimate and accurate specification, not just by dependence on the low bid method. Pre-bid conferences can be used to invite suggestions on how design documents can be improved.

- Public agencies should consider the practice of providing bill of quantities to potential bidders. This is a common practice in many European countries including Great Britain. It is considered efficient for the owner to furnish contractors with a "quantity survey" or a bill of quantities to save them the duplicated efforts of each doing their own quantity survey or takeoffs. The primary function of this practice is to use the standard methods of measurement (1) to produce a bill of quantities for contract and (2) to measure constructed quantities for final payment. This practice would reduce variations in bids submitted, and the chances of making mistakes by the low bidder would be less.
- Competitive negotiating methods (RFP/RFQ), being used by many public agencies, should be carefully examined to verify if they are benefitting the industry, to identify problems if there are any, and to suggest remedies to correct them. Contractors' concerns with these methods should be addressed and at the same time public agencies should be allowed to use these methods if they are indeed effective in improving quality of construction and in reducing project completion time.

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Chapter 1

INTRODUCTION

1.1 The Problem Statement

The customary practice of awarding contracts to a low bidder was established to ensure the lowest cost for completing a project. In public construction works, this practice is almost universally accepted since it not only ensures a low price but also provides a way to avoid nepotism and corruption. In today's construction market, competition is fierce and the situation has changed giving rise to the question whether the traditional practice of awarding contracts on the basis of the low bid is still appropriate. The traditional low bid method of awarding contracts has recently been made a target for criticism. This method has been blamed for causing many industry problems, such as, inferior quality of completed projects and high incidence of claims and litigations. A trend toward finding alternative methods is evident among the public agencies. The questions of whether the quality of construction projects is being negatively affected by this practice, whether the relationship among the project participants (owners, architect/engineers, contractors/subs) is more adversarial because of this practice, and whether the overall productivity of the construction industry is declining because of this practice are being raised by concerned individuals and groups in the construction industry. Funding of this project by the Department of Education of the state of Florida through the Building Construction Industry

Advisory Committee (BCIAC) is a manifestation of the fact that these concerns exist.

Recently (January 1993) the staff of the Senate Committee on Governmental Operations of the state of Florida completed a review of the "Qualified Low Bid Method of Awarding State Construction Contracts."[1] In October 1992, the Senate President assigned the Senate Committee on Governmental Operations the task of reviewing the qualified low bid method. The background and recommendations of this review will be discussed in a later section of this report. It is apparent that the concerned authorities feel the necessity to re-examine and re-evaluate the customary low bid method of awarding construction contracts.

Robert Morse Associated, a source of financial data, indicates that since 1972 contractor's earned profit on sales or revenue has decreased from approximately 6% to a 1986 rate of less than 3%[2]. This trend suggests that the contractors will be making even lower profits in the 1990's decade due to increased competition, increased risk-sharing, over-built areas, and market reductions. In their desperate attempt to stay in business, contractors often forego profits. Some of the consequences of this problem are:

- Bankruptcies and business failures among the

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[1] "A Review of the Qualified Low Bid Method of Awarding State Construction Contracts," By staff of the Senate Committee on Governmental Operations, State of Florida, January 1993.

[2] Adrian, J.J. (1987). *Construction Productivity Improvement*, Elsevier, New York, N.Y. pp. 5-7.

contractors (in particular those who are small to medium) and subcontractors are climbing at an alarming rate;

- Fewer contractors can qualify for surety bonds;
- Lower profit margins resulting in less protection (health insurance coverage, workmen compensation, etc.) for workers and employees;
- Lack of incentive for using and developing new technology; and
- Reduction in apprenticeship training or educational program for improving craftsmanship.

In addition to these industrial and societal effects there might be other consequences of the current contract-awarding system that result in increased cost and lower productivity. For example:

- Tremendous increase in disputes, claims and lawsuits.
- Increasing disagreements and disputes over change orders.
- Decreasing quality of constructed facilities due to the use of substandard materials and short-cut methods.
- Reduction or elimination of funds used for ensuring safety thus promoting chances of accidents and injuries.

1.2 Justification for Investigation

In the United States, as well as in Florida, specially in the public sector, competitive low-bid method of awarding contracts is the most common procedure. Alternative procedures, although practiced in other countries and, to some extent, in the U.S. private construction industry, did not receive serious consideration in the U.S. public sector construction. The industry must be aware of the alternatives, that are

available and that can be developed. The potential of these alternatives and their effectiveness in alleviating the problems mentioned above should be explored. The opinions, perceptions, and experiences of the organizations and individuals in the construction industry should be known and communicated to the authorities. Alternative systems should be investigated to evaluate their potential of lowering project costs, increasing contractor profits, improving quality of construction, and reducing disputes.

This research project was undertaken mainly to identify the alternative bid-evaluation and contract-award procedures. The study focuses on the effects or consequences of the competitive low-bid method as perceived in the construction industry. An attempt is made to evaluate the identified alternative methods against perceived outcomes. The research is conducted in three main parts: literature search, questionnaire survey, and interviews.

Chapter 2
OBJECTIVES AND SCOPE OF RESEARCH

2.1 Objectives

The main objective of this research project is to examine and explore alternative systems for evaluating bids and awarding contracts. In specific terms, the following issues will be investigated:

- Rationale behind using the customary low-bid system and the changed reality in today's construction industry;
- Systems used in other nations, their background and basis; and
- How and where an alternative method might bring positive changes.

In this research project, an extensive literature search was carried out to identify different practices, a questionnaire survey (prepared based on the literature search) among the different groups in the construction industry was conducted, and interviews were conducted with selected individuals in an attempt to elicit opinions and suggestions.

It is hoped, that the findings of this study will provide the basis to undertake more elaborate studies for actual comparison between different alternatives, will enable the investigators to focus on appropriate issues and factors, and will provide information to those who are in a position to bring changes with an objective to create a healthy construction industry in the state of Florida.

2.2 Scope of the Project

The results of the literature search, compiled data from the questionnaire survey, and the summary of the interviews are presented in this report. Some alternatives are identified in this report. Features and advantages/disadvantages of each have been pointed out. Legal basis and government regulations pertaining to the issue of public construction contract-award procedures are covered in this study. The authors do not endorse any particular alternative. The alternatives discussed in this report would, however, enable public agency officials and private owners to consider more options. Further research and investigation must be carried out before the industry, and the legislature, can reach a consensus to change the existing system and adopt alternate methods of evaluating bids and awarding contracts.

The findings of the study, as reported herein, will be disseminated by BCIAC throughout the industry.

2.3 Organization of the Report

The 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 competitive low bid practice, identified alternatives and recommendations are presented.

INTRODUCTION AND OBJECTIVES (CHAPTERS 1 & 2) - In this section problems arising from competitive low bidding practice 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.

LAWS, REGULATIONS AND RULES (CHAPTER 3) - Federal Acquisition Regulation, state of Florida statutes and Florida Administrative Code relevant to construction contract awards are reviewed in this chapter. Specific provisions applicable to building construction activities of the Department of Management Services and the Board of Regents are examined in detail.

ALTERNATIVES, ISSUES AND CONCERNS (CHAPTER 4) - Background of the competitive low bidding procedure and related issues are discussed in this chapter. Alternative contract-award procedures including several variations of average bidding method and competitive negotiation procedure are described. Important issues are discussed and concerns about different alternative procedures are highlighted.

RESEARCH METHODOLOGY (CHAPTER 5) - 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 6) - Detailed description of the survey questionnaire, and profiles of the groups surveyed are included in this chapter. It also contains the statistics on the response of the survey.

SURVEY RESULTS (CHAPTER 7) - The results of the questionnaire survey are presented in this chapter. The

analysis is presented using charts and tables. Opinions and additional comments made by the respondents are included in this chapter.

INTERVIEWS (CHAPTER 8) - This chapter contains excerpts of the interviews conducted 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.

Chapter 3
LAWS, REGULATIONS, AND RULES

3.1 General

Most governmental agencies (including federal, state and local) have statutes requiring submission of competitive bids for construction projects. Many of these statutes require agencies to award such contracts to the "lowest responsible bidder." In some statutes the word "responsive" is inserted to require that a successful bid must also be adequately responding to the requirements of the project as specified. While it is not too difficult to determine whether a bid is responsive, it takes considerable amount of time and effort to ascertain whether a bid is responsible. "Responsible" generally refers to the apparent low bidder's quality, fitness, and capacity to perform the proposed work satisfactorily. "Responsible" means more than simply financially responsible. The bidder must also have the requisite judgment, skill, ability, and integrity to perform the contract according to its terms.[3] For two reasons application of this requirement becomes difficult. First, there is generally a narrow window of time available between a bid opening and the award of the bid. Second, although the law allows agencies to reject any or all the bids, the rejection

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[3] Cole, E. K. and Goldblatt, S. M. "Award of Construction Contracts: Public Institutions' Authority to Select the Lowest Responsible Bidder," *Journal of College and University Law*, Vol. 16, No.2, 1989, pp. 177-87.

cannot be done arbitrarily or in bad faith. When it is the low bid which is rejected, particularly close scrutiny of the reasons given for the rejection is warranted. For these reasons, the decision to reject a low bid on the ground that the bidder was not responsible enough is dependent on the discretion of the agency. In most cases some degree of subjectivity gets involved in the process of determining whether a particular bidder is responsible. As a consequence, this kind of rejections frequently gives rise to resentment and usually end up in court. To avoid these problems, many public agencies take only responsiveness of the bid in consideration before making award decisions. Some public agencies use a stringent and specific set of prequalification procedures.

In Florida, section 255.29 of the Florida Statutes, require that the state building projects be awarded to the lowest "qualified" bidder. In general, the term "qualified" is used to mean that the bidder is responsible. Responsible or qualified bidder is defined in section 60D-5.002 (19) Florida Administrative Code (F.A.C) as a firm with the capability in all respects to perform fully the contract requirements and the integrity and reliability to assure good faith performance.

Under special circumstances federal and other public agencies permit awarding of contracts on a non-competitive or negotiated basis.

3.2 Federal Acquisition Regulations

Sealed bidding is the preferred method to select a construction contract for the federally funded projects

as stated in the Federal Acquisition Regulations (FAR) part 14. Sealed bidding is defined as a method of contracting that employs competitive bids, opening of bids, and awards. It involves:

(1) Preparation of invitations for bids (IFBs) that describe (clearly, accurately and completely) the Government's requirements;

(2) Publicizing the IFB's through distribution to prospective bidders, posting in public places, and such other means as are appropriate;

(3) Submission of sealed bids to be publicly opened at the times and places stated in the IFBs;

(4) Evaluating bids without discussions; and

(5) Awarding contracts to those responsible/responsive bidders whose bids, conforming to the IFBs, will be most advantageous to the Government, considering only price and price-related factors included in the invitation (FAR 14.101).

Sealed bidding must be used if the following four conditions are present:

(1) There will be enough calendar time to carry out the procedure prescribed by regulations.

(2) Price and price-related factors will be the basis for award.

(3) It will not be necessary to conduct discussions with the responding offerors about their bids; and

(4) There is a reasonable expectation of receiving more than one sealed bid.

If any of these conditions is not present, the contracting officer should document the circumstances and proceed to negotiate the acquisition (FAR 6.401).

A contract award should be made by written notice within the time specified for bid acceptance to the responsive and responsible bidder whose bid will be most advantageous (usually low) to the Government, price and price-related factors considered.

A responsible bidder is defined as a prospective contractor who has adequate financial resources to perform (or ability to get them), is able to comply with the delivery or performance schedule, has a satisfactory record of performance, integrity and business ethics, has the necessary organization, experience, etc., controls and skill (or the ability to obtain them), has the necessary production, construction, and technical equipment and facilities.

Price-related factors include foreseeable costs or delays to the Government resulting from differences in inspection, locations of supplies and transportation; IFB changes, made or requested by a bidder, that do not constitute a basis for bid rejection; advantages to the Government that might result from making more than one award; Federal, State and local taxes, and origin of supplies (foreign or domestic) (FAR 14.201-8).

As mentioned earlier, if certain condition is not present, the contracting officer may use the method of contracting called negotiation. FAR 15.101 states, "Negotiation means contracting through the use of either competitive or other than competitive proposals and discussions. Any contract that is awarded without using sealed bidding procedures is a negotiated contract."

An acquisition may be started as a sealed bidding procedure but under certain circumstances be converted to

negotiation. Thus, under a sealed bidding procedure, if:
(1) only one bid is received and it cannot be determined that the bid price is reasonable;
(2) no responsive bid has been received from a responsible bidder; or
(3) bids received were not independently arrived at in open competition, were collusive, or were submitted in bad faith, the contracting officer may break off the sealed bidding procedure and begin to negotiate without a new solicitation. That is, if the agency head has determined that the use of negotiation is appropriate and the following conditions have been met (FAR 15.103):
(1) Before beginning such negotiation, the contracting officer must have notified each responsible bidder of the intended negotiation and given each a reasonable opportunity to negotiate.
(2) The award price negotiated must be the lowest negotiated price offered by any responsible bidder.
(3) The award price is lower than the lowest rejected bid price of responsible bidder.

Compared to sealed bidding, negotiation is a more flexible procedure that includes the receipt of proposals from offerors, the concept of bargaining and the opportunity to revise proposals before awards of contracts. Bargaining may apply to price, schedule, technical requirements, type of contract, or other terms of a proposed contract. Nevertheless, there are regulatory requirements that must be met prior to proper award of a negotiated contract.

3.3 Florida Statutes that Regulate State Building Construction Contracts

3.3.1 History

Competitive bid process is intended to secure fair competition on equal terms to all bidders and to protect the public. Florida courts on numerous occasions, found that competitive bidding protects the public against collusion, favoritism, and fraud in the award of public contracts.[4] For many years, chapter 255, F.S. (statute that regulates the bidding and letting of contracts for state building construction projects in Florida) did not have any specific requirement for either the submission of the competitive bids or the selection of the qualified low bidder. The competitive bid process has evolved to limit the discretion of the public agency officials in the choice of the contractor. While for many years there was no specific requirement that state building construction projects be competitively bid and awarded to the lowest qualified bidder, as a matter of practice, contracts were awarded to the bidder who offered the lowest bid that met all the contract specifications.[5]

The qualified low bid method became the statutory standard for awarding competitively bid contracts in Florida on July 1, 1975. Section 255.29 F.S. was added to ch. 255 F.S. By this addition the then Department of

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[4] "A Review of the Qualified Low Bid Method of Awarding State Construction Contracts," By staff of the Senate Committee on Governmental Operations, State of Florida, January 1993. p. 11.

[5] Ibid., p. 13.

General Services (DGS) was required to adopt administrative rules governing bid solicitation, contract negotiation, and contract awards for the construction of public buildings and other public facilities.

3.3.2 Requirements of Section 255.29 Florida Statutes

An excellent summary of the regulations and rules of the state of Florida is given in the report, mentioned earlier, prepared by the Senate staff of the Committee on Governmental Operations.[6]

In the following, a brief overview of the Florida statutes and Administrative code is provided.

Section 255.29 Florida Statutes provides that the Department of Management Services (S 4 Ch. 92-279 renamed the Department of General Services as the Department of Management Services) shall establish procedures for awarding each state agency construction project to the lowest qualified bidder. Procedures for determining the qualifications and responsibility of potential bidders to perform the work required by a proposed contract should also be established by the Department. The Department can make exceptions to this general provision under the following three circumstances:

(1) When a valid emergency exists which would necessitate the waiver of the rules governing the awarding of state construction contracts to the lowest qualified bidder. In such cases the Department would also establish

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[6] "A Review of the Qualified Low Bid Method of Awarding State Construction Contracts," By staff of the Senate Committee on Governmental Operations, State of Florida, January 1993.

procedures to be followed.

(2) When the executive director of the Department determines that entering into negotiations for construction contracts would be in the best interest of the state. The Department may also decide to negotiate modifications to contract documents in the best interest of the state. Under such circumstances, the Department would establish procedures to govern negotiations.

(3) When the Department determines that entering into performance-based contracts would be in the best interest of the state. In such cases the Department shall establish procedures regarding (a) prequalification of bidders, (b) criteria to be used in developing requests for proposals which may provide for design-build contracts, developer flexibility in selecting materials, construction techniques, and application of state-of-the-art improvements, (c) fast track construction under which development of plans and designs, and construction are performed simultaneously, and (d) evaluation of proposals and award of contracts considering such factors as price, quality, and concept of the proposal.

It is apparent that the preferred method is to award construction contracts to the qualified low bidders although negotiated bids (both competitive and noncompetitive) are allowed under special but rare circumstances.

While s. 255.29 F.S. establishes general bid-evaluation and contract-award standard and outlines requirements of construction of state-owned buildings, it does not provide specific procedures to be followed. According to the statute the then Department of General

Services was required to adopt rules of procedure to implement the provisions of the section. Those rules are codified in ch. 60D-5, Florida Administrative Code (F.A.C.). In addition to these rules, the Board of Regents (BOR) has adopted rules regulating the bidding and letting of contracts for building construction for the State University System. In 1979, by a statutory provision, DGS was required to adopt a rule delegating to State University System the functions and duties contained in s. 255.29 F.S. Accordingly, the State University System adopted ch. 6C-14, F.A.C., that provides for the administration of construction projects for universities in Florida.

Another statutory section affecting state building construction is s. 287.055, F.S.[7] This section, which is known as the "Consultants' Competitive Negotiation Act" (CCNA), regulates the purchase of professional services for construction projects that cost in excess of $120,000, which is the threshold amount provided in s.287.017. F.S., for Category Five purchases. The CCNA is applied most often when contracts for state building construction are to be awarded using the negotiated contract method. DGS is given the authority to formulate administrative rules to implement the provisions of this section.

The rules contained in these administrative codes are briefly examined in the next section.

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[7] "A Review of the Qualified Low Bid Method of Awarding State Construction Contracts," By staff of the Senate Committee on Governmental Operations, State of Florida, January 1993. p.16.

3.4 Florida Administrative Code

Procedural rules of Florida Administrative Code concerning construction contract bidding and award of contracts are contained in Ch. 60D-5 F.A.C. These rules were promulgated by the then DGS (now Department of Management Services) under its delegated legislative authority.

DGS, in turn, was required to delegate authority to the State University System to adopt rules for regulating building construction in the state university campuses. These rules, as adopted by the Board of Regents (BOR), are contained in Ch. 6C-14, F.A.C.

3.4.1 Department of Management Services Rules

Chapter 60D-5 F.A.C. divides contracts into five levels based on the dollar amount of the contract as follows:

Level One - not exceeding $10,000.

Level Two - greater than $10,000 but not exceeding $25,000.

Level Three - greater than $25,000 but not exceeding $130,000.

Level Four - greater than $130,000 but not exceeding $500,000.

Level Five - exceeding $500,000.

DMS has determined that it is in the best interest of the state to waive competitive bidding at Levels One and Two. Authority is delegated to agencies to negotiate and contract with a firm whose proposal, in the judgment of the agency, best meets its needs.

Strict procedures regarding bidding at Levels Three,

Four and Five are contained in the rules of DMS. In general, competitive bidding is required for all construction projects at these levels. The process conforms to the requirement of s. 255.29 F.S. that competitively bid construction contracts must be awarded to the qualified low bidder.

In compliance with the statute, DMS authorize waiver of the competitive bid method. The two instances when competitive bid method can be waived are when a valid emergency has been declared or when it is in the best interest of the state. In determining whether it is in the best interest of the state to waive competitive bidding requirements, the DMS executive director may consider the following factors:

(1) If a substantial reduction of normal delivery time is needed, requiring overlap of design and construction activities.

(2) If the project is large in size requiring special qualification in scheduling, value engineering, and construction management.

(3) If the project is so complex that design and construction must be done as a continuous activity requiring specific expertise of the prime contractor.

(4) If conditions requiring corrections in a renovation project are not known and need involvement of the prime contractor in the removal and examination process.

(5) If the project is one which is predominantly historic preservation requiring a specifically qualified contractor's involvement in both the design and construction phases.

(6) If the contracting agency is capable of performing

contractor selection and negotiation.
(7) If the required construction services are available from only one contractor.

3.4.2 Board of Regents Rules

The BOR rules as codified in 6C-14 F.A.C. separate building construction projects into only two levels. A "major project" is defined as a project for which the construction cost is estimated to be greater than $500,000, or a planning or study activity for which the professional fee exceeds $25,000. A "minor project" is defined as one in which the construction cost is estimated to be $500,000 or less, or a planning or study activity for which the professional fee is $25,000 or less. BOR rules also provides that the award of a contract will be made to the low bidder firm determined to be responsible and qualified in accordance with the rules.

The requirements of the BOR may be waived in valid emergencies. In addition, BOR rules authorize waiver of the requirements of rule 6C-14.021 F.A.C. to permit the negotiation of a contract for construction management services. The competitive selection of architects and engineers for major projects may be waived as well, and contracts for design-build services may be negotiated in accordance with Rule 6C-14.007 F.A.C.

To determine whether waiver of the competitive bid procedure is in the best interest of the state BOR considers similar criteria as listed under DMS rules.

