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CONTRACTING FOR QUALITY FACILITIES

Report AL702R1

AD-A193 201

October 1987

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Executive Summary

CONTRACTING FOR QUALITY FACILITIES

Quality facilities are essential to the DoD and the people who live and work at defense installations. Currently, contracting for facilities is done almost exclusively with sealed-bid solicitations, low-bid awards, and firm-fixed-price contracts. Quality is managed primarily with the drawings and specifications that accompany the invitations for bids and by Government inspections during construction.

We have found that less traditional contracting can improve the quality of the facilities acquired. Two examples are competitive negotiation and the use of award fees. The former makes past performance count in contractor selection. The latter promotes performance improvement on current projects. Both provide strong incentive for quality construction.

Contracting officers currently find it difficult to depart from traditional contracting. They are discouraged by real and perceived barriers in the Federal Acquisition Regulation (FAR) and, more significantly, by Military Service rules, regulations and policies. They are also hampered by massive documentation requirements and lengthy approval processes.

We recommend that the Deputy Assistant Secretary of Defense (Installations) take the following actions:

- Propose changes and clarifications to the FAR to remove barriers that currently limit the use of competitive negotiation and fixed-price-award-fee contracts.
- Encourage the Services to remove similar barriers from their construction regulations.

We believe such actions will provide a contracting environment more conducive to contractors building high-quality DoD facilities.

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CHAPTER 1

FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

FINDINGS AND CONCLUSIONS

Newly constructed DoD facilities, like those of the private sector, are judged by the level of workmanship – their appearance – their maintainability, and the degree to which they serve their intended functions. To the extent that they incorporate those features, they are adjudged quality facilities.

Attaining those features in DoD facilities depends on a construction process that includes requirements determination, facility design, military construction (MILCON) programming, and procurement strategy – the selection of a contractor and the selection of a type of contract. In this process, the procurement strategy can be the factor with the greatest influence on facility quality because through it, strong incentives for quality construction can be provided.

Certain procurement strategies significantly enhance the contracting officer's ability to influence contractor selection and contract execution, and DoD is concerned that contracting officers do not always have the necessary influence to select those strategies, particularly when less traditional¹ contracting approaches are needed. Although firm-fixed-price (FFP) contracts awarded using sealed bidding – the most common procurement strategy – may produce good results under many conditions, other strategies may be required in some situations.

In investigating alternative strategies, we looked at the private sector to determine whether it is employing new techniques to enhance quality and if so, whether those strategies are applicable to DoD facility construction. We found few construction contracting innovations in the private sector. Private owners develop facility procurement strategies that, like those of DoD, address contractor selection and contract execution. However, that is where the similarities end.

¹The term "less traditional" is used to refer to procurement practices that are permitted by the Federal Acquisition Regulation but not commonly used. The term "innovative" is used when a strategy is new and is a change to existing procurement practices.

Contractor selection in the private sector is not governed by a body of statutes, regulations, directives, and tradition as it is in DoD. Owners choose the contractor they believe will provide assured product quality, and they frequently make that selection in a noncompetitive environment. A contractor who fails to produce gets no more work. Contractor performance is bound by both the contract and the unwritten desires of the owner. The construction contract limits the owner's demands and actions only to the extent that the contractor is willing to reject them and/or take the owner to court. Thus, an owner has significant leverage in obtaining the desired facility quality. If necessary, the owner can make arbitrary, unfair, and in some cases, only marginally legal decisions. In such an environment, an owner has little need for innovative procurement strategies that enhance his influence.

DoD acquires its facilities in a much different environment. Numerous laws, regulations, and policies govern its facility acquisitions and create an environment in which quality is much more difficult to obtain. To improve facility quality, some DoD contracting officers have turned to less traditional procurement strategies. Since those strategies are new, they are often referred to as innovations even though DoD contracting rules permit them.

Less traditional procurement strategies give the contracting officer greater influence in contractor selection and offer him a means to reward quality work. Flexibility in selection usually produces a contractor who is more likely to do quality work, and rewards for good work provide a stronger incentive for quality facilities than do the traditional negative incentives (penalties, cancellation for nonperformance, etc.). Contracting officers who have used these approaches feel that they almost always produce a higher quality facility.

Contracting officers were also unanimous in their belief that any type of innovation requires additional documentation, additional approvals from higher headquarters, and additional effort required to overcome organizational inertia. We found, however, that the Federal Acquisition Regulation (FAR) does not require the additional work; in virtually every instance in which such work is required, it is imposed by the Service, Major Command, or construction agency. Frequently, the additional effort is expended to provide protection against potential problems that may never occur. In short, less traditional contracting is resource-intensive because the Services, Major Commands, and construction agencies make it that way.

RECOMMENDATIONS

Although it does not prohibit less traditional procurement strategies, the FAR language is susceptible to interpretations that inhibit their use. We recommend that the FAR language be changed to encourage the use of an abbreviated request for proposals (RFP) process for selecting construction contractors and using fixed-price-award-fee (FPAF) contracts. Proposed changes are detailed in Appendix E.

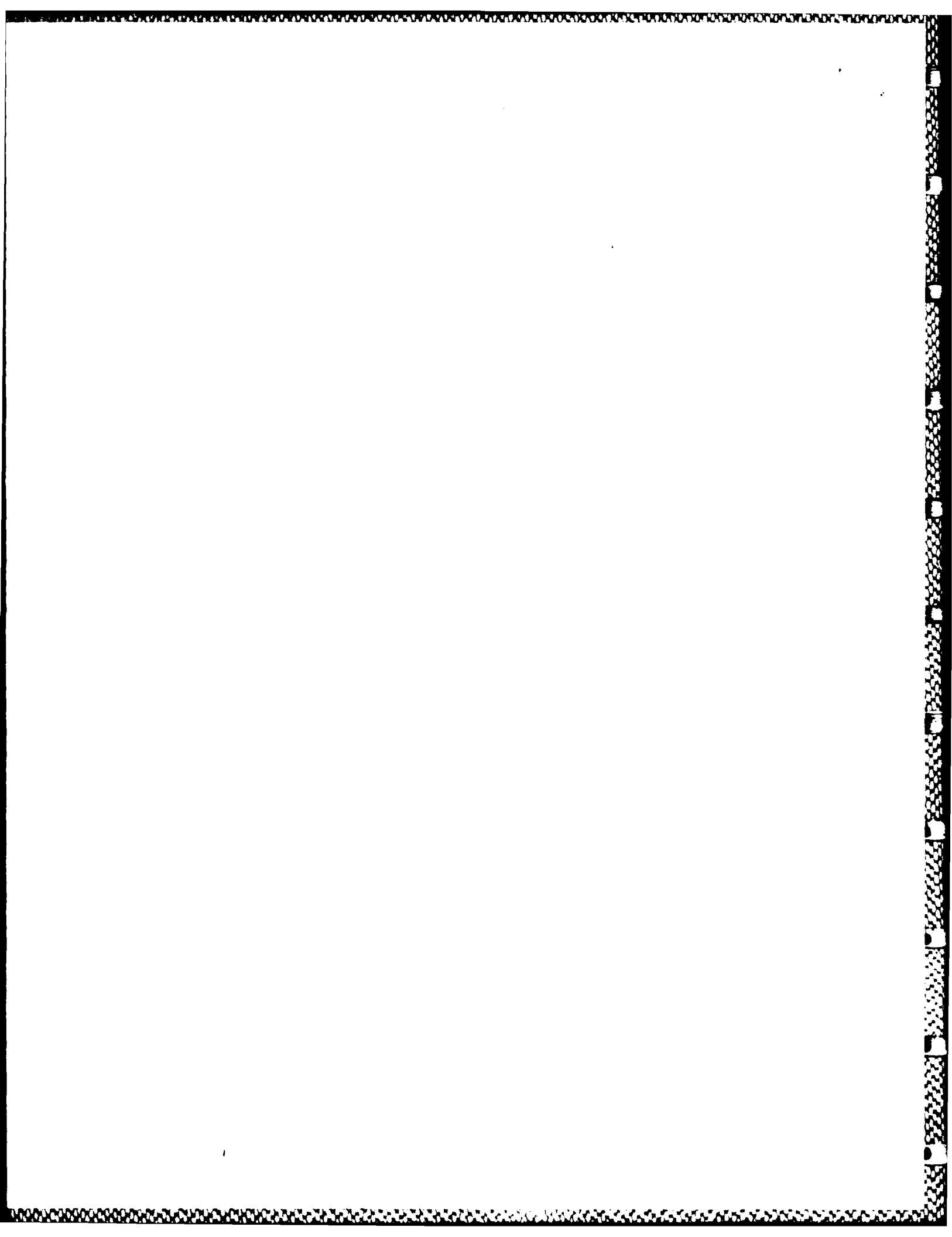
The Services are responsible for most of the requirements that limit or prohibit the use of innovative procurement strategies. The Deputy Assistant Secretary of Defense (Installations) [DASD(I)] should encourage the Services to remove them. They are discussed in Chapter 5.