3.5 Background and Summary of a Related Study done by the Senate Staff

As mentioned earlier, in January 1993, staff of the Senate Committee on Governmental Operations of the state of Florida completed a study entitled "A Review of the Qualified Low Bid Method of Awarding State Construction Costs." In the study the staff reviewed the competitive bid and negotiated bid procedures, as well as some of the variations of these two basic procedures. In addition, the statutes and rules pertaining to construction contract-award procedure were examined. Staff also analyzed state construction contracts to determine the average increase to the contract price due to change orders.

The study was initiated by the Senate bill 2326, sponsored by Senator Yancey, introduced during the 1992 legislative session. This bill would have required the Department of Management Services to develop rules for awarding construction contracts to the "best" qualified bidder, as opposed to the lowest qualified bidder. The best qualified bidder was to be determined by disqualifying the high and low bid, and averaging the remaining bids to establish the mean average bid. The bid which would be required to be accepted under this method was the bid which was directly below the mean average bid.

A review of the economic impact and fiscal note of the Senate Staff Analysis and Economic Impact Statement for SB 2326 shows that the department estimated that a change from the qualified low bid method to the best qualified bid method could increase public construction

costs by approximately $21 million per year. In a random study of 50 existing contracts, the department found that the cost of each contract using the best bid or average bid method would be increased by an average of $167,825.

Subsequently, the bill was modified and instead of changing to an alternative method the revised bill required the DMS to study the cost-effectiveness of the qualified low bid method. However, the bill did not pass and the proposed study was never undertaken by the department. As a result, the Senate President assigned the staff to conduct the study being discussed.

The Senate staff concluded,

"Based upon the analysis of the information contained in this report, it is not possible to conclude - as assigned - whether the qualified low bid method of awarding state construction contracts is more cost-effective than the numerous other competitive bid methods which exist. In particular, it is not possible to determine whether a building which is constructed by the lowest qualified bidder has higher maintenance costs and higher incidence of changes in work than a building which would be constructed by the best qualified bidder, or a bidder that would be selected under another method of awarding state building construction contracts. No reliable comparison of the various competitive bid methods can be made at the present time because alternative competitive bid systems are not authorized by law. As a result, no data are available to adequately compare the various alternative competitive bid methods

which were reviewed with the lowest qualified bid method."

The study recommended to create a task force comprising of the building construction industry representatives, and the DMS and BOR officials for reviewing the findings of this BCIAC-sponsored research project. The task force should make recommendation based on their review. If definite recommendations cannot be made the task force should consider the necessity of a pilot project. The pilot project shall compare the cost-effectiveness of the selected competitive and negotiated bid methods with the lowest qualified bid method currently practiced.

Subsequently a senate bill (SB 1064) to this effect was introduced in the 1993 legislative session proposing the formation and function of a task force as recommended in the study report. The bill was eventually placed on special order calendar and referred to governmental operations. For lack of a sufficient support the bill died in the committee on governmental operations.

Chapter 4
ALTERNATIVES, ISSUES AND CONCERNS

4.1 Contract-Award Procedures in Construction

In this section, we present different bid-evaluation and contract-award procedures. Issues and concerns about these procedures are discussed in section 4.2.

Bidding procedures are basically of two types: competitive and negotiated. Most of the other procedures are, either variations of, or somewhere in between these two extreme types. In pure competitive method, the contract is awarded to the lowest-bidder, if the bidder is found to be responsive otherwise. In pure negotiated method the price is negotiated with a selected contractor. To minimize the shortcomings of these two extreme types, modifications have been proposed and tried. For example, negotiation with the low-bidder and invitation-for-bids from a group of prequalified, preselected contractors are not uncommon practices. In the following sections, some of these alternatives, found in the literature and case studies, are described. For the purpose of this discussion, we divide contract-award procedures in the following categories:

(1) Competitive Low Bidding (Price-based)
(2) Competitive Average Bidding (Price-based)
(3) Other Competitive Bidding Methods (Based on price and "other" factors)
(4) Competitive Negotiated Bidding
(5) Non-Competitive Negotiated Bidding

It should be mentioned that Categories (1) and (2) are usually based on sealed bidding, Categories (3) and (4) may or may not be required to be sealed submissions, depending on the specific procedures, and category (5) is, by its very nature, requires unsealed submission.

In the following sections, each of these categories are described.

4.1.1 Competitive Low Bidding (Price-based)

Competitive bidding is the most widely used method of obtaining and selecting contractors for construction projects. In general, the purpose of price-based competitive bidding is to obtain the lowest possible price. Competitive bidding, according to an Ohio court: "gives everyone an equal chance to bid, eliminates collusion, and saves taxpayers money. ... It fosters honest competition in order to obtain the best work and supplies at the lowest possible price because taxpayers' money is being used. It is also necessary to guard against favoritism, imprudence, extravagance, fraud and corruption."[8] For this procedure to work it is essential to have a set of well-defined criteria to help the officials determine that the bids are responsive and the bidders are responsible. Under the competitive low-bid method, the qualified (responsible) bidder who submits the lowest bid that meets the specifications must be awarded the contract. As stated earlier, pursuant to

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[8] Sweet, J. *Legal Aspects of Architecture, Engineering, and the Construction Process*, 4th ed. 1989, West Publishing Company, St. Paul, MN. p. 396.

section 255.29(2), Florida Statutes, this method of competitive bidding is the standard method for awarding state building construction contracts in Florida.

4.1.2. Competitive Average Bidding (Price-based)

A variation of the competitive low bid method of awarding contracts is based on the principle that the best bid is the bid which is closest to the average of all bids, and not the bid which is highest or lowest. Bids which fall too far below the mean are considered to be unrealistically underbid. Bids which are much higher than the average are considered to be unreasonably overpriced. Methods based on this principle are known, in general, as European Methods.

A formula to decide a reasonable offer from several competitive bids was developed in Europe, known as "Danish" system, wherein the lowest and highest offers are rejected out right and the rest of the offers are only considered.[9] This formula stands as

$$NA = (NL + 4A + NH)/6$$

where,

NA = new average; NL = new low; NH = new high;
and A = average of all offers.

The bid which is first above this new average is then treated as realistic and acceptable. The major

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[9] Gore, P., "Rationale of Contract Awards and Contract Systems," *Journal of the Construction Division*, ASCE, Vol. 106, No. CO4, December 1980.

shortcoming of this method is that it is not effective unless the number of submitted bids is eight or more. The basic philosophy behind the average bidding procedure is that the best bid is the one closest to some average, not the lowest, not the highest. There are many variations of this concept, as outlined in Morad[10] and Hunt, et. al.[11] Some, as practiced in other countries, are described below:

Italy- Nearest of the average of all bids;

Korea- Nearest to the average of all bids after rejecting highest and lowest;

Pakistan- Lowest, only if the bid is not less than 80% of the engineer's estimate;

Philippines-More than, but nearest to, the average and below engineer's estimate;

Peru- Bids that lie 10% above and below the average are eliminated, bid immediately below the new average is selected.

Taiwan- Nearest to the average of all bids.

These competitive price-based average bidding methods are used mainly to ensure that the contractor is responsible, to avoid contractor-failure, and to reduce disputes and claims. The underlying philosophy is that

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[10] Morad, A. "Optimal Selection of Project Bid: Computer Aided Approach," Master's Thesis, Department of Civil Engineering, Massachusetts Institute of Technology, 1984.

[11] Hunt, H.W. et.al. "Contract Award Practices." *Journal of the Construction Division*, ASCE, Vol. 92, No. Co1, January 1966. p. 1-16.

the contractors should get a reasonable and realistic price for their work. It is assumed that with a fair price they would conform to quality requirements of the project, would complete on time, and would not have adversarial relationships with the A/E or the client. This method implies that the bidders will shoot for a price that is not too high or not too low, but somewhere in the middle. All other requirements of competitive low bidding method are applicable with the average bidding methods.

Herbsman and Ellis[12] (1992) mention another variation called "bracketing," where only those bids that lie within a certain range above and below the engineer's estimate are considered. The lowest responsive bid within the range gets the award. Countries such as France and Portugal try to disqualify any bid whose price appears abnormally low and consequently may cause implementation problems.

4.1.2.1 An Illustrative Example

A hypothetical competitive bidding situation was used in "A Review of the Qualified Low Bid Method of Awarding State Construction Contracts"[13] to illustrate some of the alternatives described above. The example is

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[12] Herbsman, Z. and Ellis, R. "Multiparameter Bidding System - Innovation in Contract Administration," *Journal of Construction Engineering and Management*, ASCE, Vol. 118, No. 1, March, 1992.

[13] "A Review of the Qualified Low Bid Method of Awarding State Construction Contracts," By Staff of the Senate Committee on Governmental Operations, State of Florida, January 1993.

reproduced below.

In this example, 12 bids have been received with values which are set at the levels noted below:

Bid 1	$10,000
Bid 2	11,500
Bid 3	9,200
Bid 4	7,800
Bid 5	13,300
Bid 6	12,900
Bid 7	8,900
Bid 8	10,500
Bid 9	11,200
Bid 10	9,700
Bid 11	9,900
Bid 12	10,200

After exclusion of the highest bid, Bid 5 - $13,300 and the lowest bid, Bid 4 - $7,800, the average of the remaining 10 bids was calculated to be $10,400. The bid that was just below this average was $10,200 - Bid 12 and was the selected bid.

Another variation of the above procedure, provides that the bid which falls closest to, but just above the mean, is the bid which must be selected. Using this procedure, the bid that would be selected from the 12 bids previously referred to would be Bid 8, which has a value of $10,500.

Applying the Danish method to the above example, the average (A) was found to be $9692. After eliminating the highest and the lowest, the new high (NH) and the new low (NL) were determined. NH was Bid 6 - $12,900 and the NL

was Bid 7 - $8,900. The formula referred to above was then applied to reach the new average (NA) bid amount:

NA = (8,900 + 38,768 + 12,900)/6 = $10,095

Under the Danish method, the closest bid above this new average is the bid which must be chosen. In this case, that bid is Bid 12, valued at $10,200.

The 12 bids used in the previous examples may be used to demonstrate how the bracketing method works. If the staff engineer calculated an estimated construction cost $9,700, and the pre-set range of acceptable bids is 10 percent above and below this range, the only bids which can be considered are those that fall between $8,730 and $10,670. The lowest bid submitted within this range was Bid 7 - $8,900, and would be the selected bid under the proposed bracketing method.

4.1.3. Other Competitive Bidding Methods

In this section, several variations of competitive bidding methods, based on price and other factors, are described.

4.1.3.1 Multi-Parameter Bidding Method

Herbsman and Ellis[14] proposed a model of competitive bidding that is based not only on cost but also on other parameters; they named it the multiparameter bidding procedure. They suggest that the major parameters should be cost, time and quality. Given that the amount of time

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[14] Herbsman, Z. and Ellis, R."Multiparameter Bidding System - Innovation in Contract Administration," *Journal of Construction Engineering and Management*, ASCE, Vol. 118, No. 1, March, 1992.

a contractor proposes to take to complete the project may have a major impact on costs. For instance, a contractor who can complete a building 4 months prior to his closest competitor may save the client (owner) additional rent monies. By factoring this cost savings into the bid process, a more accurate reflection of total costs can be calculated. Similarly the impact of quality can also be included in the award-decision. The long-term costs of maintenance and repair are directly related to the quality of the constructed facility being built. In the Multi-Parameter Bid Method, estimates of quality may be measured by the type of materials proposed to be used, the previous experience/past performance of the general contractor and the proposed subcontractors.

Under the Multi-parameter Bid method, time and quality concerns are each assigned a maximum attainable number of points. The bids are then reviewed and ranked based upon these factors, as well as upon the contract cost.

Other parameters can also be added in this model as desired by the user. Bidders' proposed project-duration and past performance (quality of finished projects, safety records, etc.) can be factored in to come up with a "total combined cost" in this method. The total combined costs of all the bidders are then compared to select the best bid.

Tarricone[15] reports that this method is being used or planned by at least 14 highway agencies, according to

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[15] Tarricone, P. "Deliverence," *Civil Engineering*, February 1993, p. 36-39.

FHWA data, and has been removed from the experimental category in Missouri.

4.1.3.2 Evaluated Total Cost Method

The "Evaluated Total Cost Method" (ETCM) is an innovative sealed-bid process that awards the project to the bidder offering the lowest total overall project cost ("New Delivery Systems Variations" 1992).[16] It takes into account the following:

- Performance period,
- Home office overhead rate,
- Field office overhead rate (extended overhead)
- Competitive price

It was developed and tested by the Omaha District Corps of Engineers and then was expanded throughout the Corps in October, 1990. A "bid schedule" has been developed by the US Army Corps of Engineers to assist in evaluating bids. A standard formula for the bid schedule is used which incorporates contractors proposed price, performance period, home office overhead, field office overhead, as well as Government's daily liquidated damage, cost growth, and time growth. The contractor may be required to break down the total bid into such categories as trades, floors, buildings or any other unit

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[16] "New Delivery Systems Variations," (1992). *Constructor*, Building Division, Association of General Contractors (AGC) of America, Discussion of the proceedings of the National Conference on Project Delivery Systems, October 28.

of work. The bid price is only one of four factors used to determine the evaluated total cost. The bidder with the lowest bid price may not receive the award since other factors, such as performance period and overheads, are considered. Contractor selection is based on the lowest evaluated total cost of the project to the owner.

The formula used in the bid schedule is as follows:

Estimated Govt. Cost to Administer = PP X DLD X TGF
where,

PP is the performance period which is specified by the contractor in the bid

DLD is the daily liquidated damage, which represents only those costs that would be saved if the contractor finished the project early

TGF is the time growth factor which is the average amount of time that the performance period of contracts is extended

Overheads:
Home Office Overhead: Defined as all overhead costs other than the extended field overhead costs (see below).

Estimated Home Office OH = CP X HOOR X (1 + CGF)
where,

CP is the contract price which is necessarily the contractor's bid price

HOOR is the home office overhead rate,

provided by the contractor and expressed as a % of direct cost

CGF is the cost growth factor, which is the average dollar increase to Govt. costs based on history

Extended Field Office Overhead: Defined as, and shall include, field office costs for all personnel, to include but not limited to the project superintendent and clerical personnel, all plant, all utilities, and all supplies which are related and incurred on a time basis.

Extended Field Office Overhead = PP X EFOH X TGF

where,

PP is the performance period as defined earlier

EFOH is the extended field office overhead rate provided by the contractor

TGF is the time growth factor as defined earlier

The field office overhead is to be applied for each day the contract is extended and includes all sub-contractors.

Evaluated Total Cost:

The sum of the bid price, estimated cost to administer, and estimated additional amount of overhead's is the evaluated total cost. The responsive and responsible bidder with the lowest evaluated cost is awarded the contract.

There are several alleged advantages of ETCM

procedure of awarding contracts. Some are pointed out below:

- Project completion time is reduced by 20 to 25 percent,
- Require the contractor's progress schedule to be consistent with the bid performance time,
- Home Office and Field Office Overhead rates are used to determine equitable adjustments thus reducing the cost of contract modifications,
- Requires that projects are properly planned,
- Requires close coordination between the contracts and the Design and Construction Divisions in order to properly determine if the performance periods are reasonable.

4.1.3.3 Subjective Rating Methods

Tarricone[17] mentions that GSA (General Services Administration), the Corps (US Army Corps of Engineers), the U.S. Navy and more recently, several city transit authorities are using the "technical merit" or "price and other factors" bid. Under this system two proposals are submitted: a technical proposal and a price proposal. Points are then allocated to each proposal. The Corps has used this method on hazardous waste remediation projects, where the weighing can be as high as 70% for the technical proposal and 30% for the bid price.

Another procedure that emphasizes on the quality of

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[17] Tarricone, P. "Deliverence," *Civil Engineering*, February 1993, p. 36-39.

the end result is being used by the New Jersey DOT.[18] This is known as the statistical quality assurance (SQA) specifications-based procedure. SQA is used within a low-bid framework. Instead of methods-specification, under this procedure, quality of the end-result is specified. An acceptable end result is defined by various statistical measures that describe for example, desired concrete or asphalt strength, thickness, smoothness, and riding quality. Contractors are paid commensurate with the statistical quality of their work. In some cases, they are paid in excess of contract value for exceeding the statistical specification. The proponents of this method contend that paying little more up front for high quality is better than paying lot more for maintenance and repairs in the future.

Department of Professional regulation (DPR) of the state of Florida uses a Request for Proposal (RFP) evaluation process to obtain professional examination services. This process is not currently in use for awarding construction contracts. We mention this process here as an example. Under certain situations, Florida statutes permit use of such process even in construction. In the following the DPR procedure is explained in detail.

The proposals submitted are evaluated by the members of an evaluation committee based on previously established criteria focused on the technical expertise and the cost for services.

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[18] Ibid, P-36-39.

The following steps are used to evaluate the proposals.

1. Committee members are sent a copy of the RFP (including a copy of the evaluation criteria) and a copy of each of the proposals at least five days prior to the evaluation workshop. Members are asked to review the proposals and to note any comments or questions.

2. A telephone survey of the three client references submitted by the respondent is completed by a Department staff member who is not on the evaluation committee. The survey results are given to the committee to evaluate the respondent's past performance.

3. The evaluation criteria which is included in the RFP and sent to the vendors is used to evaluate each of the proposals. The standard by which the proposals are evaluated is usually dictated by the requirements listed in the RFP or by DPR minimum standards.

4. The group discusses each criterion to determine what process, procedure or product is required.

5. The entire committee reviews the proposal from each respondent focusing on the respondent's description of a specific process, procedure or product being rated.

6. Committee members are asked to rate the respondent on the criteria by comparing the respondents' responses and determining how well they met the requirements for the process, procedure or product as outlined in the RFP.

7. A rating scale is agreed upon for the assignment of point values listed in the evaluation criteria. For example, if a criterion had a maximum score of 3 points, then the rater would assign points in the following manner:

a. 3 - Met all of the requirements; clearly understood the requirements.
b. 2 - Met most of the requirements.
c. 1 - Met very few of the requirements; did not appear to understand the requirements.
d. 0 - Did not understand.

In addition, committee members are instructed to assign partial credit (e.g. 2.5) if they felt the response fell somewhere in the middle of the rating scale.

8. All proposals are evaluated on a particular criterion before moving on to the next criterion.
9. The cost category is evaluated last. The respondent having the lowest cost for a three year contract period is awarded the total points possible. The other respondents are assigned points based on the percentage their cost varied from the low bidder.
10. The preliminary summary data from the evaluation is shared with all committee members at the end of the workshop.

To sum up, the process of bid-evaluation and awarding contracts receive utmost importance in the competitive sealed bid methods. There is an emphasis upon public notice to avoid corruption, to achieve compliance with advertised specifications, and to ensure uniformity.

4.1.4 Competitive Negotiated Bidding

Although prequalification is allowed and is a recommended procedure under the statutes, sometimes it

may become necessary to obtain bids from a select group of contractors known to have the technical, financial and managerial capability to complete a complex project. In such cases competitive price-based bidding may not be appropriate.

Pure sole-source negotiations, on the other hand, is very difficult to practice in public sector since this process may easily lead to allegation of favoritism and corruption. To avoid these inherent problems with pure sole-source negotiated bidding many agencies and owners have been using variations that have in effect, features of both competitive and negotiated procedures. In the following subsections, some of these variations that are being practiced in the state of Florida, are described. The most common modification of the pure negotiated procedure is to increase the number of firms to negotiate with, thus increasing the options to select from. In some cases, a public notice that includes specifications and requests for proposals may be issued. In other cases, certain firms which are known to be competent to complete a project, based on previous experience or reference, are contacted by the owner or client.

It was mentioned in the previous section that Florida statutes (s. 255.29 F.S.) permit use of competitive negotiation under special circumstances. The authority to decide and act is given to the Department of Management Services, which formulated rules to award projects on the basis of competitive negotiation. These rules are codified in 60D-5 F.A.C. and 6C-14 F.A.C.

In addition to s. 255.29 F.S, another statute s.287.055 F.S. is relevant in allowing competitive

negotiation in construction. Although this statute is meant for the consulting services and is known as "Consultants' Competitive Negotiations Act," it can be used under performance-based construction such as design-build procedure.

This act can not be used if the basic construction cost is not in excess of the threshold amount provided in s. 287.017 for Category five or for a planning or study activity when the fee for professional services is not in excess of the threshold amount provided in s. 287.017 for Category two. Qualification and performance data of the firms are evaluated before selecting for negotiation. The agency shall consider such factors as the ability of professional personnel, whether the firm is a minority business enterprise; past performance; willingness to meet time and budget requirements; location; recent, current and projected workloads of agency, with the object of effecting an equitable distribution of contracts among qualified firms, provided such distribution does not violate the principle of selection of the most highly qualified firms.

The agency shall negotiate a contract with the most qualified firm for professional services at compensation which the agency determines is fair, competitive, and reasonable. In making such determination, the agency shall conduct a detailed analysis of the cost of the professional services required in addition to considering their scope and complexity.

4.1.4.1 Request for Proposal (RFP) Method

One such method is "Request for Proposals" or RFP

method. Proposals are usually accepted from pre-qualified teams. Proposals submitted are evaluated based on the specified procedures and criteria. The successful proposer is selected based on the recommendations made in accordance with the established procedure. This kind of contract-award systems are appropriate for highly technical projects where definite plans and specifications can not be available before contractor selection. The following description of this method is based on a project competed recently in Miami. The owner of the project is the General Services Administration (GSA) of the Federal U.S. Government in conjunction with the city of Miami.[19] The project is the federal law enforcement building located in downtown Miami.

Technical criteria which determine the preliminary design principles and the specific requirements for the construction of a project are prepared by consultants appointed by the owner. Consultants further assist in performing other additional tasks during the proposal selection, bidding, and construction phases.

Evaluation Procedure:

Stage I: Responsiveness to RFP

All the proposals are reviewed for responsiveness to all requirements set forth in the RFP including all Appendix and Exhibit materials. A check list is used to review proposals. Failure to meet

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[19] "Request for Proposals for Development of a Federal Law Enforcement Building," U.S. General Services Administration and the City of Miami, Miami, Florida, December, 1989.

requirements is reason for rejection of proposal as non-responsive. Only responsive proposals are considered in the second stage of the evaluation process.

Stage II: Evaluation by criteria of design and project schedule

An analysis is conducted based on the evaluation criteria and corresponding point system established for building design (80%), site design (15%), and project scheduling (5%). A proposal must achieve a minimum of 75 points out of a maximum of 100. Any proposal not achieving, at minimum, a 75-point score shall not proceed to the evaluation of project cost (by sealed bid) portion of the process. In that event, the sealed bid component of the Proposal Submission shall remain sealed and shall be returned to the Proposer.

Stage III: Evaluation of project cost

The sealed envelopes containing a lump-sum price submitted by each proposer as a component of a complete proposal submission package shall be opened for those proposals under consideration in this stage of the process. The respective project price proposed is divided into the score obtained for project design and scheduling (score/project cost) to obtain an adjusted total score. The proposal achieving the highest adjusted total score is recommended for acceptance.

After selection, the selected team should prepare design and construction documents for approval by the owners according to the proposed schedule and all other requirements of RFP. The team is responsible to manage the construction process to meet the project schedule and final completion date.

4.1.4.2 Request for Qualification (RFQ) Method

A similar but slightly different method, known as "Request for Qualification" or RFQ, is a procedure for pre-qualifying the bidder prior to the issuance of a Request for Proposal (RFP). The main objective is to determine the financial solvency of the bidder required to complete the project. In some cases, public accounting firms are hired to assist the owner in verifying financial qualifications and to determine qualified applicants in accordance with all the provisions of the RFQ. Department of Management Services of the state of Florida uses this procedure and the following description is an excerpt from their manual.

Requirements for compliance usually include, demonstration of professional experience and capability to successfully complete the project. Compliance with specified minority participation requirements is also considered. Pre-qualified teams based on the submitted RFQ must keep the composition of the team, the professional expertise of its members, and the designated level of minority participation intact.

The owner is not responsible for any incurred costs to the team prior to the issuance of an executed contract. The contents of the proposal of the selected

team become part of the contractual obligations. Initial evaluation is done based on the following factors: business structure (corporation, joint venture, etc.), financial statement, years in business, total staff, total technical staff, and distance from site. A form, as shown in *Appendix A* is used by the Department to evaluate bids under this method.

From the applicants' response to the RFQ, the Selection Committee will objectively evaluate the firms' abilities in accordance with those criteria listed below:

Related Building Experience - 20 points
Financial Capability - 15 points
Scheduling and Cost Control - 10 points
Office Staffs - 15 points
On-Site Staff - 20 points
Information System - 10 points
Distance to site - 10 points

This process is known as screening. After screening four top-scorers will be more closely considered through a presentation of their approach to perform the particular project. Typically a question-answer session follows the presentation. That is probably why this stage is called interviewing. The selected firms are expected to address the following:

References - 10 points
Knowledge of the Site and Local Conditions - 10 points
Proposed Project Staff and Functions - 20 points
Minority Business Utilization Plan - 5 points
Insurance Program - 5 points

Overall Approach and Methodology - 20 points
Cost control/Value Engineering - 10 points
Scheduling this Project - 20 points

The project cost, including overhead and profit, is negotiated with the highest ranking firm.

4.1.5 Non-Competitive Negotiated Bidding

The non-competitive negotiated procedure is essentially the process of negotiating a bid with a single source, usually a preselected contractor. For this reason it is also known as sole-source negotiation. The price to be paid, and the goods and services to be received by the owner are usually the items of negotiation. The firm, that is known to have the qualification and expertise, can be chosen without any advertisement or notification. This saves time but increases the possibility of corruption and nepotism.

This method is not uncommon in the private sector, but is almost nonexistent in the public sector construction.

4.2 Issues and Concerns about Different Bidding Procedures and their Consequences

In the following subsections, major issues and main concerns about the different bidding procedures described in the previous section are discussed.

Competitive low bidding (Price-based) - Although it is generally accepted that competitive low bid method saves taxpayers money and thus protects public interest this traditional method has recently been criticized

lately for promoting inferior quality, causing too many change orders, furthering adversarial relationships, and increasing overall cost of the project.

The underlying assumptions upon which the competitive low bidding system is based are discussed in the following.

First, competitive low bidding assumes that goods or services requested can be objectively evaluated or compared before award decisions are made. This is not an easy task. To circumvent the inherent problems with this assumption, it is usually stated in the bid invitation that for consideration, bids should be responsive and the bidders should be responsible.

Second, it assumes that there are free bids and true competition. If there is collusion among the bidders to "take turns" or submit fictitious bids, antitrust laws are violated and competitive bidding cannot accomplish its objective of obtaining the lowest price.

Thus the success of competitive low bidding system depends largely on the integrity and ability of the contractor, which are often difficult to measure since the tendency is to look solely at price.

Another criticism of competitive bidding is the difficulty of involving the contractor in the design process.

Rigid specifications may also make competitive bidding process ineffective. If product specifications do not provide for alternative products and a viable method for substitutes, competitive pricing may be unduly restricted.

Other problems associated with the competitive low

bid method as compiled from recent publications on the issue are summarized below.

Grogan[20] points out that when the number of bidders is as large as is the case in a slow economy, an owner runs a significant risk of selecting a contractor that has either accidentally or deliberately submitted an unrealistically low price. A contractor cannot adhere to such a low price and at the same time expect to complete the project according to plans and specifications, and also make a reasonable profit. This often results in excessive claims and disputes during construction that lead to schedule delays, compromises in quality, and increased costs.

Although competitive low bid process is supposed to foster innovation by forcing contractors to continuously try to lower costs by adopting cost-saving technological and managerial innovations, it has been criticized for discouraging innovation.[21] Nicholson asserts, low bids provide little margin for a contractor to implement new techniques or upgrade the quality of his current product. It has been criticized for not providing any incentive for the construction of high quality project at a reasonable price.

In Turkey, prior to October 1983, the lowest

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[20] Grogan, T. "Low bids raise hidden costs." *Engineering News Record*, Vol. 228, No. 13, 1992, p. 30-31.

[21] Nicholson, J. "Rethinking the Competitive Bid," *Civil Engineering*, January 1991, p. 66-68.

bidder was awarded the job in the public sector.[22] In awarding public works contract, the Turkish government published its cost estimate and firms submitted price discounts based on that amount. Reckless, ultra-low bids delayed key transportation and energy infrastructure projects. In addition, lax prequalification procedures resulted in contractors being awarded contracts without having sufficient resources (e.g. expertise, personnel, financing, and equipment). For example, a consortium of three Turkish companies with limited experience in dam construction won the construction contract of the Ataturk dam project with a low bid of $436 million, well below the $800 million government estimate in 1983. In October 1983, the government limited bidding to within 20% of government cost estimates. Originally, this was an application of bracketing procedure, mentioned earlier. However, in reality it turned out to be an application of multi-parameter method. Every contractor automatically discounting 20%, contracts are awarded on the basis of financial strength, reputation, experience, and reliability, rather than competitive bidding. The contractors are given points based on the aforementioned factors and the contractor with the highest total points is awarded the contract. It was claimed that since the enactment of the new law, the public projects have been completed more successfully.[23]

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[22] "Construction Industry in Turkey," Tavakoli, A. and Can Tuluman, S., *Construction Management and Economics*, 1990, pp. 76-87.

[23] Ibid, page 81.

Competitive low bid method has also been criticized to cause abuse of the change order procedure. It is alleged that change orders become too numerous and too expensive under this method. Thus according to its critics, the low bidder method does not guarantee the lowest cost because delays and cost-increases are very likely to occur with the procedure.

Despite all these criticisms there are strong arguments in favor of using the traditional competitive low bidder system.

The public sector seems to be more comfortable with this process. The checks-and-balance system, an integral part of this competitive process, fosters confidence with the taxpayers. Its objectivity is ensured because price is the only criterion for evaluating bids. Its vulnerability to different sorts of political and social pressure is much less than other procedures that are based on some degree of subjectivity.

Competitive average bidding (Price-based) - In competitive average bidding procedures, as described in the previous chapter of this report, all the features of open competitive system are retained. The only difference is that the selected contractor is the one whose bid is near the average of all the bids submitted. This procedure and its variations are in use in many European and Asian countries. There are several arguments for and against this procedure.

The main advantage is that it safeguards an owner against signing a construction contract for an unrealistically low bid price that almost certainly will

lead to adversarial relationships during construction.[24] It was also pointed out that, under this method, contractors are protected from having to honor a bid containing a gross mistake or oversight.

The basic drawback of the average-bid method is that it does not necessarily promote price competition that leads to lower costs for the owner. A technological or managerial breakthrough that results in major cost savings will not necessarily be passed on to the owner in the form of lower prices, unless this breakthrough is known to be available to all bidders. Although it has been argued[25] that average bidding method results in significantly higher profits for the contractors in projects won. When such high profits are available throughout the industry, bid prices should be expected to gradually fall and the savings will eventually be passed to the owner. It has been claimed that the average bid method would increase contractor profitability and it has the potential to improve relationships between the owner and the contractor.

While the long-term effects of this method can only be predicted or expected it appears certain that it would increase costs on the short run. A review of the economic impact and fiscal note of the bill analysis for Senate Bill 2326 shows that public costs would increase by an estimated amount of $21 million per year. In

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[24] Ioannou, P.G. and Leu, S-S. "Average-Bid Method - Competitive Bidding Strategy, *Journal of Construction Engineering and Management*, ASCE, Vol. 119, No. 1, March 1993, p. 131-147.

[25] Ibid, p 142.

addition, the Department of Management Services noted that contractors could still use the same inferior materials and less skilled labor, that they are criticized for using under the present system, and instead of underbidding they could add a percentage to approximate what they perceived to be the average bid.

It is apparent from the above discussion that most of the perceived benefits of average bid method may only be realized in the long run. Moreover, some of these benefits are of intangible nature. The success of this procedure also depends on the requirement that general contractors select their subcontractors on the average-bidding principle. Given the way bidding is practiced, accepting sub-bids till the last moment, this would be very difficult to enforce. In addition, currently the law does not require general contractors to submit and retain a preselected group of subcontractors with their bid.

Some major pitfalls associated with the competitive low bid method can also be prevalent with the average bid procedure. As is the case with the low bid method, collusion among the bidders and the absence of prequalification can negate its intent and produce undesirable results. Ioannou and Leu[26] mention that in a certain country using the average-bid method, contractors try to obtain a competitive advantage by forming several dummy construction companies that bid the same projects

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[26] Ioannou, P.G. and Leu, S-S. "Average-Bid Method - Competitive Bidding Strategy," *Journal of Construction Engineering and Management*, ASCE, Vol. 119, No. 1, March 1993, p. 131-147.

as their affiliated real contractor. These dummy companies and the contractor submit bid prices that are very close to each other and thus pull the overall average towards their own price. If a dummy company wins the project, it simply passes the entire project to the affiliated contractor.

Whether contractor profitability is higher and relationships between the owner and the contractor are better in the countries that practice average bid method cannot be ascertained. There is not enough evidence to conclude that incidence of claims are less in European countries (that practice average bid method) than in the U.S.

Other Competitive Bidding Methods (Based on price and "other" factors) - Under this method factors other than price are considered before award decisions are made. This is done in a more rigorous fashion than the customary practice of prequalification procedure. These methods, as mentioned earlier, include, Statistical Quality Assurance, Time-plus-Cost bidding, and subjective rating method. The Federal Government General Services Administration (GSA) and the U.S. Army Corps of Engineers are actively pursuing these alternative methods.[27] Technical merit, and time and quality-related factors in a bid proposal are being given more emphasis by many governmental agencies including the two mentioned above. Officials assert that the innovative methods are needed for the sake of time and quality, to get better value for

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[27] Tarricone, P. "Deliverence," *Civil Engineering*, February 1993, p. 36-39.

the government dollar, to reduce life-cycle costs for the states, to encourage quality and innovations, while maintaining a fair profit for the contractor.

General contractors, in most cases, are opposed to these alternative procedures. The Associated General Contractors (AGC) of America is opposed to subjective evaluation of bid proposals.

Competitive Negotiated Bidding - Request for proposals and/or request for qualification for a particular project are examples of typical competitive negotiated method. Proposals from more than one contractor are scrutinized for factors such as technical capability, project schedule as well as cost. These methods are usually employed when the project is planned to be built under a design/build contract. Proponents of competitive negotiated bidding methods claim that these methods save time, improve quality and reduce number of claims. The U.S. Postal Services, the Bureau of Reclamation and the Florida State Highway Department use this kind of procedure on a routine basis.[28] According to one official of the Bureau of Reclamation the process allows the Bureau to question each contractor in detail to make certain he understands the complexity of the project; it eliminates any controversy over the specifications, scope of work or quality level intended.

AGC is opposed to unrestricted use of competitive negotiated methods. The main points against RFP/RFQ

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[28] Nicholson, J. "Rethinking the Competitive Bid," *Civil Engineering*, January 1991, p. 66-68.

methods as outlined by Kelley[29] are pointed out below.

(1) Contractor's cost of bid preparation is increased because he needs to spend more time in preparing a proposal under this method.

(2) The system lends itself to a situation where the contractor is reticent to propose any new or innovative ideas because they may not fit the experience or preconceived ideas of the evaluators.

(3) Contractors are required to disclose confidential commercial and financial information that should not be released outside the company.

(4) The owner may try to get cost-saving ideas from the competing contractors during the interviews and yet may choose not to award the project to the contractor whose ideas would later be utilized.

(5) The process of evaluation turns out to be subjective rather than objective.

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[29] Kelley, M.N. "Ft. Drum Estimating and Bidding from Contractor's Point of View," *Journal of Construction Engineering and Management*, ASCE, Vol. 117, No. 3, Sept., 1991. p. 565-571.

Chapter 5
RESEARCH METHODOLOGY

5.1 Questionnaire Survey

A questionnaire survey was conducted as one of the main approaches of this research project. In addition, twelve interviews have been conducted with selected public agency representatives, industry professionals and representatives of professional associations. As stated earlier, the main objective of the research was to identify various alternatives and to collect information on their effects as perceived by the respondents. 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, construction organizations and public agencies. General contractors, architectural/engineering firms, design/build firms, developer/builders, and subcontractors are included in the former group. The latter was comprised solely of public agencies.

It was felt necessary to include a set of questions that was only relevant to construction organizations. As a result, there were two sets of questionnaire. A blue-colored version with 11 questions was mailed to the above-mentioned construction organizations (see *Appendix B*). A white-colored version with 9 questions was mailed to public agencies (see *Appendix C*). The last four questions in each set were same. These questions were

designed to elicit opinions and beliefs of the respondents about the competitive and other alternative contract-award procedures. Different colors were used so that they can be easily separated and sorted when received.

5.2 Types of Questions Asked

The questionnaires designed for the construction organizations contained three main types of questions. Questions 1 through 6 were of general nature and were used to obtain a profile of the company/organization or the agency. Question 7 was a specific question regarding the respondents' frequency of encountering different procedures of bidding. In the third group of questions (8 and 9) respondents were asked to give their rating of the different bid-evaluation and contract-award procedures based on some attributes or criteria. Specific questions on how the respondents feel about the existing competitive low bid 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. This third group of questions were identical in the white version with numbers 6 and 7. The first four questions asked to the public agency representatives were designed to collect information on the predominant method they use, whether they were satisfied with their own practice, the type of construction they are involved in, and the contracting method they employ. Question 5 (*Appendix C*) was asked to provide frequency of their using different contract-award procedures.

The last two questions in both blue and white 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 this topic. 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.

5.3 Interviews

In addition to the questionnaire survey, interviews were conducted with selected individuals representing construction-related companies and associations from the construction industry. These included general contracting firms, contractors' association representatives, a state government official, and a construction attorney. These various individuals and organizations were selected to obtain different views on the issue of contract-award methods. Interviews were conducted in an unstructured conversational atmosphere, mainly using telephone, instead of a rigid format. Detailed excerpts of these interviews are reported in Chapter 8.

Chapter 6
QUESTIONNAIRE SURVEY

6.1 General

In March/April 1993, 1150 questionnaire surveys were mailed out to different organizations involved in the construction business and public agencies in the state of Florida. Florida Builders and Contractors Directory (1992)[30] was used to generate the survey mailing list. The organizations were selected on a random basis. Public agencies included cities, counties, and state government agencies (such as Department of Management Services and Board of Regents) in the state of Florida. A cover letter was included with each survey. The objective of the research project and the importance of the response were emphasized in the letter (see *Appendix D* for a sample cover letter). A "no-postage-necessary" return envelope was included with each survey. The questionnaires (see *Appendix B and C*) were designed to encourage responses. In most of the items readers were asked to respond either by a check mark or a number from a predefined scale.

6.2 Distribution by Groups

Distribution among the groups selected is shown in *Table 1*. As mentioned earlier, blue questionnaire was mailed to all the groups except the public agencies, who

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[30] Florida Builders and Contractors Directory (1992), Gulfstream Publishing Company, Inc. Ft. Lauderdale, Florida.

Table 1: Distribution of Mailings of Questionnaire Survey By Groups and Response Statistics

Groups	Mailed Originally	Returned by Post Office	Net Mailed	Responses Received	Response Percentage (%)
Developer/Builder	200	46	154	4	2.6
Design/Build	100	15	85	9	10.6
A/E Design Firm	100	15	85	18	21.2
General Contractor	400	65	335	46	13.7
Subcontractor	200	39	161	13	8.1
Other	--	--	--	10	--
Public Agencies	150	3	147	37	25.2
Total	1150	183	967	137	14.2

were sent the white version. It should be mentioned that a sizeable portion of the mailed surveys were returned by the post office as shown in *Table 1*. It indicated that many companies either moved or went out of business within a very short period of time.

6.3 Responses

Out of 967 net mailings (originally mailed - returned by post office) 137 usable responses were received. *Table 1* also shows the response statistics. The overall response percentage was 14.2%. The highest response was obtained from the public agencies (25.2%), followed by the A/E firms (21.2%) and the GC companies (13.7%). Participation from developer/builders, design/build firms and the subcontractors was minimal. In addition, 10 respondents in the construction organizations group indicated the "other" category. These companies are mostly engaged in geotechnical, environmental or testing/inspection businesses.

Chapter 7
SURVEY RESULTS

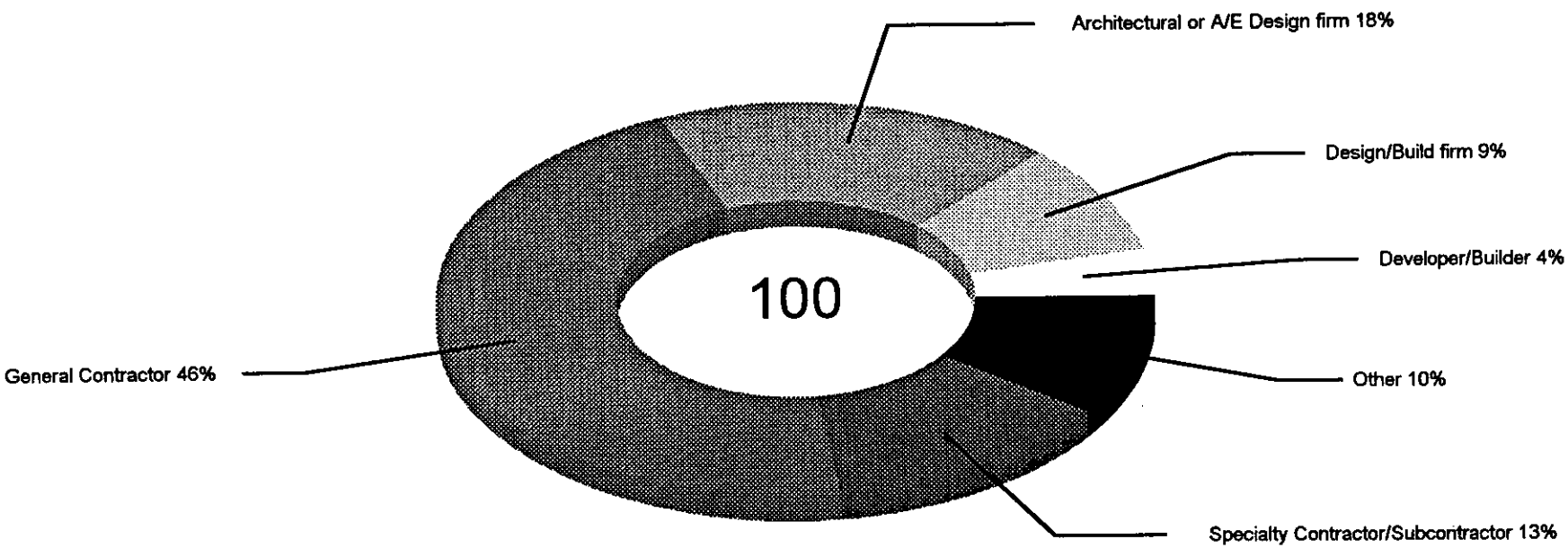
7.1 Characteristics of the Construction Organization Respondents

In this section, profiles of the construction organizations respondents are presented. This information is compiled from responses obtained through Questions 1 through 7 of the blue questionnaire. These questions asked about the primary area, size, specialization, age, volume and frequency of bid-award methods encountered by the responding companies. The results are presented in the following:

7.1.1 Primary Area of Business (Type of Organization)

The responses to Question 1 is presented in *Figure 1*. In this question, respondents were asked to check their primary area of business. Since many companies were involved in more than one type of business they were asked to check the most appropriate response. It was mentioned in the survey that their responses to the remaining questions should be based on their indicated primary role in business. Total number of responses obtained was 100 (incidentally). *Figure 1* shows the breakdown of organization types. Most of the respondents (46%) were general contractors, followed by A/E firms (18%) and subcontractor companies (13%). 10% of the respondents checked "other" category. These companies were mostly geotechnical, environmental or materials

Figure 1: Primary Role in Business of Construction Firm Respondents



testing companies. Only 9 design/build firms and 4 developer/builders responded to the survey.