The U.S. Army Corps of Engineers has begun a concentrated effort to eliminate poor-quality contractors. Although that effort does not involve innovative techniques, it exemplifies the use of procurement strategies to improve the quality of facilities. The DASD(I) should endorse that program and encourage the Services to use procurement strategies that support the effort to obtain quality facilities.

We believe that the use of less traditional procurement strategies can improve the quality of DoD facilities. Some of the more promising of these strategies are competitive negotiations and the fixed-price-award-fee contract. These and other less traditional or innovative strategies are discussed in detail in Appendix A. We do not, however, recommend that traditional methods be abandoned. In many situations, traditional acquisition methods are preferred. However, when a different approach can produce a higher quality facility, it should be used.

REPORT ORGANIZATION

The remainder of this report presents the results of our study. Chapter 2 describes the elements involved in achieving quality facilities and their interrelationships. It shows that procurement strategy is the dominating element, and the remainder of the report focuses on the major components of procurement strategy, contractor selection, and contract type. Chapter 3 describes a variety of available procurement strategies; the benefits of taking less traditional approaches are discussed in Chapter 4; and the barriers to change are identified in Chapter 5. The five appendices provide examples of procurement procedures, results from surveys of DoD field organizations, descriptions of less traditional methods currently in use, and suggested changes to the FAR.



CHAPTER 2

ACQUIRING QUALITY FACILITIES

The DoD facilities community – from those who design the facilities through those who use them – is virtually unanimous in a desire to construct quality working and housing facilities. As the quality of those facilities is improved, worker productivity can be expected to increase, the improved quality of life in military housing will aid in the retention of personnel, and the life-cycle cost of facilities will be reduced. However, despite the agreement on its importance, no generally accepted definition of quality facilities exists; the quality of a DoD facility is more often based on perceptions than on any Military Service measurements.

We have developed a set of factors – product characteristics – as part of a framework from which we can define quality facilities. The other part of that framework – the process considerations – consists of the facility construction activities that interact to form the perceptions of quality (see Figure 2-1). From that framework, we define a quality DoD facility as one that meets its construction milestone schedules and its cost target, requires minimal Government oversight and administrative effort during construction and minimal maintenance over its life cycle, and satisfies user functional needs and aesthetic perceptions.

Process considerations form perceptions of quality during the construction of a facility. Some of those perceptions (e.g., those involving schedule and cost) are based upon observed facts, while others (e.g., those involving the amount of Government construction oversight and administrative effort required) are mostly based upon judgment. Because of the transitory nature of process considerations, however, their impact decreases with time until eventually they are almost completely forgotten by customers.

Product characteristics, on the other hand, are the physical attributes of a facility that affect how it looks and how it functions, and they form the perceived facility quality throughout its life. These characteristics are based primarily on the level of workmanship and the maintainability and functionality of the facility.

Product Characteristics

- Satisfies user requirements
- Is maintainable
- Is functional
- Appeals to the user

Process Considerations

- Meets the schedule
- Meets cost targets
- Requires minimal Government construction oversight
- Requires minimal Government administrative effort

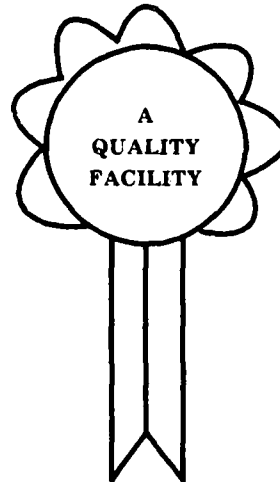


FIG. 2-1. COMPONENTS OF FACILITY QUALITY

Actions occurring during the DoD facilities acquisition process affect components of quality facilities (see Figure 2-2). The facilities acquisition process is a series of steps that proceed from a determination of the need for a facility through its completion and acceptance (see Figure 2-3). The following acquisition process actions are the major ones that affect the construction of quality facilities:

- Requirements determination – the expression of a functional need by the user. In this process, the user may be assisted by a Service contracting agent [either the Naval Facilities Engineering Command (NAVFAC) or the U.S. Army Corps of Engineers (USACE)]. The output of this process is a Project Development Brochure (PDB).
- Project design – the preparation of project drawings and specifications based on the PDB.
- MILCON programming – the process by which the proposed project is submitted for congressional approval and funding.
- Procurement strategy – the process of determining the most effective type of contract (firm-fixed-price, cost-plus-award-fee, etc.) and selecting a contractor.
- Contract execution – the process through which the contract is monitored (schedule, cost), quality control/assurance is performed, and other contract terms are carried out.