7.1.2 Size of Firm/Organization

Responses to question 2 are summarized in *Figure 2*, where size of the company is indicated in terms of the number of employees. It should be noted that most of the respondents (71%) have less than 25 employees and only 15% have more than 50 employees. In this regard, most of the respondents were small companies.

7.1.3 Main Area of Business

In Question 3, respondents were asked to indicate their chief area 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 the most appropriate category from the list given in the questionnaire. The results are summarized in *Figure 3*. The numbers in the Figure show that very few (9% of the total) respondents were involved with heavy construction and respondents were almost evenly distributed among other major categories. 29% were involved in residential, 36% in private commercial, and 22% in public construction.

The distribution, however, is different for individual groups. 47% of general contractor respondents are involved in private commercial, as opposed to only 8% of the subcontractor respondents. 33% of the subcontractor respondents are involved in heavy construction. 50% of the A/E respondents are involved in public construction.

Figure 2: Size of Firm/Organization

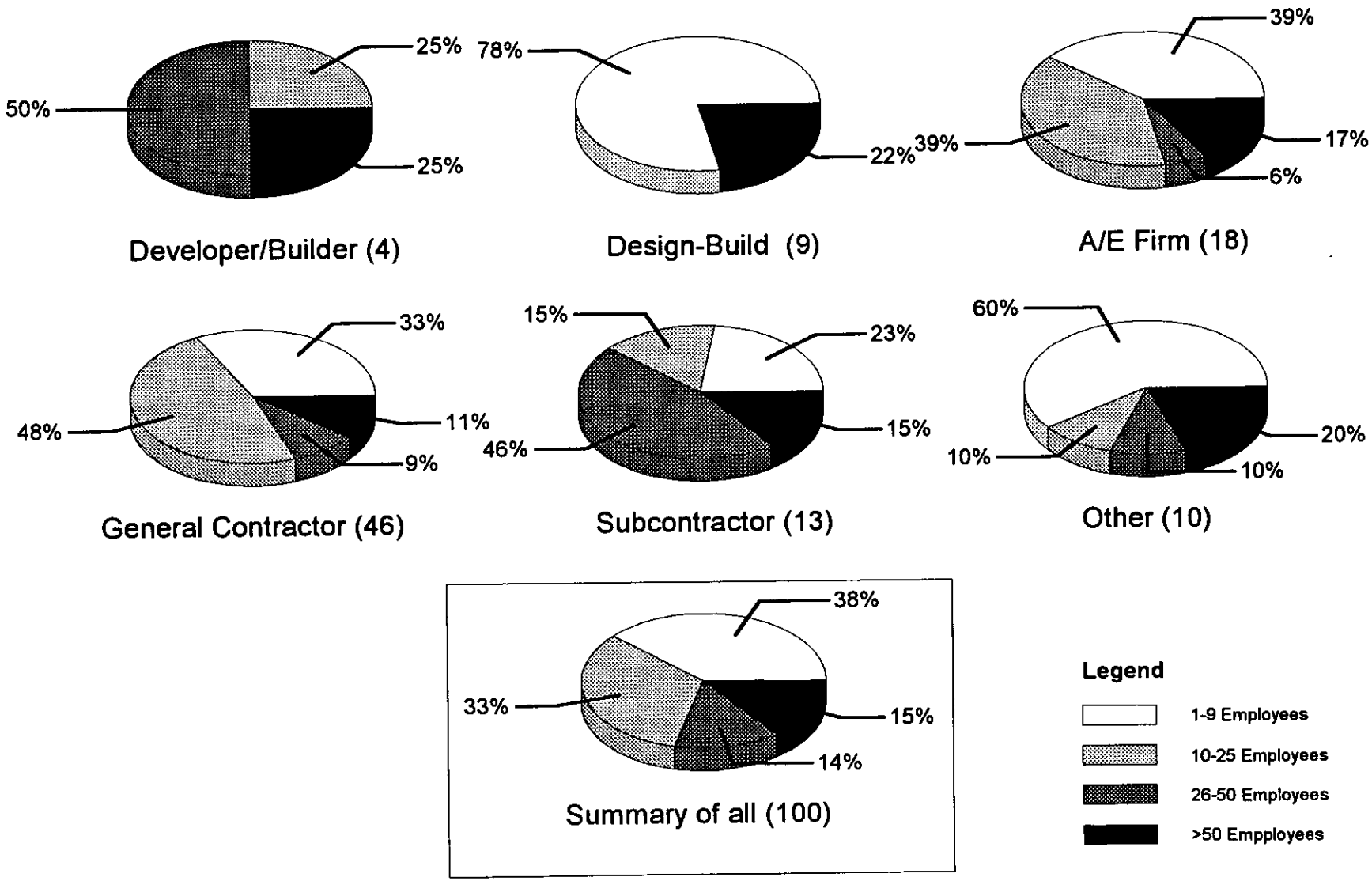
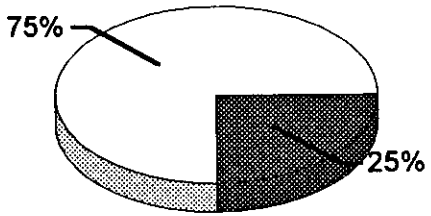
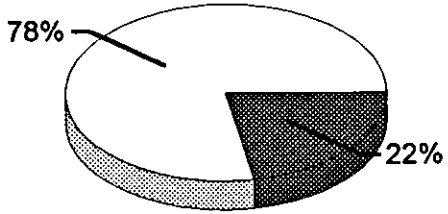


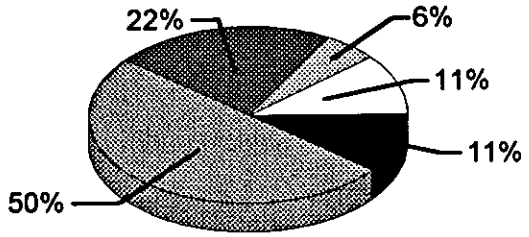
Figure 3: Main Area of Business



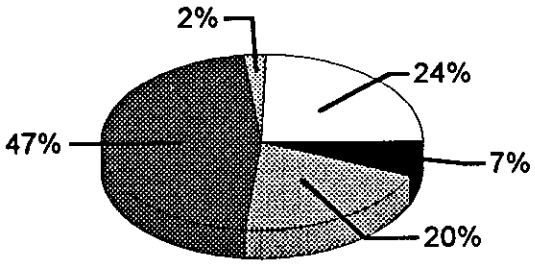
Developer/Builder (4)



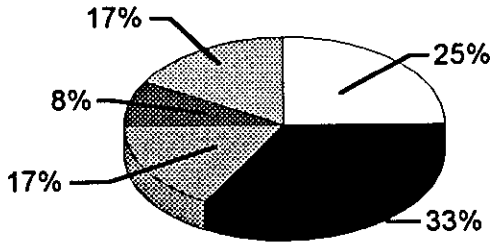
Design-Build (9)



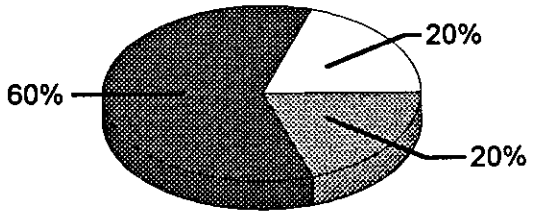
A/E Firm (18)



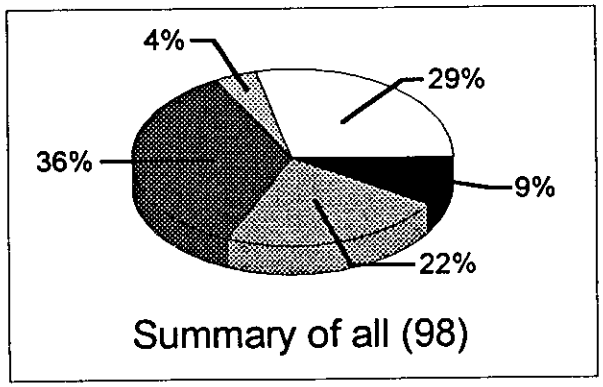
General Contractor (45)



Subcontractor (12)



Other (10)



Summary of all (98)

Legend

- Residential
- Renovation
- Private Comercial
- Public
- Heavy

7.1.4 Years in Business

Responses to Question 4 are shown in *Figure 4*. Most of the responding companies (72%) are in business for more than ten years. About a quarter (22%) are in the range of five to ten years. It can be inferred that participation of new businesses, with age between 2 to 5 years, in this survey was minimal. The distribution is very similar with the individual groups.

7.1.5 Percent of Business in Florida

Responses are shown in *Figure 5*. More than 90% of all respondents do most or all of their business in Florida. Only 5 companies (1 A/E and 4 GCs) have less than 75% of their businesses in Florida.

7.1.6 Contract Value of Business per Year

As shown in *Figure 6*, 37% of all the respondents have an annual volume of work in the range of $1 million to $5 million. 46% of the GC respondents, 54% of the subcontractors, and 33% of the A/E firms are in this range.

7.1.7 Frequency of Business under different Bid-Award Methods

In Question 7, respondents were asked to indicate the frequency of the type of bidding procedures they experience. The results for all the respondents are shown in *Table 2*. The responses of only the general contractors group, that constitutes about half of all the construction organization respondents, are summarized in *Table 3*. Responses of other groups are not reported

Figure 4: Years Firm/Organization has been established

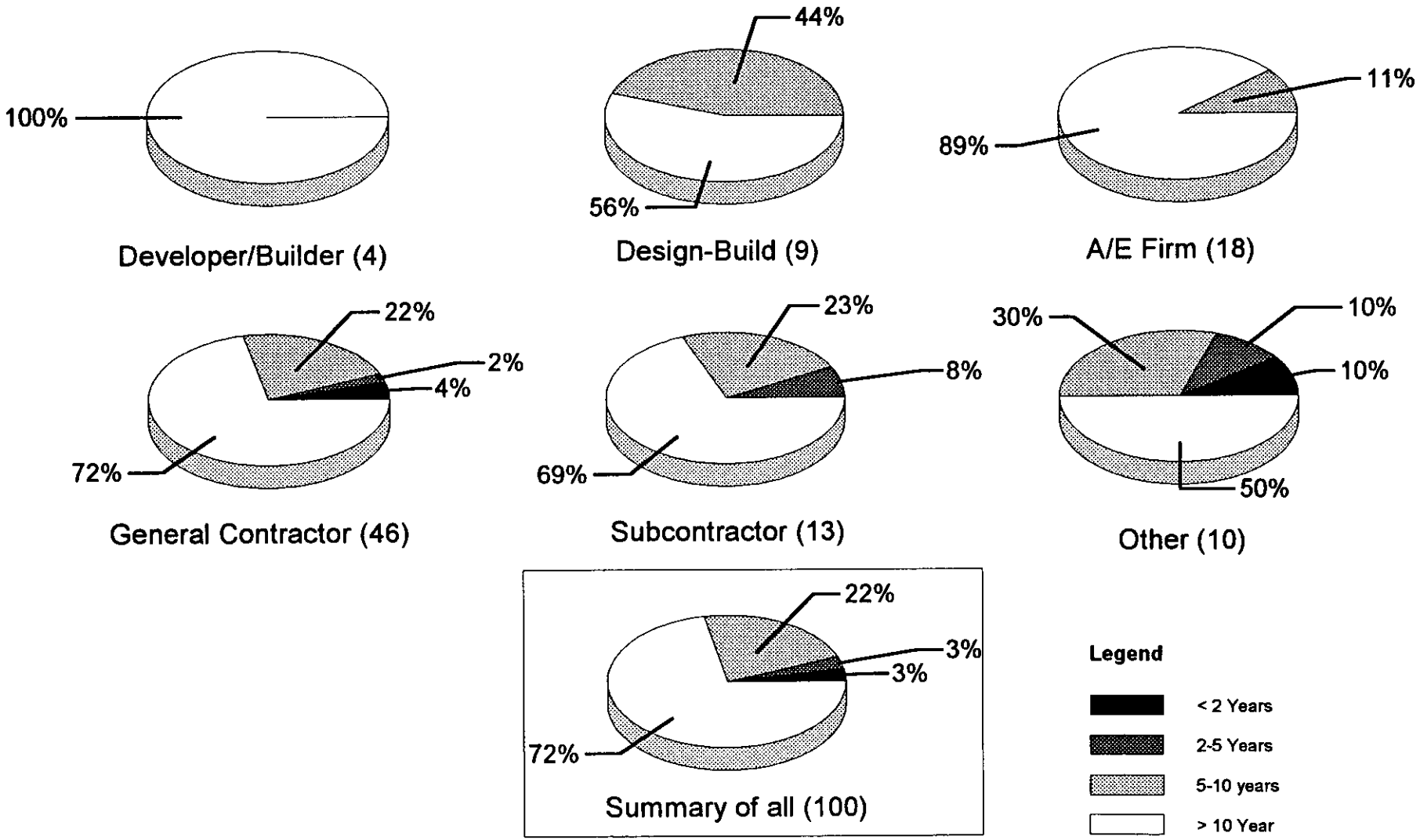


Figure 5:Percent of Business in Florida

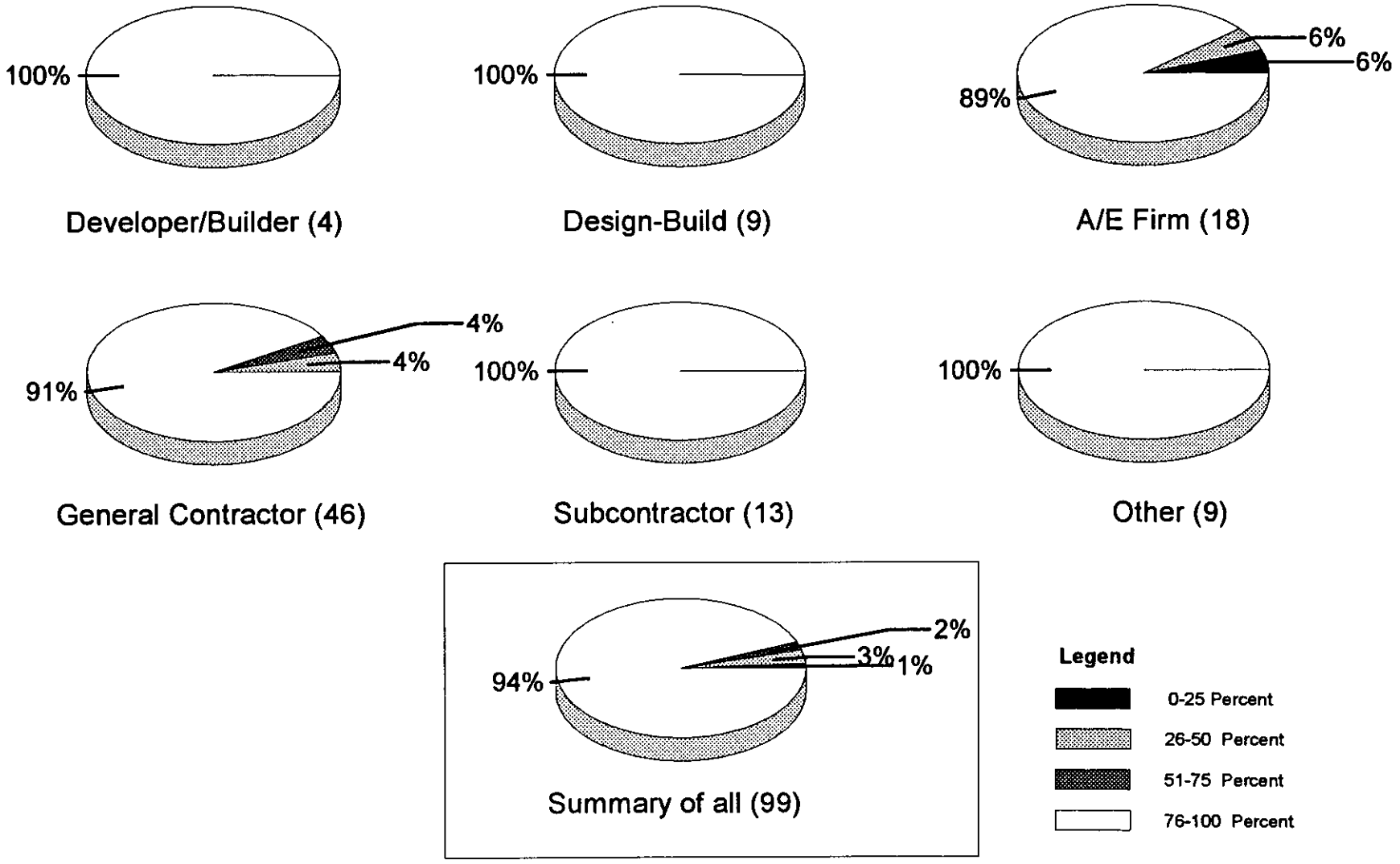
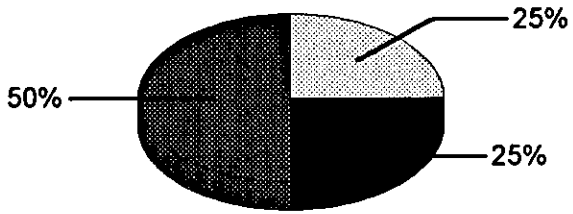
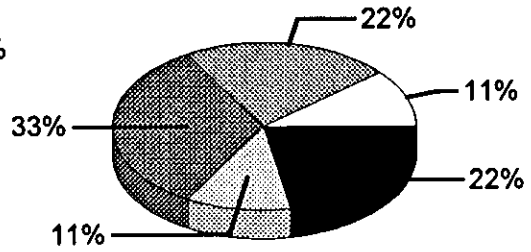


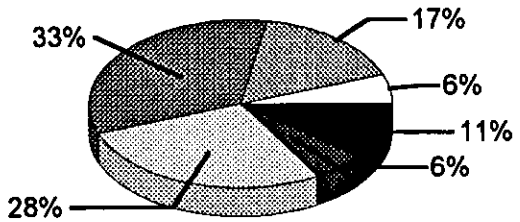
Figure 6:Contract Value of Business per year



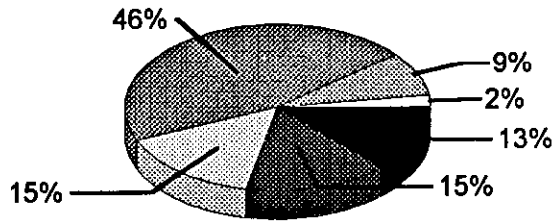
Developer/Builder (4)



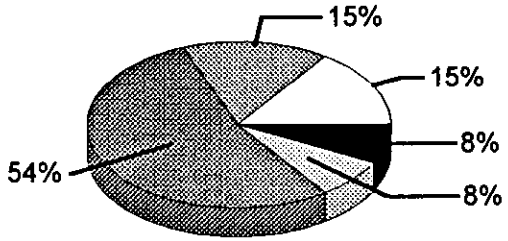
Design-Build (9)



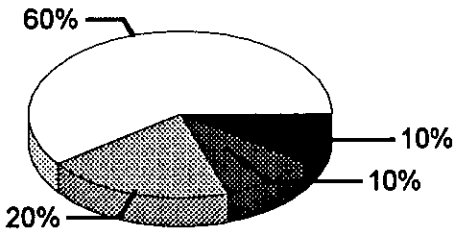
A/E Firm (18)



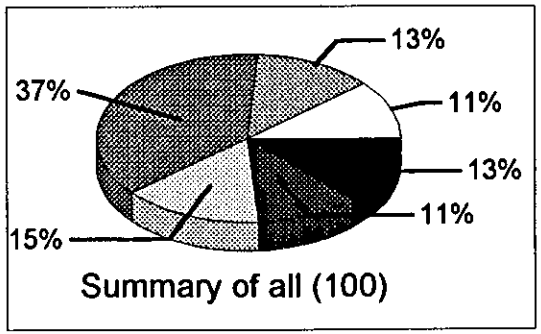
General Contractor (46)



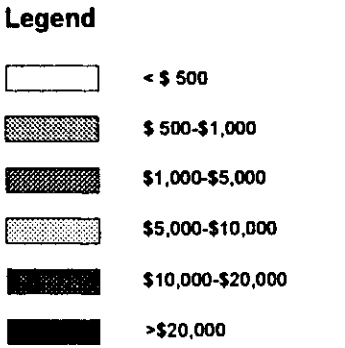
Subcontractor (13)



Other (10)



Summary of all (100)



(Numbers in Thousands)

Table 2: Frequency of Business under Different Bid-Award Methods for all firms

	Very Few		Few		Much		Very Much	
Bid-Award method	Number	%	Number	%	Number	%	Number	%
Competitive - Public	59	72.8	18	22.2	4	4.9	0	0.0
Competitive - Private	60	64.5	27	29.0	5	5.4	1	1.1
Negotiated - Public	65	91.5	6	8.5	0	0.0	0	0.0
Negotitated - Private	52	59.1	29	33.0	4	4.5	3	3.4
RFP/RFQ - Public	64	86.5	8	10.8	1	1.4	1	1.4
RFP/RFQ - Private	55	67.9	24	29.6	1	1.2	1	1.2

Note:
Very Few:0-25%
Few:26-50%
Much:51-75%
Very much:76-100%

Table 3: Frequency of Business under Different Bid-Award Methods for GCs

	Very Few		Few		Much		Very Much	
Bid-Award method	Number	%	Number	%	Number	%	Number	%
Competitive - Public	23	60.5	12	31.6	3	7.9	0	0.0
Competitive - Private	26	60.5	12	27.9	4	9.3	1	2.3
Negotiated - Public	26	92.9	2	7.1	0	0.0	0	0.0
Negotitated - Private	26	61.9	12	28.6	2	4.8	2	4.8
RFP/RFQ - Public	26	86.7	4	13.3	0	0.0	0	0.0
RFP/RFQ - Private	24	66.7	11	30.6	1	2.8	0	0.0

Note:
Very Few:0-25%
Few:26-50%
Much:51-75%
Very Much:76-100%

separately because of the low number of responses received. The figures suggest that competitive bidding procedure is the most common in both the public and the private sector construction. It is also noted that negotiated and RFP/RFQ methods are not as frequently encountered in the public sector as in the private sector. As can be seen in *Table 2*, 91.5% of those who responded that they encountered negotiated method in public construction, indicated to have done so only for about a quarter (0-25%) of their projects as opposed to 59.1% in the private sector. The corresponding number for RFP/RFQ method in public construction is 86.5%, as opposed to 67.9% in the private sector.

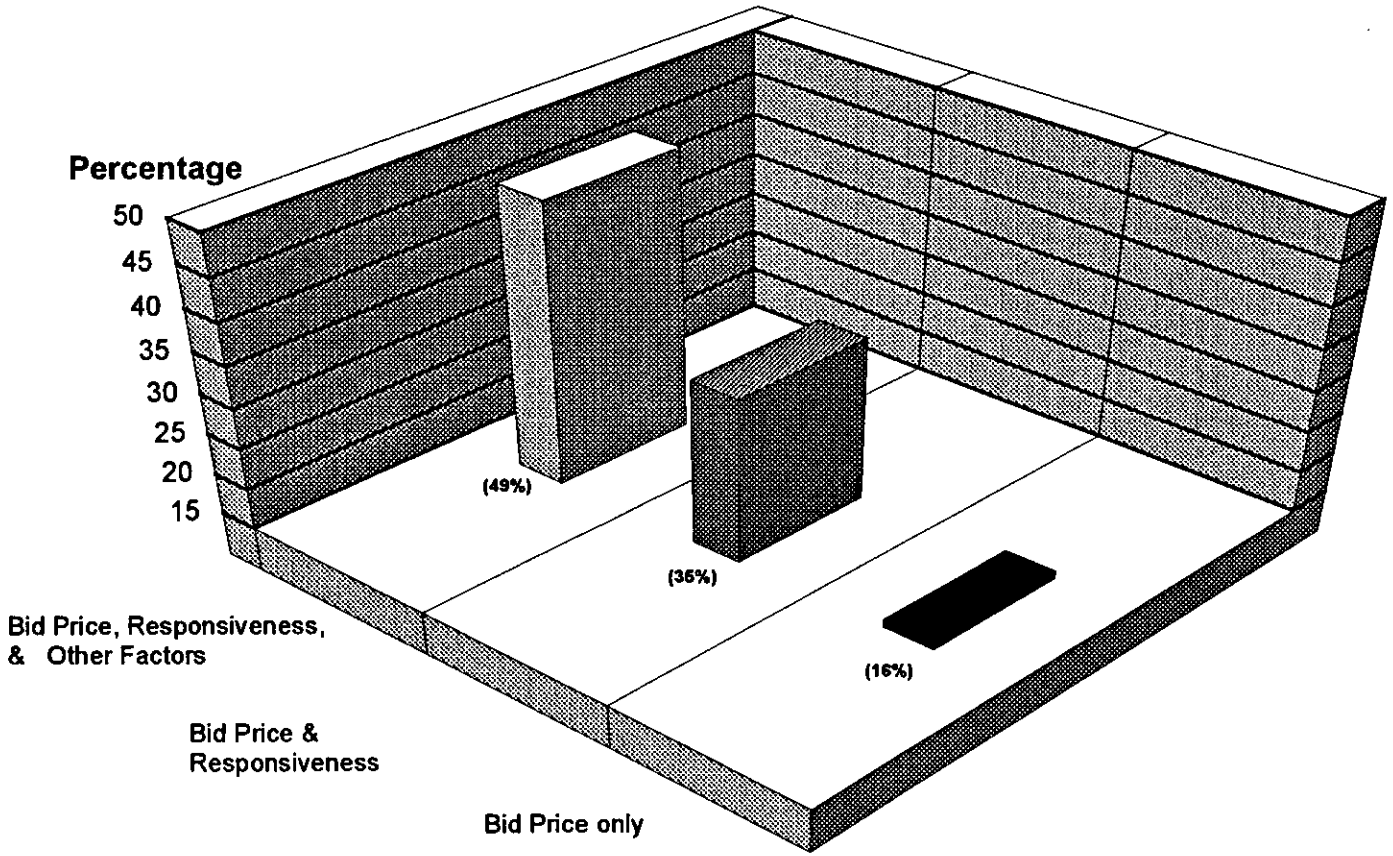
7.2 Public agency respondents

The questionnaire developed for the public agencies contained specific questions on the basis of their evaluation process, whether they are satisfied with the process, type of construction they are involved in, type of contracts they use, and the frequency of their use of different contract-award procedures.

7.2.1 Bid Evaluation Procedure

Responses are shown in *Figure 7*. Only 16% of the respondents consider only bid price, 35% bid price and responsiveness, and a majority (49%) consider other factors in addition to bid price and responsiveness. Included in the other factors are: qualifications, responsibility, track-record, references, experience with similar projects, location, capacity, DBE status, etc.

Figure 7: Public Agency Bid Evaluation Procedure



7.2.2 Satisfaction with Current Bidding Procedure

Responses are summarized in *Figure 8*. 64% of the public agency respondents indicated that they are satisfied with the current practices. 28% indicated that they are somewhat satisfied and only 8% expressed dissatisfaction with the existing practices.

7.2.3 Type of Construction

Most of the public agency (71%) respondents are involved in Building construction projects, as shown in *Figure 9*. 21% are involved in heavy engineering or highway construction projects.

7.2.4 Contracting Methods

In addition to fixed price contracting, 38% of the public agency respondents also use design/build procedure, and 36% use CM/GC (construction management/general contracting) process. The responses are summarized in *Figure 10*. 19% responded "other," that included mainly unit-price contracting.

7.2.5 Frequency of Using different Bid-Award Methods

Responses are summarized in *Table 4*. It can be seen that most of the public agency respondents, a total of 28 (77.8% of those who use competitive method) use this method for 76-100% of their projects. Many agencies also use RFP/RFQ method, but less frequently. 14 respondents use negotiated method for less than a quarter of their projects.

Figure 8: Public Agency Satisfaction Rating of Current Bidding Procedure

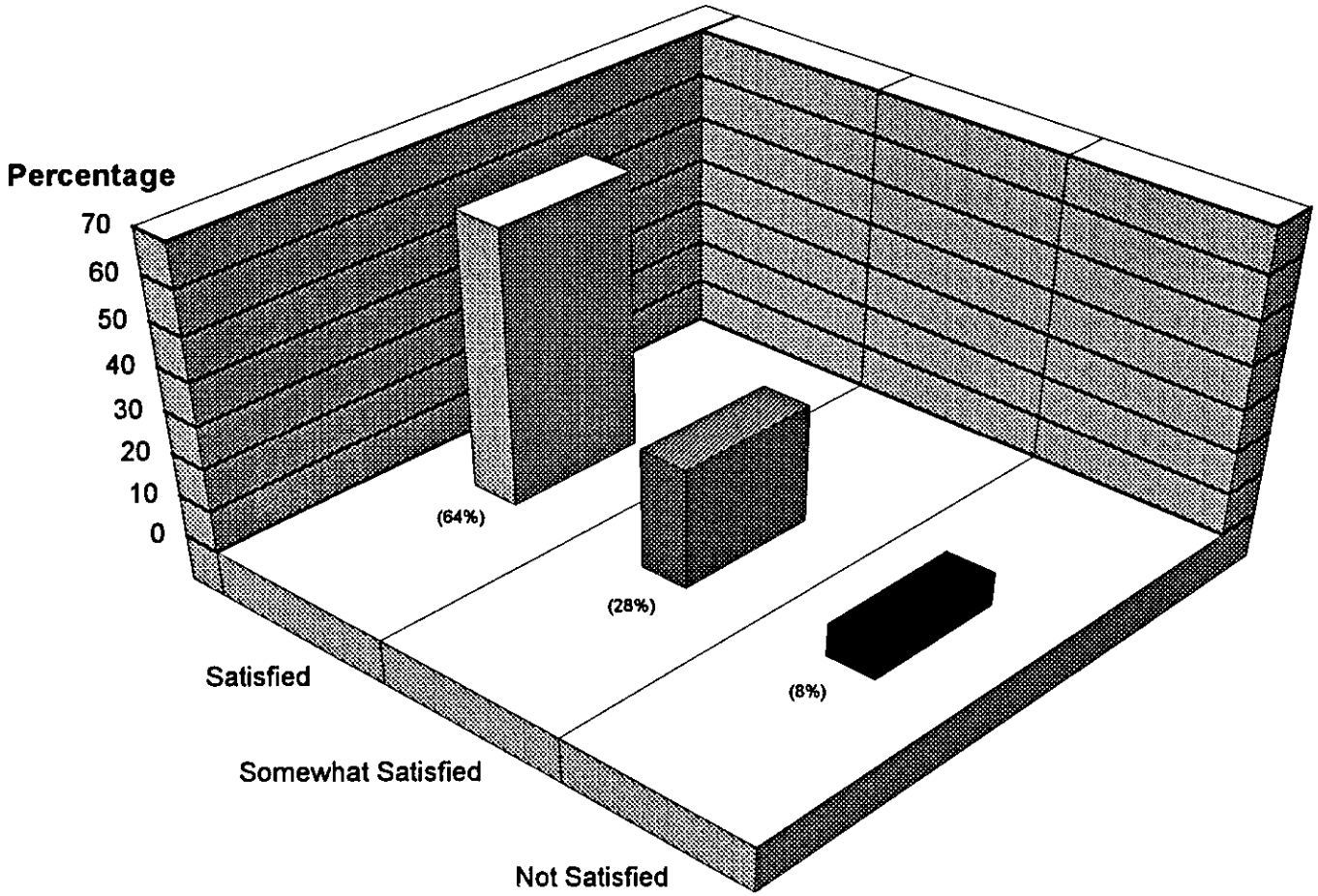


Figure 9: Type of Construction Public Agencies are Involved in

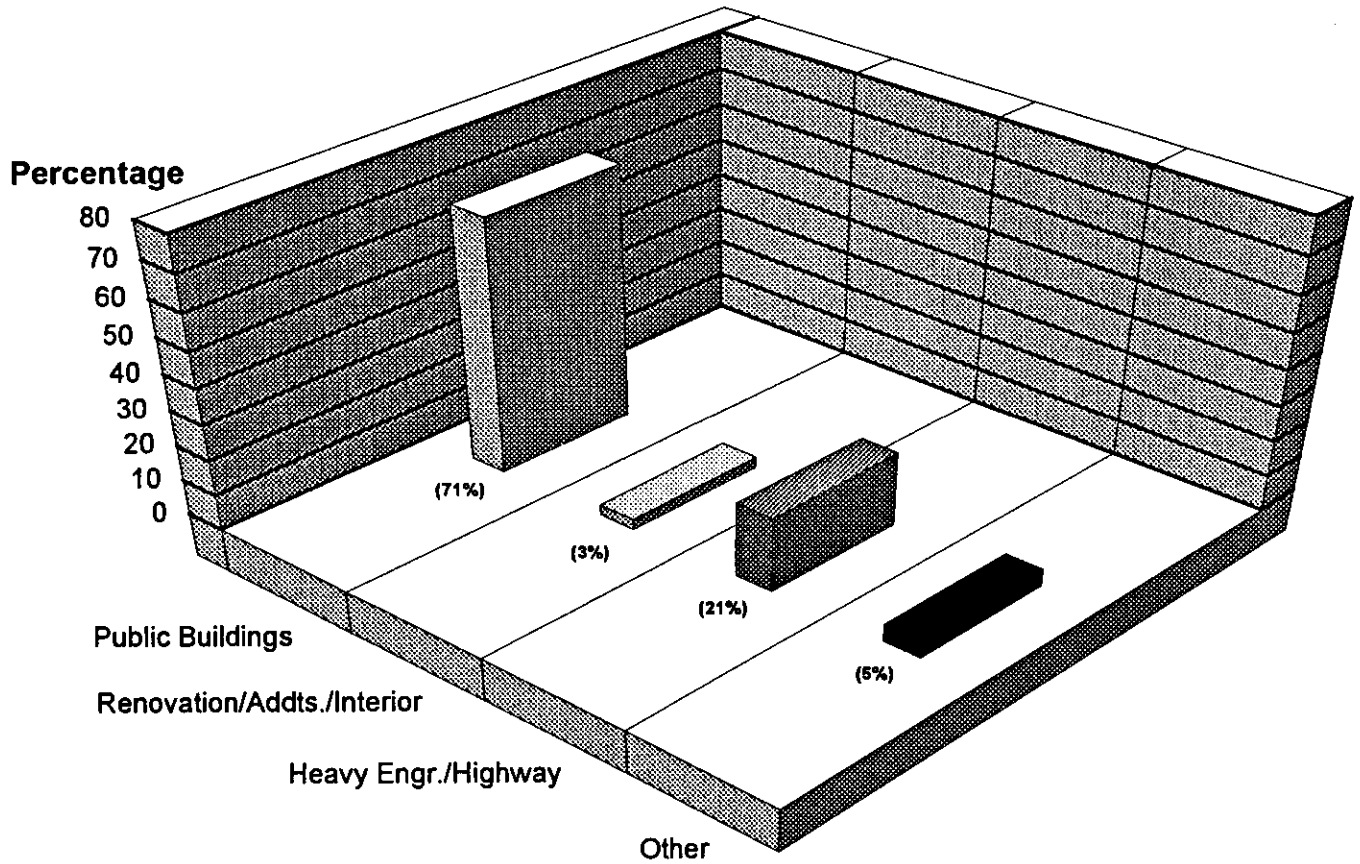


Figure 10: Contracting Methods Other than Lump-Sum Fixed Price Used by Public Agency

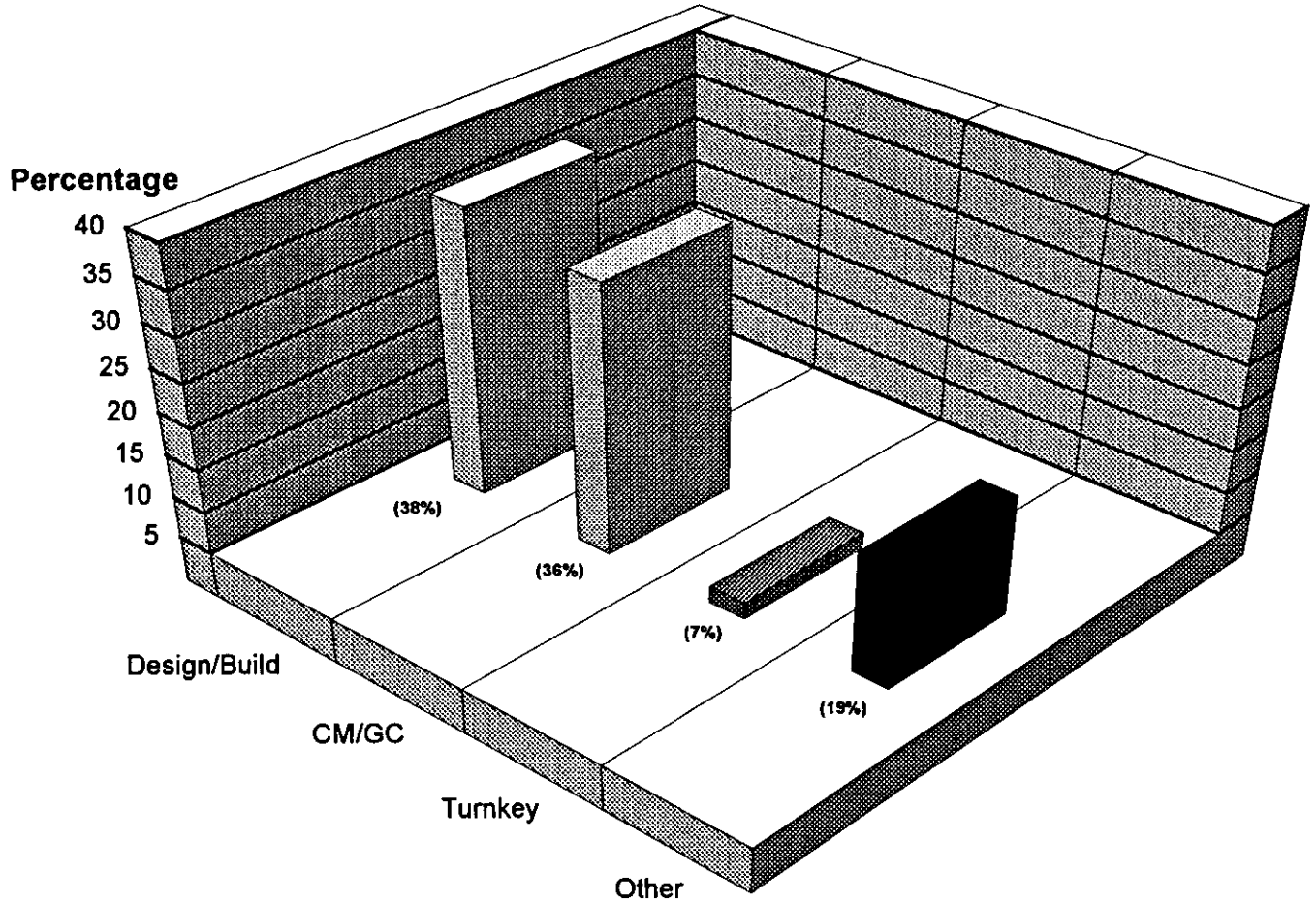


Table 4: Public Agencies Frequency of Using Different Methods

	Very Few		Few		Much		Very Much	
Type of contracts	Number	%	Number	%	Number	%	Number	%
Competitive	0	0.0	1	2.8	7	19.4	28	77.8
Negotiated	14	100.0	0	0.0	0	0.0	0	0.0
RFP/RFQ	16	72.7	4	18.2	2	9.1	0	0.0

Note:
Very Few:0-25%
Few:26-50%
Much:51-75%
Very Much:76-100%

7.3 Ratings of Construction Organizations, GCs, and Public Agencies on Different Bidding Methods

In this section, subjective rating on different attributes for the selected contract-award methods of both construction organizations and public agency respondents are reported. In addition, responses of the general contractor group is reported separately. Responses received from other participant groups were very few in numbers, so their responses are not reported individually. Respondents were asked to rate each method on the basis of contractor profit, owner's cost, disputes/claims, coordination, quality control, and project duration. They were advised to indicate, using a predefined scale, each method's possible effect on the attributes listed. The responses are discussed below.