These actions occur at different times in the conventional facility acquisition process. The process differs somewhat for design/build contracts where activities

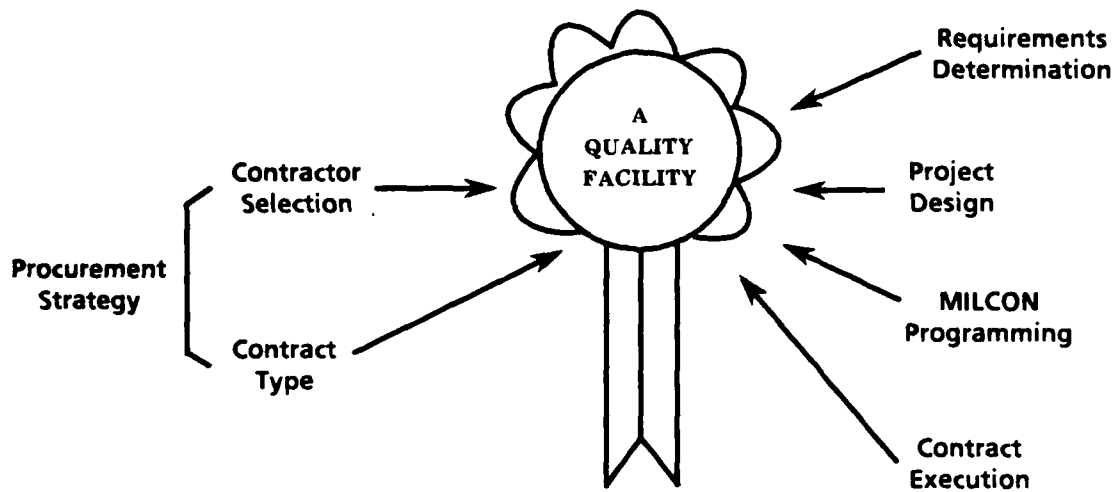


FIG. 2-2. ACQUISITION PROCESS ACTIONS AFFECTING THE QUALITY OF FACILITIES

such as project design and facility construction occur concurrently. The conventional facility acquisition process is described since few DoD projects are acquired using design/build contracts. At the front end of the facility acquisition process are the requirements determination and the MILCON programming actions (see Figure 2-3). The project design begins early in the process and extends through the performance of the construction contract. Engineering during construction, which consists of design changes in support of change orders and the like, can be considered

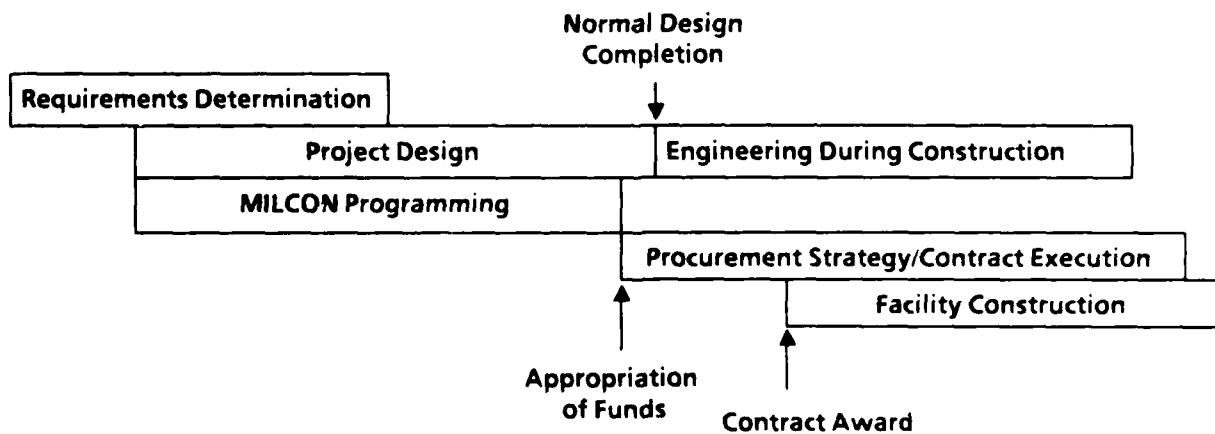


FIG. 2-3. THE CONVENTIONAL FACILITY ACQUISITION PROCESS

as an extension of project design. The selection of a procurement strategy marks the beginning of the contracting and construction phase and is a critical point in the facility acquisition process. Many decisions that determine how much a contracting officer can influence the construction of the facility are made at that time. The two major areas of influence are selection of a contractor and the choice of a contract type. The final acquisition process action influencing the quality is the actual contract execution.

Acquiring a quality facility requires a continual balancing and trading off among actions that affect quality: changes in design may be needed to stay within cost targets; requirements may change after the design has been substantially completed; or the contract may have to be awarded before the end of the year thereby influencing the timing of acquisition actions. Whatever tradeoffs have to be made, the procurement strategy, including the selection of a contractor and contract type has a dominating effect on quality.

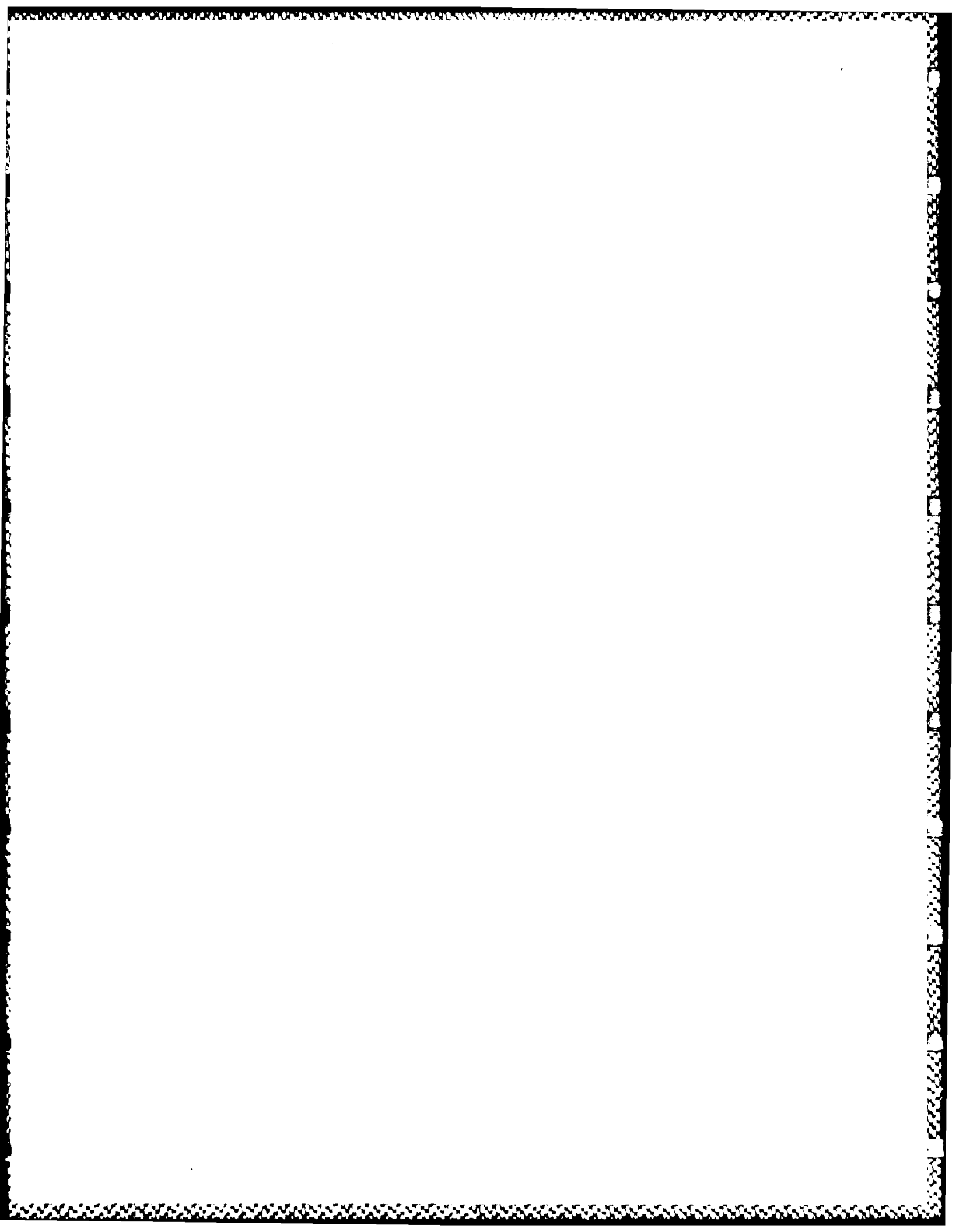
In the selection of a contractor, the FAR requires the use of full and open competitive procedures whenever possible. In accordance with the FAR, contractors can be selected through sealed bidding in response to an invitations for bids (IFB) or through "competitive negotiations." The most prevalent procurement method for DoD facility construction is the solicitation of sealed bids from a bidders list and the selection of the lowest bidder who is both responsive and responsible. The sealed bidding method can also involve prequalification of bidders based on technical and other capabilities, restriction of the IFB to qualified bidders, and selection of the lowest price from the restricted list of bidders.