7.3.1 Competitive Low Bid Method

The results obtained for the competitive low bid method are shown in *Tables 5A, 5B and 5C* for all construction organizations, general contractors, and public agencies respectively. A majority of the respondents in all three groups thought that the current bidding method does have negative effect on contractor profit. Construction organizations and general contractors are split on the issue of owner's cost. About half in each group believed that the method has a positive effect on owner's cost and the other half believed that it has a negative effect. A majority of public agency respondents (about 85%), however, thought that this method has a positive effect on owner's cost. A considerable portion of the public agency respondents

Table 5A:All Firms Rating of "Competitive Low Bid Method"

	Attributes											
	Contractor Profit		Owner's Cost		Disputes/Claims		Coordination		Quality Control		Project Duration	
Ratings	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Will have a positive effect	6	7.1	12	14.5	2	2.5	5	6.0	7	8.4	5	6.0
May have a positive effect	6	7.1	29	34.9	0	0.0	5	6.0	2	2.4	7	8.4
Will have no effect	5	6.0	3	3.6	7	8.6	28	33.7	14	16.9	28	33.7
May have a negative effect	46	54.8	27	32.5	40	49.4	35	42.2	46	55.4	33	39.8
Will have a negative effect	20	23.8	10	12.0	30	37.0	9	10.8	14	16.9	10	12.0
Do not know	1	1.2	2	2.4	2	2.5	1	1.2	0	0.0	0	0.0

Table 5B:General Contractor Rating of "Competitive Low Bid Method"

	Attributes											
	Contractor Profit		Owner's Cost		Disputes/Claims		Coordination		Quality Control		Project Duration	
Ratings	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Will have a positive effect	3	8.1	5	13.5	1	2.9	3	8.1	4	10.8	3	8.1
May have a positive effect	2	5.4	10	27.0	0	0.0	4	10.8	1	2.7	5	13.5
Will have no effect	3	8.1	2	5.4	5	14.3	15	40.5	9	24.3	14	37.8
May have a negative effect	19	51.4	14	37.8	17	48.6	12	32.4	17	45.9	11	29.7
Will have a negative effect	10	27.0	6	16.2	12	34.3	3	8.1	6	16.2	4	10.8
Do not know	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Table 5C: Public Agency Rating of "Competitive Low Bid Method"

	Attributes											
	Contractor Profit		Owner's Cost		Disputes/Claims		Coordination		Quality Control		Project Duration	
Ratings	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Will have a positive effect	4	12.1	11	32.4	3	8.8	4	12.1	5	14.7	3	9.1
May have a positive effect	5	15.2	18	52.9	4	11.8	2	6.1	4	11.8	7	21.2
Will have no effect	1	3.0	0	0.0	3	8.8	15	45.5	7	20.6	8	24.2
May have a negative effect	16	48.5	5	14.7	16	47.1	9	27.3	14	41.2	11	33.3
Will have a negative effect	4	12.1	0	0.0	5	14.7	1	3.0	2	5.9	1	3.0
Do not know	3	9.1	0	0.0	3	8.8	2	6.1	2	5.9	3	9.1

indicated that competitive low bid method might have a negative effect on disputes/claims, quality control, and project duration. The responses of the construction organizations and the general contractors were very similar on these issues. On the project coordination issue most of the respondents in all three groups indicated that the method did not have any effect on the issue.

7.3.2 Competitive Average Bid Method

Responses on the competitive average bid method are summarized in *Tables 6A, 6B and 6C*. About 12% of the construction firms respondents indicated that they were not sure about how it would affect the listed attributes. About 25% of the public agency respondents indicated the same. About 55% of the construction organization, 67% of the general contractor and 60% of the public agency respondents, felt that the method might have a positive effect on contractor profit. 14% of construction organization respondents indicated that it might have a negative effect on contractor profit. On the issue of owner's cost construction organizations are split. About 45% thought there would be a positive effect, and 27% indicated a negative effect. 53% of the general contractor respondents felt that owner's cost would be positively impacted because of this method. It is interesting to note that about 50% of the public agency respondents felt that it would negatively impact owner's cost. 36.7% of them indicated that it might improve quality but would not have affected coordination (40%), quality control (36.7%) and project duration (33.3%). A

Table 6A: All Firms Rating of "Competitive Average Bid Method"

	Attributes											
	Contractor Profit		Owner's Cost		Disputes/Claims		oordination		Quality Control		Project Duration	
Ratings	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Will have a positive effect	12	14.6	7	8.6	4	5.1	7	8.6	8	9.9	6	7.4
May have a positive effect	33	40.2	29	35.8	28	35.4	23	28.4	22	27.2	21	25.9
Will have no effect	11	13.4	13	16.0	14	17.7	32	39.5	24	29.6	35	43.2
May have a negative effect	14	17.1	17	21.0	17	21.5	8	9.9	17	21.0	9	11.1
Will have a negative effect	2	2.4	5	6.2	6	7.6	1	1.2	1	1.2	1	1.2
Do not know	10	12.2	10	12.3	10	12.7	10	12.3	9	11.1	9	11.1

Table 6B:General Contractor Rating of "Competitive Average Bid Method"

	Attributes											
	Contractor Profit		Owner's Cost		Disputes/Claims		Coordination		Quality Control		Project Duration	
Ratings	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Will have a positive effect	8	22.2	5	13.9	4	11.8	5	13.9	5	13.9	5	13.9
May have a positive effect	16	44.4	14	38.9	15	44.1	15	41.7	12	33.3	12	33.3
Will have no effect	6	16.7	5	13.9	5	14.7	13	36.1	11	30.6	15	41.7
May have a negative effect	3	8.3	7	19.4	5	14.7	0	0.0	5	13.9	1	2.8
Will have a negative effect	1	2.8	3	8.3	3	8.8	1	2.8	1	2.8	1	2.8
Do not know	2	5.6	2	5.6	2	5.9	2	5.6	2	5.6	2	5.6

Table 6C:Public Agency Rating of "Competitive Average Bid Method"

	Attributes											
	Contractor Profit		Owner's Cost		Disputes/Claims		Coordination		Quality Control		Project Duration	
Ratings	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Will have a positive effect	6	20.0	3	10.0	4	13.3	2	6.7	3	10.0	3	10.0
May have a positive effect	11	36.7	4	13.3	5	16.7	8	26.7	11	36.7	7	23.3
Will have no effect	1	3.3	1	3.3	9	30.0	12	40.0	7	23.3	10	33.3
May have a negative effect	4	13.3	12	40.0	2	6.7	1	3.3	2	6.7	3	10.0
Will have a negative effect	1	3.3	3	10.0	2	6.7	1	3.3	1	3.3	1	3.3
Do not know	7	23.3	7	23.3	8	26.7	6	20.0	6	20.0	6	20.0

majority of the general contractor respondents indicated that this method might or would affect disputes/claims (56%), coordination (56%), quality control (47%), and project duration (47%) positively.

7.3.3 RFP/RFQ (Competitive Negotiated) Method

Most of the respondents (50-60%) in all three groups indicated that the RFP/RFQ method would positively affect all the listed attributes. The responses are shown in *Tables 7A* (construction organizations), *7B* (general contractors), and *7C* (public agencies). A considerable portion (20-30%), in the construction organization and the general contractors' group indicated that it would not have any effect on the attributes listed. It is interesting to note that although most of the public agency respondents indicated that the RFP/RFQ method would positively impact most of the attributes, 50% of them thought it might affect owner's cost negatively.

7.3.4 Negotiated Method

Responses of all construction organizations, general contractors, and public agencies on the negotiated method are summarized in *Tables 8A, 8B and 8C* respectively. 60-80% of the responding construction organizations indicated that this method either would or might have a positive effect on the listed attributes. General contractor responses followed a similar pattern. 34.5% of the public agencies responded that it might have a negative effect on owner's cost. About 50-65% of the public agencies indicated positive effect on the listed attributes.

Table 7A:All Firms Rating of "RFP/RFQ Method"

	Attributes											
	Contractor Profit		Owner's Cost		Disputes/Claims		Coordination		Quality Control		Project Duration	
Ratings	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Will have a positive effect	11	14.1	14	17.9	14	18.2	21	26.9	25	32.1	18	23.1
May have a positive effect	42	53.8	32	41.0	31	40.3	30	38.5	29	37.2	26	33.3
Will have no effect	14	17.9	12	15.4	20	26.0	18	23.1	14	17.9	24	30.8
May have a negative effect	5	6.4	11	14.1	4	5.2	3	3.8	4	5.1	4	5.1
Will have a negative effect	0	0.0	2	2.6	2	2.6	0	0.0	0	0.0	0	0.0
Do not know	6	7.7	7	9.0	6	7.8	6	7.7	6	7.7	6	7.7

Table 7B:General Contractor Rating of "RFP/RFQ Method"

	Attributes											
	Contractor Profit		Owner's Cost		Disputes/Claims		Coordination		Quality Control		Project Duration	
Ratings	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Will have a positive effect	5	14.7	7	20.6	5	15.2	8	23.5	11	32.4	8	23.5
May have a positive effect	17	50.0	13	38.2	13	39.4	13	38.2	12	35.3	11	32.4
Will have no effect	6	17.6	4	11.8	8	24.2	10	29.4	7	20.6	11	32.4
May have a negative effect	3	8.8	5	14.7	2	6.1	0	0.0	1	2.9	1	2.9
Will have a negative effect	0	0.0	2	5.9	2	6.1	0	0.0	0	0.0	0	0.0
Do not know	3	8.8	3	8.8	3	9.1	3	8.8	3	8.8	3	8.8

Table 7C:Public Agency Rating of "RFP/RFQ Method"

Ratings	Attributes											
	Contractor Profit		Owner's Cost		Disputes/Claims		Coordination		Quality Control		Project Duration	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Will have a positive effect	6	19.4	4	13.3	3	9.7	5	17.9	6	20.0	4	13.8
May have a positive effect	15	48.4	7	23.3	7	22.6	10	35.7	17	56.7	10	34.5
Will have no effect	2	6.5	0	0.0	4	12.9	9	32.1	3	10.0	6	20.7
May have a negative effect	3	9.7	15	50.0	8	25.8	0	0.0	1	3.3	5	17.2
Will have a negative effect	0	0.0	1	3.3	2	6.5	0	0.0	0	0.0	0	0.0
Do not know	5	16.1	3	10.0	7	22.6	4	14.3	3	10.0	4	13.8

Table 8A:All Firms Rating of "Negotiated Method"

Ratings	Attributes											
	Contractor Profit		Owner's Cost		Disputes/Claims		Coordination		Quality Control		Project Duration	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Will have a positive effect	30	36.6	26	32.1	30	38.0	34	42.0	34	42.0	30	37.0
May have a positive effect	34	41.5	30	37.0	30	38.0	33	40.7	28	34.6	26	32.1
Will have no effect	10	12.2	7	8.6	9	11.4	11	13.6	15	18.5	20	24.7
May have a negative effect	8	9.8	14	17.3	5	6.3	2	2.5	3	3.7	4	4.9
Will have a negative effect	0	0.0	3	3.7	1	1.3	0	0.0	0	0.0	0	0.0
Do not know	0	0.0	1	1.2	4	5.1	1	1.2	1	1.2	1	1.2

Table 8B: General Contractor Rating of "Negotiated Method"

	Attributes											
	Contractor Profit		Owner's Cost		Disputes/Claims		Coordination		Quality Control		Project Duration	
Ratings	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Will have a positive effect	16	44.4	15	41.7	17	50.0	19	52.8	20	55.6	18	50.0
May have a positive effect	15	41.7	12	33.3	11	32.4	13	36.1	9	25.0	8	22.2
Will have no effect	4	11.1	2	5.6	4	11.8	4	11.1	7	19.4	9	25.0
May have a negative effect	1	2.8	4	11.1	1	2.9	0	0.0	0	0.0	1	2.8
Will have a negative effect	0	0.0	3	8.3	1	2.9	0	0.0	0	0.0	0	0.0
Do not know	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Table 8C: Public Agency Rating of "Negotiated Method"

	Attributes											
	Contractor Profit		Owner's Cost		Disputes/Claims		Coordination		Quality Control		Project Duration	
Ratings	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Will have a positive effect	6	20.7	2	6.9	4	14.3	3	11.1	5	17.9	6	23.1
May have a positive effect	15	51.7	14	48.3	8	28.6	8	29.6	11	39.3	6	23.1
Will have no effect	0	0.0	0	0.0	6	21.4	7	25.9	7	25.0	7	26.9
May have a negative effect	5	17.2	10	34.5	3	10.7	2	7.4	1	3.6	1	3.8
Will have a negative effect	1	3.4	1	3.4	1	3.6	1	3.7	1	3.6	1	3.8
Do not know	2	6.9	2	6.9	6	21.4	6	22.2	3	10.7	5	19.2

7.3.5 Cost-plus-time Bidding Method

Responses on this method are summarized in *Tables 9A, 9B and 9C* for construction organizations, general contractors, and public agency representatives respectively. Cost-plus-time bidding method seems to be unknown to a majority of the public agency respondents. About 50-65% chose their response to be "do not know" corresponding to the attributes listed. This figure is about 25% for the construction organizations. Among the construction organizations about 60% thought it would have a positive effect on contractor profit, and about 46% thought it would have a negative effect on owner's cost. A large percentage of responding construction organizations felt that it might have or would have positive impacts on coordination (40%), quality control (40%), and project duration (33%). About 20-25% indicated that it would not have any effect on those attributes. Distribution of general contractors' responses on this method is very similar to those indicated by all construction organizations as described above.

7.3.6 Subjective Rating Method

Tables 10A, 10B and 10C show the response distributions of the construction organizations, general contractors, and public agencies respectively on the subjective rating method. About 63% of the construction organizations and the general contractors indicated that it would have a positive effect on contractor profit, 57% of the public agency respondents indicated the same. 45% of the construction organizations and 51% of the general

Table 9A: All Firms Rating of "Cost-plus-time-Bidding Method"

	Attributes											
	Contractor Profit		Owner's Cost		Disputes/Claims		Coordination		Quality Control		Project Duration	
Ratings	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Will have a positive effect	26	34.2	6	7.9	6	7.9	12	15.8	15	19.7	9	11.8
May have a positive effect	20	26.3	9	11.8	14	18.4	18	23.7	16	21.1	16	21.1
Will have no effect	4	5.3	8	10.5	14	18.4	18	23.7	17	22.4	19	25.0
May have a negative effect	8	10.5	24	31.6	14	18.4	10	13.2	10	13.2	12	15.8
Will have a negative effect	1	1.3	11	14.5	8	10.5	2	2.6	1	1.3	4	5.3
Do not know	17	22.4	18	23.7	20	26.3	16	21.1	17	22.4	16	21.1

Table 9B: General Contractor Rating of "Cost-plus-time Bidding Method"

	Attributes											
	Contractor Profit		Owner's Cost		Disputes/Claims		Coordination		Quality Control		Project Duration	
Ratings	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Will have a positive effect	9	26.5	4	11.8	3	8.8	7	20.6	10	29.4	4	11.8
May have a positive effect	14	41.2	7	20.6	7	20.6	9	26.5	7	20.6	9	26.5
Will have no effect	3	8.8	6	17.6	9	26.5	11	32.4	9	26.5	12	35.3
May have a negative effect	3	8.8	7	20.6	6	17.6	2	5.9	3	8.8	2	5.9
Will have a negative effect	1	2.9	6	17.6	5	14.7	1	2.9	1	2.9	3	8.8
Do not know	4	11.8	4	11.8	4	11.8	4	11.8	4	11.8	4	11.8

Table 9C: Public Agency Rating of "Cost-plus-time Bidding Method"

Ratings	Attributes											
	Contractor Profit		Owner's Cost		Disputes/Claims		Coordination		Quality Control		Project Duration	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Will have a positive effect	6	20.7	0	0.0	1	3.4	2	7.1	2	7.1	2	7.1
May have a positive effect	7	24.1	5	17.2	1	3.4	1	3.6	2	7.1	2	7.1
Will have no effect	1	3.4	0	0.0	4	13.8	7	25.0	5	17.9	5	17.9
May have a negative effect	0	0.0	5	17.2	3	10.3	1	3.6	2	7.1	2	7.1
Will have a negative effect	0	0.0	4	13.8	1	3.4	1	3.6	1	3.6	1	3.6
Do not know	15	51.7	15	51.7	19	65.5	16	57.1	16	57.1	16	57.1

Table 10A:All Firms Rating of "Subjective Rating Method"

	Attributes											
	Contractor Profit		Owner's Cost		Disputes/Claims		Coordination		Quality Control		Project Duration	
Ratings	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Will have a positive effect	14	18.4	4	5.3	14	18.4	19	25.0	20	26.3	15	19.7
May have a positive effect	34	44.7	30	39.5	26	34.2	25	32.9	31	40.8	29	38.2
Will have no effect	8	10.5	8	10.5	12	15.8	17	22.4	11	14.5	18	23.7
May have a negative effect	5	6.6	14	18.4	8	10.5	2	2.6	1	1.3	1	1.3
Will have a negative effect	2	2.6	7	9.2	3	3.9	1	1.3	1	1.3	1	1.3
Do not know	13	17.1	13	17.1	13	17.1	12	15.8	12	15.8	12	15.8

Table 10B: General Contractor Rating of "Subjective Rating Method"

	Attributes											
	Contractor Profit		Owner's Cost		Disputes/Claims		Coordination		Quality Control		Project Duration	
Ratings	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Will have a positive effect	6	18.2	1	3.0	4	12.1	7	21.2	7	21.2	4	12.1
May have a positive effect	15	45.5	16	48.5	15	45.5	13	39.4	14	42.4	14	42.4
Will have no effect	3	9.1	3	9.1	5	15.2	8	24.2	7	21.2	10	30.3
May have a negative effect	2	6.1	3	9.1	2	6.1	0	0.0	0	0.0	0	0.0
Will have a negative effect	2	6.1	5	15.2	2	6.1	0	0.0	0	0.0	0	0.0
Do not know	5	15.2	5	15.2	5	15.2	5	15.2	5	15.2	5	15.2

Table 10C: Public Agency Rating of "Subjective Rating Method"

	Attributes											
	Contractor Profit		Owner's Cost		Disputes/Claims		Coordination		Quality Control		Project Duration	
Ratings	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Will have a positive effect	1	3.3	1	3.4	2	6.9	4	14.3	5	17.9	2	7.1
May have a positive effect	16	53.3	6	20.7	6	20.7	8	28.6	11	39.3	8	28.6
Will have no effect	4	13.3	1	3.4	6	20.7	6	21.4	3	10.7	6	21.4
May have a negative effect	1	3.3	13	44.8	4	13.8	2	7.1	1	3.6	1	3.6
Will have a negative effect	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	3.6
Do not know	8	26.7	8	27.6	11	37.9	8	28.6	8	28.6	10	35.7

contractors felt that it also would impact owner's cost positively. About 25% in both groups indicated that it might negatively impact the owner's cost. About 45% of the public agency respondents felt the same way. 25-37% of the responding public agencies indicated that they did not know whether this method would have any effect on the listed attributes. This figure is about 16% for the construction organizations. About 60-70% of the responding construction organizations indicated positive impact of this method on disputes/claims, coordination, quality control, and project duration. Among the public agency owners about 40% thought it might have a positive effect on quality control.

7.4 Opinions on Stated Effects and Alternative Bidding Practices

In question 9 (construction organizations) and question 7 (public agencies), respondents were asked to provide a score to each of the statements based on their degree of agreement (or disagreement). The responses obtained from all the construction organizations, general contractors and the public agencies are shown respectively in *Tables 11A, 11B and 11C*.

37% of the construction organization respondents either agreed or strongly agreed with the statement, "no change is necessary." 63% either disagreed or strongly disagreed. The corresponding number for general contractors is about 65%. Public agency respondents were more in favor of not changing the system (65%) than they were in favor of some kind of change.

Average bidding was favored by 56% (agreeing or

Table 11A: All Firms Response to Given Statements on Bidding Practices

Statements on Bidding Practices	Strongly Agree		Agree		Disagree		Strongly Disagree		No Opinion	
	Number	%	Number	%	Number	%	Number	%	Number	%
No change is necessary	10	10.6	25	26.6	38	40.4	21	22.3	0	0.0
Choose bidder closest to average	11	11.8	41	44.1	21	22.6	12	12.9	8	8.6
Combination of competitive and negotiated	22	23.2	46	48.4	14	14.7	10	10.5	3	3.2
Should depend on type and complexity	39	41.5	41	43.6	8	8.5	3	3.2	3	3.2
Prequalify contractors	20	21.7	37	40.2	23	25.0	2	2.2	10	10.9
Use subjective evaluation of factors	32	34.4	45	48.4	6	6.5	8	8.6	2	2.2
Comp. low bid encourages innovation	9	9.6	14	14.9	34	36.2	33	35.1	4	4.3
Comp. low bid guarantees lowest cost, but not best	40	42.6	24	25.5	16	17.0	13	13.8	1	1.1
Negotiated bid encourages favoritism and corruption	18	19.1	23	24.5	31	33.0	19	20.2	3	3.2
Bid evaluation should depend on type of contract	19	20.4	52	55.9	12	12.9	1	1.1	9	9.7

Table 11B: General Contractor Response to Given Statements on Bidding Practices

Statements on Bidding Practices	Strongly Agree		Agree		Disagree		Strongly Disagree		No Opinion	
	Number	%	Number	%	Number	%	Number	%	Number	%
No change is necessary	8	18.2	7	15.9	21	47.7	8	18.2	0	0.0
Choose bidder closest to average	6	14.0	18	41.9	8	18.6	6	14.0	5	11.6
Combination of competitive and negotiated	9	20.5	21	47.7	5	11.4	7	15.9	2	4.5
Should depend on type and complexity	19	43.2	18	40.9	2	4.5	2	4.5	3	6.8
Prequalify contractors	11	26.2	15	35.7	11	26.2	2	4.8	3	7.1
Use subjective evaluation of factors	10	22.7	22	50.0	4	9.1	7	15.9	1	2.3
Comp. low bid encourages innovation	5	11.4	7	15.9	16	36.4	15	34.1	1	2.3
Comp. low bid guarantees lowest cost, but not best	19	43.2	13	29.5	6	13.6	5	11.4	1	2.3
Negotiated bid encourages favoritism and corruption	12	27.3	7	15.9	14	31.8	10	22.7	1	2.3
Bid evaluation should depend on type of contract	13	30.2	24	55.8	4	9.3	1	2.3	1	2.3

Table 11C: Public Agency Response to Given Statements on Bidding Practices

Statements on Bidding Practices	Strongly Agree		Agree		Disagree		Strongly Disagree		No Opinion	
	Number	%	Number	%	Number	%	Number	%	Number	%
No change is necessary	6	16.2	18	48.6	10	27.0	3	8.1	0	0.0
Choose bidder closest to average	5	14.3	17	48.6	10	28.6	3	8.6	0	0.0
Combination of competitive and negotiated	2	5.7	7	20.0	8	22.8	13	37.2	5	14.3
Should depend on type and complexity	10	28.6	14	40.0	5	14.3	3	8.6	3	8.6
Prequalify contractors	15	42.9	12	34.3	7	20.0	0	0.0	1	2.8
Use subjective evaluation of factors	6	17.6	13	38.2	9	26.5	2	5.9	4	11.8
Comp. low bid encourages innovation	6	17.6	16	47.0	9	26.5	1	2.9	2	5.9
Comp. low bid guarantees lowest cost, but not best	3	8.8	15	44.1	10	29.4	5	14.7	1	2.9
Negotiated bid encourages favoritism and corruption	8	23.5	18	53.0	7	20.6	1	2.9	0	0.0
Bid evaluation should depend on type of contract	1	2.9	7	20.5	16	47.0	9	26.5	1	2.9

strongly agreeing) of the construction organization respondents. This number is same for the responding general contractors. 63% of the public agency respondents agreed or strongly agreed with the statement, "Choose bidder closest to average."

85% of the responding construction organizations, 84% of the general contractors, and about 69% of the public agencies indicated either agreement or strong agreement with the statement that the selection of contract-award method should depend on type and complexity of the project.

"Prequalify contractors and use low bid method" was favored by about 61% of the responding construction organizations and 77% of the public agency respondents.

Subjective evaluation of factors other than price was favored (agreement or strong agreement) by 83% of the construction organizations, 72% of the general contractors, and 55% of the public agencies.

Competitive low bid method encourages innovation; 71% of the construction organizations, 70% of the general contractors, and about 30% of the public agency respondents either disagreed or strongly disagreed with the statement. It is interesting to note that about 65% of the responding public agencies indicated either agreement or strong agreement with the statement.

A majority of the construction organizations (68%) and general contractors (73%) agreed or strongly agreed that competitive low bid guarantees lowest cost, although it may not guarantee the best cost. About 53% of the public agencies indicated the same.

76% of the public agency respondents agree or

strongly agreed that negotiated bidding method encourages favoritism and corruption. Only 44% of the construction organizations and 43% of the general contractors indicated either agreement or strong agreement with this statement.

7.5 Other Comments

All the respondents were asked to make additional comments on the issue. Some selected comments, organized by the responding groups, are reproduced below.

Construction Organizations

"The competitive bid system is making more money for attorneys than contractors and is forcing quality contractors out of the market."

"Opening all bids in public would be helpful & would stop shopping of bids."

"We bid against companies that aren't even licensed in the counties they work in."

"Preplanning and accurate design by arch./eng./owner would help create a better environment for the bidding process."

"My firm no longer bids public work because I think it is a very discriminatory system."

"Big $ control everything bonding capacity etc., but doesn't mean a quality contractor."

"Low 3 bidders should be short listed and then negotiated by a qualified panel."

Public Agencies

"Subjective evaluation of relevant factors other than price is a good idea, if this could be separated

from politics. I believe politics will get involved and cause corruption."

"Low bid does not always mean the low-"finished cost" as many things can happen during construction with the low bidder."

"Prequalify contractors and then use "low bid" process."

"Low bid is not the best system for construction projects."

7.6 Future Participation

52 out of 100 (52%) responding construction organizations and 19 out of 38 (50%) responding public agencies expressed their willingness to participate in any future investigation on bid-evaluation and contract-award procedures.

Chapter 8
INTERVIEWS

8.1 General

One of the major approaches used in this research was conducting interviews with some of the state's construction industry professionals, representatives of major construction industry associations, and state public agency officials in order to obtain opinions on the issue of competitive low bid method and its 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, or at the investigator's office, and some via telephone and fax.

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

1. *Explain the nature and importance of the research study:*
   Each interviewee was provided with a background of the investigation. The objective of the research was explained. Then a brief introduction was made by the investigator on the nature and the importance of the research study.

2. *Purpose of Competitive Low Bid Method.*
   Interviewees were asked to explain their position on the issue of competitive bidding. They were specifically requested to give their opinions from

their own perspectives as to the purpose of competitive low bidding, problems associated with it as they perceived, and alternative practices.

3. *Problems in the Construction Industry.*
Interviewees were asked to express their feelings about the persisting problems with poor quality in construction projects. They were also asked to point out the reasons they think are responsible for these problems. They were requested to comment on the perceived effects if the traditional bidding method is changed to an alternative procedure.

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

- Professional Associations (Contractors and Subcontractors)
- Public Agency Official
- Construction Attorney
- General Contracting Firms

The outcome of these interviews are presented in the following subsections.

8.2 Interview with Mr. Richard M. Waas, Immediate Past President of the Associated Builders and Contractors (ABC), Florida and President of Waas-Phillips Construction Company, Miami, Florida

Low bid method creates more problems for small contractors and subcontractors. Large contractors have the advantage of economy of scale and they are also in a

position to absorb cost of overlooked items. It is my experience that most low bids are low because some items have been left out by mistake.

Under the average bidding method subcontractors will probably get the right price, will hopefully not walk out from ongoing projects, and will perhaps not ask for frequent change orders. It is difficult to say, however, that average bidding method will bring the desired outcome because our public agencies never tried this method and we do not have sufficient evidence to support its adoption by the public agencies.

Many problems with the existing low bid method can be avoided by improving the quality of design. Most of the change orders are owner-initiated and are results of poor design quality.

Another idea may help us avoid mistakes and make low bidding more realistic. This is practiced in Great Britain and is known as quantity surveying. This practice is based on professional quantity surveyors preparing quantity takeoffs (bill of quantities) for owners, which contractors use to prepare competitive unit price bids for buildings.

8.3 Interview with Mr. Vince Burkhardt, Burkhardt Construction, Inc., West Palm Beach, Florida

In my opinion, owners should spend proper amount of money on design-documents. Contractors bid with confidence when a good set of design documents are available. It means that good design would save owners' money and there will be less change orders.

In private construction I prefer negotiated bidding

since it allows to set up a "partnership" with the owner. In public sector, it is not possible and negotiated bidding will result in favoritism and cronyism. It is true that although public agencies are supposed to award bids only to the low responsible bidder, in practice, responsibility of the winning bidder is not verified as it should be.

I believe with average bidding method, additional taxpayers' money will be spent on public construction projects and I am not sure that the desired results can be achieved with this method. I am in favor of use of meaningful prequalification process and then competitive low bidding.

8.4 Interview with Mr. Bob Talley, Duffey Construction Company, Miami, Florida

Quality of construction suffers because of lack of qualification. Set aside regulations for minorities are also responsible for deteriorating quality of construction. Licensing and bonding requirements should be enforced. Many public agencies waive bonding requirement for minority businesses. Another major reason is poor quality of plans and specifications.

Low bid method as a philosophy is excellent, however, certain things must be controlled for this method to work. I believe problems are not with the low bid method but with the financial and technical ability of the firms.

For some projects negotiated procedure may be appropriate. I have concerns about abuse of subjective methods in public projects. I am not sure that these

methods can be effectively and objectively used.

8.5 Interview with Mr. Larry Gaskins, L.C. Gaskins Construction, Jacksonville, Florida

Too many contractors is the main problem in Florida. Bidding for cash flow only does not do any good to anyone. When you have 15-20 contractors bidding for a project, it is very likely that about half of them are making an error. Prequalification as to size, volume and complexity must be enforced. Not all the contractors should be allowed to bid on all jobs.

Low bid method is not practiced properly. 25% difference between low and high bids are typical. It is difficult to understand why there should be such a big difference. I would prefer open competitive bidding with five to six preselected bidders.

I do not see any problem with the average bidding method as a philosophy - but it will cost more public money. Negotiations with the three low bidders as practiced by the US Air Force and the US Army Corps of Engineers on some of their projects is not a bad idea.

The problem with negotiated bidding is that it takes too long to complete the negotiation. Some kind of combination of competitive and negotiated methods should work.

8.6 Interview with Mr. Joe Dusek, OPUS South Corporation, Pensacola, Florida

In public sector, I am opposed to any other method that is not based on competitive principle. Average bidding will only cost the owner more money, because

nobody will try to be the low bidder. In general, contractors make less profit in public jobs than they make in private projects. Average bidding method will not necessarily solve this problem. Too much competition and a bad economy created this problem.

Design document must be of reasonable quality for good bids to come in. Subjective prequalification will not work - somehow politics would get into play. I am not in favor of post-qualification, because it tends to be arbitrary and subjective. Negotiated bidding can only work if it is done fairly, it is not by itself a bad philosophy. In competitive negotiation with dishonorable owners there is a possibility that the good ideas of the second bidder would be passed on to the low bidder. It is a good procedure only if the owner is fair.

I believe, only owner's prequalification and control policy can make a project better in quality. In public projects, however, I am not sure how prequalification can be objectively used.

8.7 Interview with Mr. Ted Steinwender, Metric Constructors, Inc. Tampa, Florida

Average bidding method is an attractive idea, but there are some questions. Will the subcontractors be selected on the same basis, i.e. on the basis of average bids? If not, it will not work. In practice, sub-bids come on the same day, I am not sure how subs can be meaningfully selected under this method. If subs don't get the increased average price, only general contractors will make more profit under this method, and I do not think that will solve the problems created by the low bid

method.

Quantity surveying makes average bidding meaningful. With all the competing contractors working with the same quantities will result in bids coming within a small range. Cost of public works is most likely to go up if average bidding is used.

It is true that in some projects we have seen bids that are unrealistically low. This kind of bidders, if they are the winners, are very likely to cause quality problems. The project actually may cost more because of contractor bankruptcy and inferior quality.

Switching to an alternative method is not going to be easy. There are problems with low bidding method but very few in the industry are convinced that another method will cause less problems.

Prequalification and competitive negotiation as permitted under the Florida Statutes should be used to solve these problems whenever possible.

8.8 Interview with Mr. Danny J. Shaw, Executive Vice-President, Gold Coast Chapter, Associated Builders and Contractors (ABC)

ABC does not have an official position on this issue. The issue must be understood from both the general contractors' and subcontractors' perspectives. General contractors have problems when sub-bids come in too low. Subs on the other hand, complain that general contractors' bid shopping practice after the award is made, hurts them.

Average bidding method should increase contractor's profit and ideally, it should also increase subcontractor

profit. This method has the potential to improve project quality and timeliness of project completion. This method, however, will not work if subs don't get the average price for their portions of work. This can be enforced by requiring to submit subcontractor-listing with the bid proposal. Another advantage with this method is that it allows GCs to choose and develop relationship with subs. This kind of business relationship is good for both.

Large contractors have the advantage of economy of scale and for that reason low bid method does not create as much problem for them as it does for the small to medium contractors.

RFP method restricts the number of bidders. In public sector, the process of evaluation of criteria becomes subjective and thus open to legal problems.

8.9 Interview with Mr. Larry R. Leiby, Esq, Principal, Leiby, Ferenick, Libanoff and Brandt, Coral Springs, Florida

I have heard about the average bidding method, however, I do not know enough to recommend anything on this method. As far as Florida law is concerned, GCs are not required to provide subcontractor listing with the bids. However, if the list is provided and the award is made on that basis, it cannot be changed without good cause.

The use of competitive negotiated bidding is very rare in public construction in the state of Florida. It is used only when the projects are very small and when a valid emergency exists.

Use of subjective methods opens up the possibility and opportunity of abuse.

8.10 Interview with Mr. Ronald J. Wolfe, President, American Subcontractors Association (ASA) of Florida, Inc.

I believe that the quality of public construction is much below of what the industry is capable of delivering. ASA is in favor of requiring GCs to provide subcontractor listing with bid proposals. This will stop bid shopping so prevalent in the industry. I also think that prequalification should be more rigorously practiced.

I did not hear any problem with the Average bidding method being practiced in some European countries. I believe it has the potential to solve most of the problems associated with the low bidding method.

8.11 Interview with Mr. William A. Scaringe, Director, Division of Building Construction, Department of Management Services, State of Florida

I am not in favor of average bidding method, it will cause price of public construction to go up. There is no guarantee that contractors will not use inferior materials and less qualified laborers under the average bidding method if they are indeed using them under the current low bidding method. I am concerned that price will go up without any benefit to the state.

I think prequalification and postqualification be used along with the low bidding method. In the prequalificaion process, references, financial condition, and past performance of the bidders should be

investigated. Postqualification process of low bidders should involve examination of the qualification of their professional staff and financial resources.

RFQ method, a form of competitive negotiation, has been used by our department for larger projects that are complex in nature. Florida rules permit use of this method in case of emergency and in the best interest of the state. Our experience with RFQ method is favorable. Project costs under this method are less, claims are fewer and projects completed earlier. Subcontractors also go through the qualification process under RFQ procedure, which is not the case with lump-sum competitive low bidding method. Another advantage with RFQ method is value engineering performed by the contractor.

8.12 Interview with Mr. Mark S. Woodall, Executive Director, Florida AGC (Associated General Contractors) Council

In response to the request for an interview Mr. Woodall provided a written input on the issue of alternatives to competitive bidding. His input is included in this report as *Appendix E*. In the following, main points of his input are highlighted.

The Florida AGC Council is in favor of the qualified lump-sum competitive method of awarding public construction projects. According to Florida AGC Council this method provides the best assurance that the Government will receive a quality product at the best possible price. Competitive bid method produces an objective selection process and it has fostered the

development of a large number of small businesses by providing a fair opportunity to compete for government projects.

The Florida AGC Council, however, recognizes other award systems depending on the size and complexity of the project. Other methods should be used if they comply with a list of criteria as outlined. Included among these criteria are: the selection process should be open and objective, selection must be based upon original proposals, all construction work should be competitively bid, and the design responsibility should remain the charge of design professional.

The Florida AGC Council recognizes the inherent problems associated with the competitive low bidding procedure, and suggests that this procedure be "fine-tuned" with the help of the provisions, such as: prequalification, improved plans and specifications, constructability review, partnering, prebid conference, inspection, and preconstruction conference.

8.13 Interview with Mr. Augusto Montanari, Vice President, Cogefar-Impresit, Inc. Miami, Florida

I do not see any problem with the competitive low bidding system. The problems with the US construction industry are the results of poor follow-up procedures used by the public agencies. They should provide bill-of-quantities to the contractors, a lot of confusion and disagreement can be avoided if bill-of-quantities are prepared by the public agencies. Prequalification and RFP methods are great and should be used more in public construction.

APPENDIX A

DMS Form for RFQ Method

EVALUATION SUMMARY SHEET

DIVISION OF BUILDING CONSTRUCTION
GENERAL CONTRACTOR/CONSTRUCTION MANAGER SELECTION

DEPARTMENT OF MANAGEMENT SERVICES

PROJECT NO: _____

PROJECT NAME: _____

APPROPRIATION NO: _____

SELECTION COMMITTEE SIGNATURES

_____

_____

_____

_____

_____

DATE _____

ORGANIZATION NAME	PROFILE						INITIAL SCREENING								INTERVIEW									TOTAL	COMMENTS
	CORPORATION / OR JOINT VENTURE	FINANCIAL STATEMENT	YEARS IN BUSINESS	TOTAL STAFF	TOTAL TECHNICAL STAFF	DISTANCE FROM SITE	RELATED BUILDING EXPERIENCE	FINANCIAL CAPABILITY	SCHEDULING / COST CONTROL	OFFICE STAFF	ON-SITE STAFF	INFORMATION SYSTEMS	DISTANCE TO SITE	SUBTOTAL	REFERENCES	KNOWLEDGE OF SITE & LOCAL CONDITIONS	PROPOSED PROJECT STAFF FUNCTIONS	MINORITY BUSINESS UTILIZATION PLAN	INSURANCE PROGRAM	OVERALL APPROACH / METHODOLOGY	COST CONTROL / VALUE ENGINEERING	SCHEDULING THIS PROJECT	SUBTOTAL		
							20	15	10	15	20	10	10	100	10	10	20	5	5	20	10	20	100		

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APPENDIX B

Questionnaire for Construction Organizations

QUESTIONNAIRE
BID-EVALUATION AND CONTRACT-AWARD SYSTEMS

Identification (Optional)
Name:_____
Position:_____
Company:_____
Address:_____

Please Respond by Putting a Check or Cross Mark Next to the Appropriate Letter.

1. Primary Area of Business: Check One from the Following List. Responses to the Rest of the Questions Should be Based on Your **Primary** Role in Business.

   A___Developer/Builder
   B___Design/Build firm
   C___Architectural or A/E Design Firm
   D___General Contractor
   E___Specialty Contractor/Subcontractor
   F___Other (Please Specify)_____

2. Size of Firm/Organization:

   A___1-9 Employees B___10-25 Employees
   C___26-50 Employees D___Over 50 Employees

3. Chief Area of Business: Check One That is Most Appropriate.

   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 2 years B___2 year to 5 years
   C___5 years to 10 years D___More than 10 years

5. About What Percent (%) of Your Business is in the State of Florida?

   A_____%

6. 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

7. Please Indicate Frequency, in %, of Your Business Obtained Under The Following Bid-Award Methods (All Your Responses Should Represent About 100%)

I. **Competitive** (Conventional method of awarding contract to the lowest responsive bidder)

a) Public Work

i)___0%-25% ii)___25%-50% iii)___50%-75% iv)___75%-100%

b) Private Work

i)___0%-25% ii)___25%-50% iii)___50%-75% iv)___75%-100%

II. **Negotiated** (Negotiation with one or more preselected contractors)

a) Public

i)___0%-25% ii)___25%-50% iii)___50%-75% iv)___75%-100%

b) Private

i)___0%-25% ii)___25%-50% iii)___50%-75% iv)___75%-100%

III. **RFP/RFQ** (Request for Proposal/Request for Qualification - Inviting proposals from contractors for prequalification and/or negotiation. Schedule, Quality Control and Cost Control techniques are considered in addition to the cost.)

a) Public

i)___0%-25% ii)___25%-50% iii)___50%-75% iv)___75%-100%

b) Private

i)___0%-25% ii)___25%-50% iii)___50%-75% iv)___75%-100%

IV. **Other.** Please Specify_____

a) Public

i)___0%-25% ii)___25%-50% iii)___50%-75% iv)___75%-100%

b) Private

i)___0%-25% ii)___25%-50% iii)___50%-75% iv)___75%-100%

8. Use the Following Grading Scale to Indicate Your Ratings of Each Method on the Basis of the Attributes Listed

1 Will always have a positive effect
2 May sometimes have a positive effect
3 Will have no effect
4 May sometimes have a negative effect
5 Will always have a negative effect
6 Do not know/No opinion

Example: If you select **5** *for the attribute "coordination" against competitive low bid method, you are indicating that under this method coordination of project operations would always be adversely affected.*

	Attributes						
Bid Evaluation and Contract Award Methods	Contractor Profit	Owner's Cost	Disputes/ Claims	Coord-ination	Quality Control	Project Duration	Other, Please, Specify _____
Competitive Low Bid[1]							
Competitive Average Bid[2]							
RFP/RFQ[3]							
Negotiated[4]							
Cost-plus-time Bidding[5]							
Subjective Rating[6]							
Other*							

[1] Conventional US practice of awarding contracts to responsive low bidder.
[2] Competitive, but the bid selected is nearest to the average bid, practiced in some European countries.
[3] Contractors are invited to submit proposals for prequalification. Factors, other than cost, are considered to screen contractors. Contract is awarded or negotiated on the basis of sealed bids obtained from the selected contractors.
[4] Negotiation with preselected or prequalified contractors.
[5] Under this practice, bid price is added to the daily "societal cost" multiplied by the number of days the project is estimated to last, with the low total cost winning.
[6] Factors such as references from previous jobs, financial performance, bonding capacity, technical competence, etc. are subjectively rated and combined with the bid price to develop a scoring system. Bid is awarded to the highest scorer.