In the second contractor selection method – competitive negotiation – an RFP is sent to interested bidders who submit concept designs and, in some cases, offers; the contracting officer then selects the successful bidder on the basis of technical approach, cost proposals, and previous satisfactory performance. The selection can be made in a single step or it can occur in multiple steps, with the list of offerors first being shortened through an evaluation process. Negotiations may or may not occur during this process; they are not always required by the FAR (FAR 15.610) nor by the DoD FAR Supplement (DFARS) for construction contracts. In all cases, the successful offeror is subjected to a preaward survey to determine whether he is responsible and can reasonably be expected to complete the contract.

DoD can choose among several contract types in acquiring a facility. The following types of contracts are referenced by the FAR:

- Firm-Fixed-Price
- Fixed-Price Incentive
- Fixed-Price with Economic Price Adjustment
- Cost-Plus-Award-Fee
- Cost-Plus-Incentive Fee
- Cost-Plus-Fixed-Fee

The FAR also permits the use of hybrid contracts where characteristics of more than one contract type are combined. Selection of the contract type has a major impact on the contracting officer's influence over the contractor's performance during contract execution; hence, it also has a major influence on quality. (In Chapter 3, we discuss the most effective use of each contract type.) Despite the number of contract types available, almost all of DoD's facilities are acquired through firm-fixed-price, sealed-bid contracts.



CHAPTER 3

PROCUREMENT STRATEGIES

TRADITIONAL PROCUREMENT STRATEGIES AVAILABLE FOR FACILITIES ACQUISITION

Contractor Selection

In the procurement process, the contracting officer may choose to use sealed bidding or contracting by competitive negotiation. In sealed bidding, bids are submitted in response to an IFB, are opened publicly, and only price-related factors are considered [FAR 14.01(e)]. Firm-fixed-price or fixed-price with economic price adjustment contract types must be used [FAR 14.104 and 16.102(a)], and the award must go to the lowest responsible bidder whose bid conforms to the requirements of the solicitation.

In contracting by competitive negotiation, contractors submitting proposals in response to an RFP are normally required to provide additional information. They may have to furnish a detailed proposal on how they would do the job and information on their prior related experience and the personnel they intend to use on the project. The contracting officer negotiates with the contractors who have a reasonable chance of being selected for award – contractors in the competitive range – on both price and nonprice factors in the proposal in an effort to minimize cost to the Government and maximize benefits.

Contract Types

The contracting officer chooses the type of contract to be used for the acquisition. If sealed bidding is selected, a firm-fixed-price contract must be used; if contract by negotiation is selected, the FAR allows more options. The type of contract determines how much risk each party will assume, what incentives will be included, and how much time and effort must be spent administering the contract.

The traditional contract types used for construction are described in the following subsections and compared in tabular form in Appendix A. The FAR authorizes two broad categories of contract types – fixed-price and cost-reimbursement. A

fixed-price contract calls for a firm price or a price that can be adjusted only under predetermined conditions. A cost-reimbursement contract, on the other hand, requires the Government to pay, within certain limits, the actual cost of doing the work plus (in most cases) a reasonable profit to the contractor.

Fixed-Price Contracts

Firm-Fixed-Price (FFP) Contracts. The most common fixed-price contract is the firm-fixed-price (FAR 16.202) contract, which does not allow any adjustment to the price on the basis of what the job costs the contractor. Contractors under this arrangement face maximum risk because if they misjudge the offered price or market conditions, they will lose money. Because the risk is placed on contractors, the FFP contract provides maximum incentive for them to control their costs and is the least burdensome, in terms of contract administration, for both parties. While the FFP contract is intended to provide incentives for the contractor to perform effectively, that is often not the case. Most contractors seek to perform effectively, but their primary goal is to make a profit, and in the absence of close monitoring by the Government, performance may suffer. Furthermore, the use of FFP contracts is feasible only when the Government can totally quantify a project in terms of design, specifications, execution, and quality and the Government can ensure that the terms of the contract are met. If those conditions cannot be assured, the contracting officer must consider the use of another contract type.

Other Fixed-Price Contracts. Within the fixed-price category, some contract types allow price adjustment under certain circumstances. The two conventional ones suitable for construction are fixed-price with economic price adjustment and fixed-price incentive contracts. Fixed-price with economic price adjustment (FAR 16.203) is used when material or labor prices are subject to wide fluctuations. The Government assumes some of the contractor's risk by agreeing to adjust the price on the basis of cost indexes or changes to established material or labor prices. Predetermined formulas and price ceilings are used to calculate these adjustments and apportion the risk. The fixed-price incentive contract (FAR 16.403) is used when, given the chance to share in the savings, the contractor is likely to be able to reduce performance costs substantially. A target cost, target profit, and price ceiling are specified in the contract, and the Government agrees to pay the cost and profit up to the price ceiling. A predetermined formula increases or decreases the contractor's profit depending on whether the final project cost is less than or greater than the

target. Incentives can also be based on delivery or completion dates rather than cost if those aspects are more important. In either case, the FAR requires a formal decision and documentation that use of an incentive is warranted.

Cost Reimbursable Contracts

Cost reimbursable contracts are those in which the Government agrees to pay the contractor's allowable costs plus a fee or profit. To use such a contract, the contracting officer must ensure that as a result of its use, the cost to the Government is likely to be less than that of any other contract type, or that use of another type is infeasible. Cost reimbursable contracts are used where costs cannot be reasonably predicted and the Government has to assume a majority of the risk in order to get contractors to submit reasonable offers or even to bid at all. Examples of such projects are research facilities and facilities whose designs have not been completely developed because of short leadtime or the absence of criteria. With such contracts, the contractor must be selected by negotiation and both the Government and the contractor must monitor costs closely. As a consequence, the administrative burden is increased significantly over fixed-price contracts.

Cost-Plus-Incentive-Fee (CPIF) Contracts. The CPIF contract (FAR 16.304) is a cost-reimbursement contract similar to the fixed-price incentive contract. It differs in that it imposes no fixed cost ceiling and the contractor's profit, called the target fee, is adjusted between minimum and maximum limits. As with the fixed-price incentive contract, the amount of fee, of course, depends on the contractor's success in holding costs at or below the target. In incentive contracts, the Government must be ready to assume the burden of tracking whatever is spelled out in the contract – costs, schedule, or both.

Cost-Plus-Award-Fee (CPAF) Contracts. With CPAF contracts (FAR 16.305), the Government pays the allowable costs of construction plus a fee. That fee has two components: a predetermined base fee (0 to 3 percent) and an additional fee to be unilaterally awarded by the Government in accordance with specified criteria. The objective of the award fee is to motivate the contractor in such areas as quality, timeliness, ingenuity, and cost-effectiveness. This additional fee is based on a subjective evaluation by the Government and is not subject to the *Disputes* clause of the contract. Unless authority to deviate is granted, the FAR restricts the sum of both fees to 10 percent of the estimated cost. The CPAF contract is used when the

Government is not only willing to pay the allowable costs but also seeks qualities that are not easily quantifiable, such as quality workmanship, good customer relations, and contractor cooperation. The CPAF contract imposes an additional administrative burden since a fee determination board may be needed [DFARS 16.404-2(b)(72)(ii)] and it should not be used if the administrative effort exceeds the expected benefits. DFARS 16.404-2(70) specifically encourages consideration of the use of an award fee in combination with other types of contracts when these nonquantifiable qualities are sought.

Cost-Plus-Fixed-Fee (CPFF) Contracts. The CPFF contract (FAR 16.306) is one under which the Government agrees to pay the contractor allowable costs plus a fixed fee that does not vary even if the cost varies. The maximum fee is 10 percent of the contract's estimated cost, but CPFF contracts shift much of the risk to the Government. Since contractors receive their fees regardless of costs, they have little incentive to control costs. The CPFF contract is used primarily in research and development when reasonably firm performance objectives and schedules cannot be determined. If a CPFF contract is to be awarded for construction in excess of \$25,000 in the United States, it must have the approval of the Assistant Secretary of Defense (Production and Logistics)[ASD(P&L)] (DFARS 36.272). The determination and findings must be signed by the agency head or designee.

LEGISLATIVE IMPACTS ON PROCUREMENT STRATEGIES

The FAR

The choice of a procurement method and contract type are affected by congressional legislation. A single Government-wide primary regulation controlling procurement – the FAR – was mandated by Congress in P.L. 93-400, 1974. Ten years later and after more than 5 years of effort to consolidate the Defense and Federal procurement regulations, the FAR became effective on 1 April 1984. Although much improved, the current FAR does not easily relate to construction contracting. References to construction are scattered and, therefore, not easily referenced, and the part dedicated to construction and architectural-engineering (A-E) contracting is brief and does not clearly distinguish between the two. Because construction is a relatively small part of total Federal contracting, the FAR wording lends itself more to contracting for equipment, supplies, and services than for construction. Moreover, it has been supplemented by the Defense Acquisition

Review Council, the Services, and the Corps of Engineers. All of these supplements with differing constraints creates confusion for a contracting officer deciding on a procurement strategy.

The Competition in Contracting Act

The Competition in Contracting Act of 1984 (CICA), was a major development in contracting, including contracting for construction. While it restricts contracting under other than competitive procedures, it also introduces a new concept of competition. Before CICA, statutory and regulatory preference for sealed bidding (previously called "formal advertising") was clear. Now, competitive negotiation is placed on an equal basis with sealed bidding, and the competition is not restricted to price alone.

Although price must always be one criterion in competitive negotiations, nonprice factors may also be used to select a construction contractor. As FAR 15.605(b) states:

(b) The evaluation factors that apply to an acquisition and the relative importance of those factors are within the broad discretion of agency acquisition officials. However, price or cost to the Government shall be included as an evaluation factor in every source selection. Other evaluation factors that may apply to a particular acquisition are cost realism, technical excellence, management capability, personnel qualifications, experience, past performance, schedule, and any other relevant factors.

Design/Build

The Congress, advocating innovation in construction, is another factor that affects construction procurement strategies. The 1984 Military Construction Appropriations Bill (HR 98-238) encouraged DoD to pursue nontraditional construction contracting methods, one of which is "turnkey" – more properly called one-step "design/build." 10 U.S.C. 2862 describes this procedure as follows:

(2) In this section, "one-step turn-key selection procedures" means procedures used for the selection of a contractor on the basis of price and other evaluation criteria to perform, in accordance with the provisions of a firm fixed-price contract, both the design and construction of a facility using performance specifications supplied by the Secretary concerned.

Legislation [PL 99-167, Title VIII, § 807(a)] has allowed each Service to choose up to three projects per year to be contracted for using this design/build provision. It is discussed further in Appendix A.

Construction Fund Appropriations

Procurement strategies are also affected by the way construction funds are appropriated. Authority for obligating MILCON funds by awarding a contract expires before the end of the second fiscal year after the appropriation; that for obligating operations and maintenance (O&M) funds expires at the end of the fiscal year in which they are appropriated. Any delay in the appropriations bill or in the design stage of a project reduces the time a contracting officer has to award the contract. As a result, when funding authority is about to expire, contracting officers tend to avoid use of those procurement strategies perceived to require long lead-times.

The Small Business Act

The Small Business Act, 15 U.S.C. 631, et seq., strongly influences construction acquisitions. The Act calls for a portion of the Government's contracts to be set aside for small businesses, and on those contracts, the contracting officer no longer has final authority for rejecting nonresponsible bidders. The Small Business Administration (SBA) can issue a contractor a Certificate of Competency (COC) that makes rejection almost impossible.

Field offices believe that challenging a nonresponsible low bidder on a small business set-aside is futile because the SBA invariably issues COCs and the contracting officer must accept the nonresponsible bidder. Statistics, however, show that in FY 1986, only 74 DoD construction contracts were referred to SBA. In 24 of those cases, the contractors did not request a COC, and the SBA issued COCs in only 10 of the remaining 50 cases. However, the perception persists, and because of it, the Services accept marginal small business contractors without a fight.

TRADITIONAL DoD CONSTRUCTION CONTRACTING

Almost all construction contracts within DoD are FFP contracts awarded through sealed bidding. Field organizations find sealed bidding to be relatively easy and thoroughly understood by contracting officers and industry alike. Selecting the contractor on the basis of the lowest price is seen as the "Tried and True Way." Many in the construction industry see other methods as potentially unfair, and contracting officers are aware of the potential for protests, disputes, and possible congressional complaints if they stray from the path of FFP, sealed-bid contracts. Moreover, each

Service has burdened the nontraditional contracting strategies with a maze of regulations and administrative requirements that contracting officers see as a major drain on their time and resources. Industry organizations such as the Associated General Contractors Association (AGCA) also complain that competitive negotiation on complex or detailed proposals drains contractors' resources and is reflected in higher prices. As a result, price remains the criterion for contractor selection even though the procurement, engineering, and construction communities believe that other factors are often more important when buying construction (see Appendix B).