* Please specify: _____

9. With respect to the current bidding practices as you know them please indicate the degree to which you agree or disagree with the following statements using the following scale.

4-Strongly Agree; 3-Agree; 2-Disagree; 1-Strongly disagree; 0-No Opinion

A Competitive bidding system has worked well in the past and therefore will work well in the future. No Change is necessary.

B Competitive system with provision to award contracts to bidders closest to average should be adopted.

C A combination of competitive and negotiated procedures should be used.

D Bidding procedure should depend on type and complexity of the project.

E Prequalification of contractors should be used instead of changing the traditional bidding procedure.

F Subjective Evaluation of factors (such as, schedule, organization, and qualification of personnel) other than cost should be reflected in contract-award decisions.

G Traditional bidding procedure (Competitive low-bid) encourages contractors to be innovative.

H Competitive low bid procedure guarantees the lowest cost project, but not necessarily the best.

I Favoritism and corruption cannot be avoided if negotiated bid procedure is used.

J Bid-evaluation method should depend on the type of contract (e.g. design-build, turn-key, fixed-price, cost-reimbursable) selected.

10. Any Other Comments: Attach Additional Pages, if Necessary

_____

_____

11. 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 (Or Attach Your Business Card):

Name:
Company:
Address:
City: State: Zip:
Telephone: (___) _____ Fax:(___) _____

THANK YOU FOR YOUR COOPERATION
DATED: MARCH 1993

APPENDIX C

Questionnaire for Public Agencies

QUESTIONNAIRE
BID-EVALUATION AND CONTRACT-AWARD SYSTEMS

Identification (Optional)
Name:_____
Position:_____
Agency:_____
Address:_____

Please Respond by Putting a Check or Cross Mark Next to the Appropriate Letter.

1. How would you describe your agency's bid evaluation procedure?

   A___Based on Bid Price only
   B___Based on Bid Price and Responsiveness
   C___Based on Bid Price, Responsiveness, and *Other* Factors,
   Please Specify_____

2. Are you satisfied with the procedure currently in use in your agency?

   A___Yes B___Somewhat
   C___No

3. What type of Construction is your agency involved in? Check one that is most appropriate

   A___Public Buildings B___Renovation/Additions/Interior
   C___Heavy (Engineering/Highway)
   D___Other (Please specify)_____

4. In addition to lump-sum fixed price contracting, does your agency also use the following methods of contracting? Please check if *yes*.

   A___Design/Build B___Construction Management/General Contracting
   C___Turnkey D___Other (Please specify)
   _____

5. Please Indicate Frequency of Your Agency's Work Awarded Under The Following Methods (Check appropriate boxes)

Methods	0%-25%	25%-50%	50%-75%	75%-100%
Competitive (Conventional method of awarding contract to the lowest responsive bidder)				
Negotiated (Negotiation with one or more preselected contractors)				
RFP/RFQ (Request for Proposal/ Request for Qualification - Inviting proposals from contractors for prequalification and/or negotiation. Schedule, Quality Control and Cost Control techniques are considered in addition to the cost)				
Other Please Specify _____ _____				

6. Use the Following Grading Scale to Indicate Your Ratings (in Terms of Positive Effects) of Each Method on the Basis of the Attributes Listed

1	Will always have a positive effect	2	May sometimes have a positive effect
3	Will have no effect	4	May sometimes have a negative effect
5	Will always have a negative effect	6	Do not know/No opinion

Example: If you select 5 for the attribute "coordination" against competitive low bid method, you are indicating that under this method coordination of project operations would always be adversely affected.

Attributes

Bid Evaluation and Contract Award Methods	Contractor Profit	Owner's Cost	Disputes/ Claims	Coord-ination	Quality Control	Project Duration	Other, Please, Specify _____
Competitive Low Bid[1]							
Competitive Average Bid[2]							
RFP/RFQ[3]							
Negotiated[4]							
Cost-plus-time Bidding[5]							
Subjective Rating[6]							
Other*							

[1] Conventional US practice of awarding contracts to responsive low bidder.
[2] Competitive, but the bid selected is nearest to the average bid, practiced in some European countries.
[3] Contractors are invited to submit proposals for prequalification. Factors, other than cost, are considered to screen contractors. Contract is awarded or negotiated on the basis of sealed bids obtained from the selected contractors.
[4] Negotiation with preselected or prequalified contractors.
[5] Under this practice, bid price is added to the daily "societal cost" multiplied by the number of days the project is estimated to last, with the low total cost winning.
[6] Factors such as references from previous jobs, financial performance, bonding capacity, technical competence, etc. are subjectively rated and combined with the bid price to develop a scoring system. Bid is awarded to the highest scorer.

* Please specify: _____

7. With respect to the current bidding practices as you know them please indicate the degree to which you agree or disagree with the following statements using the following scale.

4-Strongly Agree; 3-Agree; 2-Disagree; 1-Strongly disagree; 0-No Opinion

A_____Competitive bidding system has worked well in the past and therefore will work well in the future. No Change is necessary.

B_____Competitive system with provision to award contracts to bidders closest to average should be adopted.

C_____A combination of competitive and negotiated procedures should be used.

D_____Bidding procedure should depend on type and complexity of the project.

E_____Prequalification of contractors should be used instead of changing the traditional bidding procedure.

F_____Subjective Evaluation of factors (such as, schedule, organization, and qualification of personnel) other than cost should be reflected in contract-award decisions.

G_____Traditional bidding procedure (Competitive low-bid) encourages contractors to be innovative.

H_____Competitive low bid procedure guarantees the lowest cost project, but not necessarily the best.

I_____Favoritism and corruption cannot be avoided if negotiated bid procedure is used.

J_____Bid-evaluation method should depend on the type of contract (e.g. design-build, turn-key, fixed-price, cost-reimbursable) selected.

8. Any Other Comments: Attach Additional Pages, if Necessary

_____

_____

9. 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 (Or Attach Your Business Card):

Name:
Company:
Address:
City: State: Zip:
Telephone: (___) _____ Fax:(___) _____

THANK YOU FOR YOUR COOPERATION
DATED: APRIL 1993

APPENDIX D

Sample Cover Letters

Florida International University

March 19, 1993

Dear Construction Industry Professional:

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 alternatives to bid evaluation and contract-award practices.

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 opinions of the several groups that make up the industry. All the gathered data and information will be classified, analyzed and utilized for the presentation of the findings. 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, conclusions and recommendations along with all the pertinent information 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. Irtishad 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 depending on your input. Your timely response will be greatly appreciated.

Thank you in advance.

Sincerely,

Irtishad Ahmad
Assistant Professor

Department of Construction Management • College of Engineering and Design
VH 230, University Park, Miami, Florida 33199 • (305) 348-3172 • FAX (305) 348-2766

Florida International University

April 6, 1993

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 alternatives to bid evaluation and contract-award practices.

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 opinions of the several groups that make up the industry. All the gathered data and information will be classified, analyzed and utilized for the presentation of the findings. Information obtained from you and your agency will only be presented as part of a class or group statistics and will not be singled out on an individual basis.

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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 depending on your input. Your timely response will be greatly appreciated.

Thank you in advance.

Sincerely,

Irtishad Ahmad
Assistant Professor

Department of Construction Management • College of Engineering and Design
VH 230, University Park, Miami, Florida 33199 • (305) 348-3172 • FAX (305) 348-2766

APPENDIX E

Correspondence from Florida AGC Council

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

August 5th, 1993

Irtishad Ahmad, Ph.D, P.E.
Florida International University
Department of Construction Management
University Park
Miami, FL 33199

Dear Dr. Ahmad:

On behalf on the Florida Associated General Contractors Council I would like to thank you for the opportunity to provide you with input concerning the study you are conducting on "Alternatives To The Competitive Bid System".

As you are aware, the construction industry in Florida has been severely crippled by the national recession. The number of construction projects, both public and private, has dramatically decreased over the last several years. This has caused intense competition within the industry for those projects that are available, and in many cases decreased profit margins that were previously obtained for similar types of projects.

This increased competition has caused contractors to tighten their belts and seek innovative ways to deliver construction projects in a more cost efficient and effective manner. Some individuals and groups have pointed their respective fingers at the current public construction delivery system, indicating that the competitive system should be scrapped for a more advanced method of awarding public construction. The Florida AGC Council is totally opposed to this suggestion.

The Florida AGC Council endorses the qualified lump-sum competitive bid system as the primary method of awarding public construction contracts. This method requires that the bid which is chosen must contain the lowest price, be responsive to all advertised specifications, and be submitted by a responsible or qualified bidder. Its use is typically mandated by statute or regulation and reflects the government's recognition that open and competitive bidding provides value to the taxpayers and fairness in placement of taxpayer-funded construction work.

The competitive bid system in the award of taxpayer financed construction still provides the best assurance that the government will receive a quality product at the best possible price.

This is important for several reasons:

- The government has a fiduciary responsibility to expend the taxpayers' money in the most cost-effective manner. The taxpayers demand, and should expect, the lowest price for the construction the government procures with their tax dollars - to do otherwise violates the public trust.

- The competitive bid system is the easiest procurement system to police for it produces an objective selection process. All other systems include a degree of subjective analysis which can lead to favoritism and/or discrimination.

- The competitive bid system prevents any one individual from having influence over the award of a construction contract. The bids are received in sealed envelopes, opened publicly, and read aloud.

- The competitive bid system provides an incentive to contractors to innovate, thereby advancing technology and the quality of construction.

- The competitive bid system requires plans and specifications that allow contractors to respond accurately in terms of the money, manpower, time and skill necessary to construct the project.

- The competitive bid system maximizes competition by permitting all responsible bidders to participate in the system. It assures that public funds are administered without regard to race, sex, or personal favoritism.

- Indeed, with respect to construction, the open competitive bid system has fostered the development of a large number of small businesses which have been assured through the use of the system that they will have a fair opportunity to compete for government contracts.

The open competitive bid system is beneficial to both parties to a contract. The owner, and thereby the tax paying public, are provided the highest quality project at the lowest possible cost. The construction contractor is assured fairness and integrity in the selection process.

The Florida AGC Council does, however, recognize other award systems depending on the size and complexity of the project, provided that the delivery systems fulfill an obligation to the public trust by complying with the following criteria:

- Provide the best product for the least amount of price to the taxpayers;
- Establish a single point of management and financial responsibility to the owner;
- Mandate open and objective selection procedures;
- Bar political influence in the selection process;
- Safeguard the public interest in public contracting integrity;
- Base selection upon original proposals;
- Provide that all construction work be competitively bid; and
- Assure that the design responsibility remains the charge of the design professional.

The Florida AGC Council believes that adherence to these criteria will have the result of maintaining fair and equitable procedures for all industry participants and promote positive relations thus diminishing potential adversarial relationships and litigation.

As mentioned earlier, the Florida AGC Council supports the competitive bid system as the primary method of awarding public construction contracts. There are, however, problems associated with this method as with any award system. The charges of abuse and break downs in the competitive bid method can be addressed by fine tuning the system.

Prequalification

Clearly the government has the right to have reasonable assurance that the construction contractor with which it does business is able to meet their contractual commitments and display skill, integrity, and responsibility. Construction contractors, after having expended time, effort, and expense to prepare a bid, have the right to have the contract awarded to them if they submit the lowest responsive bid. These two goals can be accomplished through the proper application of prequalification criteria. Prequalification has proven to be an effective method for assuring that both the owner's and contractor's interests are protected when used in conjunction with the open competitive bid system.

Improved Plans and Specifications

Government agencies seeking bids on construction projects have an obligation to provide bidders with complete quality plans and specifications. Inadequate plans can create uncertainty in the minds of bidders and eventually lead to changes, claims, and disputes.

A reason for some decline in the quality of plans and specifications is budget cuts that agencies have been subjected to over the past several years. The cutbacks have resulted in many agencies reducing their engineering staffs or hiring less experienced engineers. Also, budget cuts result in insufficient funds for proper designs and in "corner cutting". Agencies must be provided funds sufficient for complete project designs or they will be forced to scale back projects to fit within budget limitations.

Constructability Review

Another way to improve on the quality of project design is to allow for construction contractors to undertake constructability reviews of plans and specifications. Such a review should be undertaken on a professional services contract basis. The review could include an assessment of cost, material availability, alternative construction methods, unique site conditions and conflicts in design. The reviews could also include value engineering proposals which identify cost effective changes in design which do not impact on quality or on the project's intended purpose.

Partnering

AGC sees the need to develop a team-building process that creates mutual trust and respect for one anothers' respective roles in the construction process and recognizes the risks inherent with those roles. We see a need to seek ways to develop harmonious relationships at our jobsites and to change the old notion that in order for someone to win-- someone must lose. AGC wants to develop a concept that creates a win/win attitude among all the team players "Partnering" is one such concept.

Prebid Conference

The prebid conference is another way to eliminate uncertainties or confusion with project design. A prebid conference could be used to familiarize bidders with the intent of the plans and specifications. It allows bidders an opportunity to raise questions and seek clarification. When appropriate, the prebid conference could be held at the work site to stimulate further investigation of site conditions. All questions and answers could be reduced to writing and sent to all plan holders in the form of timely addenda.

Inspection

Once the contract has been awarded and the construction contractor has begun work, the public owner must remain involved. Although it is the construction contractors' responsibility to supervise and oversee construction activities, the public owner must provide an on-site representative to interpret the drawings and inspect the work.

Preconstruction Conference

After the contract has been awarded, executed, proper bonds furnished, and prior to beginning actual construction, it may be advisable to have a preconstruction conference between the owner, the architect/engineer and the contractor.

The incorporation of these additional steps within the competitive system is the best assurance that taxpayers will receive a quality construction product at the best possible price. Governmental entities that are experiencing problems with the competitive bid system need to address the problems individually, not abandon a system that has served this country for nearly 200 years.

AGC recognizes that no construction award system can operate without flaw. Down cycles in construction activity cause us all to look around to find someone or something to blame. The competitive bid system is not the problem. The competitive bid system is a time proven and honored method of awarding construction contracts. This system, as with any system, is nothing more than a tool that must be properly utilized in order to function as intended.

The Florida AGC Council appreciates the opportunity to provide you with input on this topic. Please do not hesitate to contact us if we can be of any assistance to you or provide you with any additional information.

Respectfully submitted,

Mark S. Woodall
Executive Director

APPENDIX F

Letters from Individuals, Companies and Associations

April 5, 1993

Irtishad Ahmad, Assistant Professor
Department of Construction Management
College of Engineering and Design
FLORIDA INTERNATIONAL UNIVERSITY
VH23D
University Park
Miami, Florida 33199

Dear Professor Ahmad:

Your Questionnaire on bid-evaluation and contract-award systems deals with a problem that our industry is struggling with that is of great importance to the future. The primary problem lies in the competitive bid procedure with public sector projects which have been a considerable part of my career.

I have designed a number of public and private sector facilities of various types in the $1- to $10-million range. All the public sector projects were competitively bid and all the private sector projects were either negotiated or used a qualifications-based selection to determine those who were permitted to bid (RFQ). Without exception, the negotiated or RFQ bid projects were completed on schedule or ahead, well within budget, and the quality of the workmanship was quite good. Several of the projects were submitted for the Palm Beach Chapter of the American Institute of Architects Craftsmanship Award and they won. Additionally, the City of Boca Raton gave a special community appearance award to one of them. Additionally, there were relatively few change orders and no claims or lawsuits on any of the projects. These projects were conducted in a spirit of cooperation with goals of the Owner, Contractor, and Architect meshing. And, almost equally important, they were enjoyable.

Interestingly, with one exception, every competitively bid public sector project experienced problems with management of the project by the Contractor, poor supervision, contentious relationships, change order requests by the General and subcontractors, poor workmanship, unauthorized material or equipment substitutions, attempts, claims and counterclaims and, in several cases, protacted and expensive litigation.

Why? I believe the key lies in the atmosphere created by the pressures of competitive bidding. The project becomes the entree for the Contractor to engage in a game of arbitrage between what he can sell the project to the owner for and what he can buy it for from the subcontractors and suppliers. The arbitrage game players oftentimes are brokers who bring little to the process. Inherently, the whole experience is an adversarial one from the outset. It is difficult, if not impossible, to build relationships based upon

common goals that understand that a building will stand for some period of time as a testament to the quality of the services provided and the work performed.

In short, pride in what we each do.

As I am sure you are aware, owners come to the building process out of some need. They generally have three concerns with the building that is to satisfy their need.

- Cost
- Time
- Quality

Optimizing all three is difficult enough when the various parties to the project are engaged in fully cooperative mutually beneficial enterprise. The competitive bid procedure does not allow optimization of these considerations unless access to the bid table is controlled on the basis of a qualifications-based selection procedure. And incidentally, the one public project that was a good experience was, in effect, an RFQ procedure. The five contractors who bid it were all well known to us, had worked with us in the past and bid because we specifically asked them to do so. The project was relatively remote and did not generate any interest from other contractors.

A part of what concerns me is that most public entities go through a qualifications-based selection procedure to retain their professionals and then, almost literally, throw the project out to the wolves to get it constructed. It seems that qualifications should reasonably be a part of the entire process of getting buildings designed and built.

The political arena can also cause the balance between considerations of cost, time, and quality to shift over time without the participants taking into full account the long-term impacts of these shifts.

I wish you success in your investigation and appreciate being included. I would like to receive a copy of your conclusions and recommendations, if possible. I am currently changing my business association but can be reached through my home address, which is on the Questionnaire.

Very truly yours,

James H. Anstis, FAIA

JHA/kmm
Ahmad.A05

BILTMORE
CONSTRUCTION

April 2, 1993

Mr. Irtishad Ahmad
Assistant Professor
Florida International University
Department of Construction Management
University Park, VH 230
Miami, Florida 33174-9973

RE: QUESTIONNAIRE - BID EVALUATION/
CONTRACT AWARD SYSTEM

Dear Mr. Ahmad:

I welcome the opportunity to express my thoughts on the competitive bid system.

For many years our firm has provided services to our customers in the private sector through a negotiated contract. We have found this delivery system eliminates the adversarial relationships which is the cornerstone of the competitive low bid method.

In order for our industry to go forward we must eliminate the waste in energy, creativity and resources that are produced in the pursuit of the cheapest product or service.

If instead of focusing our efforts on the cheapest product we aim for improving the quality of goods and services, we would leave our children a better world while improving the quality of our lives.

I look forward to reading about your research.

Very truly yours,

BILTMORE CONSTRUCTION CO., INC.

Edward A. Parker, Jr., PE
Executive Vice President/C.O.O.

EAPjr/dgm

1055 Ponce De Leon Blvd., Belleair, FL 34616 • 813-585-2084

AIAFlorida
The Florida Association of the American Institute of Architects

April 9, 1993

Dr. Irtishad Ahmad
Assistant Professor
College of Engineering and Design
Florida International University
VH 230, University Park
Miami, Florida 33199

Dear Dr. Ahmad,

It has been brought to our attention that you are heading up a study to investigate alternatives to bid evaluation and contract award practices through a grant provided by the building construction industry advisory committee.

The Florida Association of the American Institute of Architects is very interested in this subject matter and would appreciate it if you would put us on your mailing list to receive any information concerning this study. Also, if we can help you in this endeavor, we would be most eager to do so.

During the recent session of the Florida Legislature, the subject of bidding at the city and county government levels was a major topic of discussion. One of the areas of interest by legislators was whether the in-house governmental agencies could bid against private sector providers in the construction industry. Of course, the concern in this area was whether a level playing field could be determined between the public and private sectors so that government could tell whether they were actually saving money or not. Is this part of your study?

Thank you in advance for any information that you may develop in this research effort and we look forward to hearing from you in the future on this matter.

Best Regards,

George A. Allen, Hon. AIA
Executive Vice President

GAA/mj

CC: Jim Anstis, FAIA, Regional Director
Jerome Filer, AIA, President
Rudy Arsenicos, AIA, Vice President
Public Affairs Commission

104 East Jefferson Street
Tallahassee, Florida 32301
Telephone 904.222.7590
Facsimile 904.224.8048

CITY OF
FORT LAUDERDALE

Venice of America

May 3, 1993

Mr. Irtishad Ahmad, Assistant Professor
Florida International University
Department of Construction Management
College of Engineering and Design
VH 230, University Park
Miami, FL 33199

Dear Professor Ahmad:

Attached for your review is a completed copy of your questionnaire pertaining to Bid-Evaluation and Contract-Award Systems. I appreciate the opportunity to participate in your analysis. Some of the areas of evaluation, however, attempted to produce answers of a general nature, and unfortunately in the area of construction bids and contract awards, generalities may not be possible. As we discussed on the telephone, please feel free to contact me for any future follow-up or discussion.

Sincerely,

CITY OF FORT LAUDERDALE

Ed Udvardy
Public Works Administrator

EU/jj/l-ahmad

Attachment(s)

cc: Bud Bentley, Assistant City Manager