One way to mitigate the risks in choosing a contractor solely on the basis of price is to prequalify those contractors allowed to bid on the project. In that way, nonqualified or incompetent contractors can be prevented from bidding and the Government has a better chance to select a quality contractor. Although permitted by the FAR, prequalification is rarely used. When researching prequalification procedures for the \$110 million hospital at Travis Air Force Base (AFB), for example, the Navy found only four previous prequalifications on record at NAVFAC. Contracting officers see prequalification as prohibitively time-consuming and burdensome and believe that attempts to disqualify contractors will not be supported by higher headquarters, especially if those attempts are likely to provoke a congressional inquiry. Although prequalification has worked well at some locations, such as Travis AFB, it does not guarantee success. For example, the Navy prequalified the contractors bidding on a Trident training facility and conducted a preaward survey; however, problems with contractor performance arose after construction started and the contract was terminated for cause.

Preaward surveys of the capabilities of a prospective contractor are performed before all contract awards to ensure that contracts are not awarded to contractors who cannot do the job (i.e., contractors who are not responsible). This survey is particularly necessary when prequalification is not used. However, contracting officers believe that the preaward survey looks primarily at the financial condition of a firm and its ability to post bid, performance, and payment bonds and as a result, is not an effective screening mechanism. The effectiveness of preaward surveys in determining the responsibility of contractors is addressed in Chapter 4.

CONSTRUCTION CONTRACTING IN THE PRIVATE SECTOR

Private sector construction firms should be a good source of innovative ideas for the Government since they acquire many of the same types of facilities and are free of Government regulations. In reality, however, private sector construction contracting and Government construction contracting have so little in common that any transfer of innovative ideas, when they exist, is ineffectual. More than half of the construction contracting in the private sector is done with FFP contracts, but the bidding method and control of contractors are vastly different. Major private corporations do not have to adhere to full-and-open competition. They frequently have a pool of contractors whom they know to be competent. When a corporation has a construction job, it simply chooses one of the contractors from that pool or invites bids from some of them. The bids are not opened publicly, and competitors usually do not know who submitted the low bid, what it was, or why the winner was chosen.

Consequently, private industry has far more leverage over contractors during the construction period. Contractors know that if they do a quality job and make a good impression, they stand a better chance for future work. This incentive is a powerful one that Government contracting officers cannot usually offer. For the same reason, contractors seldom make claims against a private company. With the Government, they have a ready-made, formalized claims procedure and can easily go over the contracting officer's head. By contrast, a Fortune 100 corporation stated that it is not concerned with contractor claims – it simply does not pay them. Contractors are unlikely to risk the expense of a court fight with a major corporation and further risk eliminating themselves from future consideration for work unless a significant amount of money is at stake.

In general, the private sector has the power to demand quality in facilities without having to deviate from its traditional contracting strategies; it has little need for innovation. While the private sector uses cost-reimbursement contracting when the sharing of risk is desirable and design/build contracting is gaining wider acceptance, the FFP contract, with or without sealed bidding, remains the most commonly used procurement strategy.

NONTRADITIONAL AND INNOVATIVE CONTRACTING WITHIN DoD

Despite DoD's almost exclusive use of sealed bidding and FFP contracts, some field organizations attempt to use less traditional contracting to improve contractor

selection and ensure quality construction. Methods used to do so are outlined briefly in the following subsections and are described in more detail in Appendix A. Although the approaches vary, they have one common theme: DoD can obtain quality facilities by selecting a contractor with a history of quality work and offering positive incentives to excel.

Fixed-Price-Award-Fee (FPAF) Contracts

Although the FAR does not specifically mention the FPAF as a standard contract type, its use is sanctioned in FAR 16.102(b), which allows a mix of contract types to promote the Government's interest. It combines the fixed-price part of an FFP contract with the award-fee part of a CPAF contract. Its purpose is to use an award fee with the fixed-price contract to foster the "quality, timeliness, ingenuity, and cost-effectiveness" the FAR attributes to the CPAF contract while avoiding the risks associated with cost-reimbursement contracting. Because the fixed-price contract is much more common, it is appropriate to make the award fee tool available for use with it as well as with cost-reimbursable contracts. In fact, the DFARS encourages contracting officers to use the award-fee feature with other types of contracts [DFARS 16.404-2(70)].

The Government benefits when an award fee, even a small one, can be used to enhance contractor performance enough so that the overall benefits exceed the award fee and the cost of its administration. Those benefits can be in the form of time (which is often money), quality of workmanship, ideas, or simply contractor cooperation. It has been successfully tried by the Navy and Air Force and has stirred interest in DoD field organizations.

Indefinite-Quantity Contracting

An indefinite-quantity contract, often referred to as a job-order contract (JOC), is an FFP contract for small to medium-sized maintenance, repair, and minor construction. It is competitively negotiated on the basis of such factors as experience, management, and capability as well as price. Both the Army and the Air Force are testing the concept [the Air Force calls it a simplified acquisition of base engineer resources (SABER)]. The contract is based on a detailed specification that can contain more than 25,000 prepriced construction tasks with no designated quantities. The price of a job is obtained by adding up the cost of each task in the appropriate quantities (adjusted, if necessary, with an overtime coefficient) and then

multiplying the total by a prenegotiated overhead and profit factor. Items not in the specification are negotiated separately. The Government estimates the cost of the job and then negotiates the scope of work and performance time with the contractor. As soon as agreement is reached, the Government issues an order against the contract, and the contractor begins work, avoiding the long procurement leadtimes of traditional contracting. If agreement cannot be reached, the Government is free to contract through normal methods. As in the private sector, the contractor is encouraged to do well to ensure continued use of the JOC instead of having to depend on the routine of awaiting IFBs to bid on future jobs. The initial results are promising and the idea is already being expanded.

Total Cost Evaluation

Total cost evaluation contracts are negotiated fixed-price contracts awarded on the basis of factors other than price. Such contracts are currently used by the Omaha District of the Corps of Engineers under the name of life-cycle-cost contracting. Although they do not involve life-cycle costing in the usual sense, they do allow the contracting officer to take into account the real cost to the Government for a contract and not merely the price offered by the contractor.

In the total cost evaluation process, bidders submit their prices along with several nonprice factors, the most significant of which is time for completion. Included in the bid price is an expressed overhead rate and an extended overhead rate (the overhead rate that will be charged for extending the period of performance in the event of change orders). The performance period (and other nonprice factors) is equated to a cost to the Government and added to the offered price, as are the contractor's proposed overhead rate and extended overhead rate; the sum of these amounts becomes the "evaluated price." The award is then made on the lowest evaluated price, which is not necessarily the lowest bid. The Omaha District has awarded two such contracts and has 15 more in process.

Short-Form RFP

Use of the short-form RFP also permits factors other than price to be considered in the selection process. Rather than being evaluated solely on their offered prices, contractors are rated on the basis of both price and other factors to help select a quality contractor. The short-form RFP is a form of competitive negotiation, but the proposals are limited to 10 or 20 pages to ensure simple and rapid evaluation. The

RFP requests one-page summaries of the contractor's experience, performance ratings, a quality-control plan, and the backgrounds of the quality-control inspectors. Proposals with more than the mandated number of pages are considered nonresponsive. The contracting officer at the installation level evaluates the offered price and the other factors under a weighted point system, and the contractor with the highest point score is awarded a contract. Although the technique is not currently being used for major facility acquisitions, the Air Force has published Air Force Regulation (AFR) 70-30, "Streamlined Source Selection Procedures," which allows a very similar method for installation contracting. Contracting officers expressed interest in having such a selection process available because it does not require extensive administrative effort. Appendix A presents a detailed discussion of the short-form RFP.

Design/Build Contracting (One-Step)

One-step design/build contracting consists of awarding a single FFP contract for the design and construction of a facility. It is the only innovative contracting process resulting from specific legislation. In general, it avoids the confusion, disagreements, and shortfalls that can occur when design and construction are performed by separate contractors. This differs from two-step design/build which is already permitted under the FAR. One-step design/build is discussed in detail in Appendix A.

Other Innovative Contracting

The FAR and DFARS give contracting officers much flexibility, but that flexibility is often unused. Some contracting officers, however, are willing to experiment with new ideas to solve recurring problems and raise the quality of facilities.

Two examples from the Omaha District of the Corps of Engineers illustrate what such experimentation can accomplish. One contract giving a new twist to value engineering was awarded. Bidders responding to the RFP were offered up to half of the expected savings from their value engineering ideas even if they were not awarded the contract. Valuable ideas were incorporated into the design regardless of who submitted them, and thus, the best money-saving ideas from the unsuccessful offerors were not lost. A second example is in the calculation of allowable weather delays. In two awards, weather delays were not calculated each month but rather

over the entire construction season. Since lost time was made up later during good weather, the basis for a potential claim for extended overhead was eliminated.

The contracting officers experimenting with these less traditional or innovative procurement strategies reportedly had to overcome inertia, old habits, and risk avoidance in their chain of command to have them accepted. Despite those impediments, they remained positive and felt confident that although the methods they were advocating would not work in all cases, they were beneficial for these specific projects and should be tried.

CHAPTER 4

THE NEED FOR CHANGE

A high percentage of DoD and Service Headquarters staffs believe that FFP sealed-bid contracts work well in all construction situations and that change is unnecessary. While not universally shared by contracting officers in field organizations, that belief has been a major factor inhibiting change. Sealed bids have been the mainstay of DoD facility acquisition because DoD and contractor personnel are familiar with the process and the risk of bid protests and other problems may be minimized when sealed bids are used. Consequently, that method has been the preferred choice even though it may not always be the best one. Under many facility acquisition scenarios, a different approach could result in a higher quality facility.

One of the major drawbacks in sealed bidding is the absence of an effective mechanism for screening contractors and eliminating those who are likely to produce poor-quality facilities. A contractor's past performance and the qualifications of job personnel are considered only when either or both are so bad that the contractor is determined to be nonresponsible.

Under the sealed bid procedure, two mechanisms are available to assess contractor responsibility: prequalification and preaward survey. Prequalifying potential bidders can reduce the likelihood of selecting a contractor who will produce significantly poor quality work; however, prequalification is rarely used since it imposes an enormous administrative burden. Thus, the only real check on bidders' qualifications is the preaward survey through which the contractors' past records of performance, construction capabilities, financial capabilities, and eligibility to receive the award under applicable laws and regulations are reviewed. A determination of responsibility in the preaward survey implies that the contractor is capable of providing quality work and meeting the terms of the contract. However, these surveys tend to be perfunctory; any contractor who can obtain bid, payment, and performance bonds is normally determined to be responsible, even one whose past performance is suspect. As a result, many sealed-bid awards go to contractors who have not produced quality facilities in the past. The Corps of Engineers has

undertaken an initiative to address this problem; however, it is too early to assess its effect.

Contracting officers throughout the Government construction community believe that sealed bidding leads to the selection of many contractors who have poor quality records; that belief has also been documented in a formal Service evaluation.¹ That situation occurs when contracting officers are not aware of unsatisfactory ratings because of inadequacies in the current system for tracking contractor performance evaluation or when they feel that the information they have is not sufficient to make a determination of nonresponsibility that will survive a protest. In either case, the sealed bid procedure without prequalification relies on the often unrealized hope that the low bidder will be a good contractor.

Even with a poor-quality contractor, the Government can acquire a high-quality facility if it is willing to increase its performance-monitoring effort substantially. The time savings realized through a sealed bid strategy can be eroded by the additional monitoring effort required during contract performance.

On the other hand, when a contractor who will produce quality facilities is selected through the sealed bidding process, the Government realizes a savings in administrative time. Thus, the sealed bidding process should be used if the contracting officer believes that the probability of selecting a quality contractor is high. However, when there is a strong likelihood that a poor-quality contractor will win the award, the contracting officer should consider another procurement strategy, particularly if the resources available for contract administration are limited.

Generally, DoD construction contracts do not include effective incentives; if any incentives are used, they are negative ones, and according to Service evaluations, even negative incentives are not used as frequently as they could be and when used, tend to be ineffective.² The general and special provisions of the typical construction contract provide for penalties if the contractor does not complete the project on time (liquidated damages), removal of contractor superintendents, withholding payment if the work is not completed satisfactorily (retainage), stop

¹Report of the Engineer Inspector General on Quality Assurance and Quality Control of Construction, 25 Feb 1986, Finding QA-AC-02

²Report of the Engineer Inspector General, op. cit., Finding QA-DL-02.

work orders, etc. DoD construction contracts seldom provide rewards for work well done or done in a timely fashion.

The current focus on penalties tends to create an adversarial relationship between the contracting officer and the contractor. In fact, it is normally in the best interest of the contractor to perform at the lowest permissible level of quality: that level below which the contractor will be debarred or the contract terminated or subjected to excessive retainage. At that level of performance, the contractor will maximize profit with little probability of negative consequences. Few unsatisfactory performance evaluations are given, and even those that are given have little influence on future awards. In a sealed bid environment, most contractors are permitted to bid, and in all but rare circumstances, they will be determined to be responsible.

Better methods are needed to motivate contractors to construct quality facilities. The USACE found that positive incentives can be effective in achieving quality facilities,³ and NAVFAC reached the same conclusion for service contracting and has extended the concept to construction contracts.⁴ The use of positive incentives on construction contracts appears to decrease the extent of Government administrative effort required to obtain a quality facility. Even though DoD has emphasized the contractor's responsibility for controlling the quality and has implemented that requirement through the contractor quality control (CQC) and DoD's quality assurance (QA) programs, the contractor must have a strong incentive to provide quality if CQC is to work. DoD's QA work force is not large enough to "catch" all contractors who do poor-quality work. If a contractor is not motivated to provide quality work, the consequence is most often a poor-quality facility. Positive incentives can provide that motivation.

The most common positive incentives used are monetary rewards based upon time and quality performance. Time incentives have been used to motivate a contractor to complete a project on or ahead of schedule. Such incentives are most effective and useful when the contractor can control the factors that affect the completion of the contract and when time is important to the client. Contracts with

³Ibid.

⁴"Effectiveness of Fixed Price Award Fee Contracts for Motivating Contractors," Naval Facility Engineering Command, Aug 1986.

time incentives normally use formulas or incentive schedules to set the monetary award. Time incentives are an effective way of focusing the contractor's attention on the schedule. They have been used by DoD contracting officers infrequently for a number of years and should be used more often.

Quality incentives are normally administered somewhat differently. Award fees for quality have been used in conjunction with cost-reimbursement contracts. However, more recently, they have been used in conjunction with fixed-price contracts. An award-fee contract gives a contracting officer a mechanism for influencing the quality of workmanship. Since it is impractical to specify in a document of reasonable length the level of quality in many areas of construction, specifications frequently refer to "standards of the trade," and defining quality in those circumstances is left to the QA inspector. However, in most cases, while DoD QA inspectors know good quality, they have no practical contractual means for obtaining it in the absence of specific contract language. Projects for which "soft" quality standards exist can benefit in particular from an award fee contract.

Contracting officers most frequently complain that award-fee contracts are difficult to administer. Much of that complaint is based on the historic use of award fees in conjunction with large cost-plus contracts where extensive audits are required. Moreover, most award-fee requirements associated with cost-reimbursement contracts have been imposed by the Services. By using an award fee in conjunction with a fixed-price contract, contracting officers can realize the benefits of fixed-price contracting and at the same time provide the contractor with an incentive to produce quality.

Sealed bidding with FFP contracts has been used successfully for years by DoD contracting officers when acquiring facilities. However, just as there are times when cost-reimbursement contracts are more effective for managing risks, we believe there are situations in which innovative contracts are more effective for managing quality. Contracting officers should have options other than sealed bidding with FFP contracts to cover those circumstances in which project, quality, and time constraints require procurement strategies differing from the norm. Providing these options can give contracting officers the capability to manage quality more effectively.

CHAPTER 5

BARRIERS TO CHANGE

Virtually all construction contracting in DoD is handled through sealed-bid procurements despite the frequent dissatisfaction with the results. The major reasons that contracting officers do not consider other methods of acquiring facilities are the rules, regulations, and perceptions that govern DoD facility acquisition.

Nothing in the FAR or DFARS specifically prohibits innovative construction contracting. Award fees, contracting by negotiation, use of selection factors other than price, two-step design/build, total cost evaluation, and indefinite quantity contracting have all been successful. Although entirely new contracting methods cannot be used except when approved as a deviation from the FAR [FAR 16.102(b)], much flexibility is possible. The Competition in Contracting Act (CICA) prohibits most sole-source procurement, but it also expands a contracting officer's options by placing competitive negotiation on a par with sealed bidding. Although less traditional or innovative contracting does not face many prohibitions, contracting officers perceive a significant number of inhibitions in deviating from standard methods.

The first example of those inhibitions is in the FAR itself. The contracting officer looking at the FAR to determine whether construction can be acquired by other than FFP contracts and sealed bidding gets the impression that it would be highly unusual. FAR 36.207(a) states, "Generally, firm-fixed-price contracts shall be used to acquire construction." The bias imposed by this single statement ensures that sealed bidding and FFP contracts will be used the majority of the time. This bias is reinforced in FAR 16.103(b):

A firm-fixed-price contract, which best utilizes the basic profit motive of business enterprise, shall be used when the risk involved is minimal or can be predicted with an acceptable degree of certainty. However, when a reasonable basis for firm pricing does not exist, other contract types should be considered, and negotiations should be directed toward selecting a contract type (or combination of types) that will appropriately tie profit to contractor performance.

Thus, to use other than an FFP contract, the contracting officer must establish that no reasonable basis for firm pricing exists. Furthermore, the FAR does not clearly indicate whether FPAF contracts are to be considered with other fixed-priced types; in the absence of specific guidance, a contracting officer is likely to assume that they are not and eliminate FPAF contracts from consideration.

The FAR appears to be biased in favor of sealed bidding. FAR 36.103(a) states, "Contracting officers shall acquire construction using sealed bid procedures if the conditions in 6.401(a) apply." FAR 6.401(a), in turn, says that contracting officers must use sealed bids if time permits, if they expect more than one bid, if they intend to award only on price and price-related factors, and if there is no need for discussions. Since an FPAF contract without discussions or award on anything but price could meet those criteria, the FAR appears to permit – even in some cases require – the use of sealed bids for FPAF contracts. However, both FAR 14.104 and 16.102 indicate that if sealed bidding is used, the contract must be FFP or fixed-price with economic adjustment. Because the FAR does not expressly describe an FPAF as a contract type, the contracting officer is left with inadequate guidance.

A contracting officer who wishes to use factors other than price to award the contract or wishes to conduct discussions must use competitive negotiations and must document the reasons why sealed bidding is not appropriate (FAR 6.401). The contracting officer may perceive this as an additional workload and must assume the risk of going on record against sealed bidding.

In summary, both the FAR and the DFARS seem to leave room for the use of FPAF contracting, either using sealed bids or competitive negotiation. However, because the FPAF contract is not specifically mentioned in the FAR, the contracting officer is likely to be discouraged from using it.

The Army FAR Supplement (AFARS), Navy Acquisition Regulation Supplement (NARS), and Air Force FAR Supplement (AFFARS) add little on construction contracting and the choice of contract type. On the other hand, Service regulations and requirements impose significant restrictions on the use of other than sealed bid acquisition. Those restrictions vary depending on the Service, with the Air Force being the most liberal and the Navy the most conservative. The Army and Navy have issued extensive instructions below the level of their FAR supplements.

as well. The Army has the Engineering FAR Supplement (EFARS) and the Navy has the P-68, NAVFAC Contracting Manual.

Both the EFARS and P-68 contain significant provisions against innovative or less traditional contracting. Until recently, EFARS 15.104 required Chief, U.S. Army Corps of Engineers (USACE), approval for negotiated contracting on all projects over \$300,000. Even the EFARS Acquisition Letter that eliminated that approval requirement (EAL 85-2, 11 October 1985) stated, "However, the preferred method of contracting for construction is sealed bids." This conflicts with Paragraph 3-101(b)(1)(b) of Engineering Regulation (ER) 1180-1-1 which still requires USACE approval for negotiated contracting projects over \$100,000. Policies such as these are strong biases against any type of change.

The Navy is even more restrictive. NAVFAC's P-68 states that "only firm-fixed-price contracts will be used by Engineering Field Divisions (EFDs) without prior approval of NAVFACENCOM" (P-68, 2-201e). This restrictiveness is reinforced by the NAVFAC policy of awarding contracts (whether bid or negotiated) on a fixed-price basis. The use of a cost-reimbursement contract is permitted only when the contracting officer can clearly establish that the nature of the work or other circumstances make a firm-fixed-price arrangement impractical. Other types of contracts are addressed in P-68; the FPAF, for example, is called "fixed-price with quality performance incentive." However, its use is restricted to janitorial contracts or contracts where, historically, satisfactory performance has been difficult to obtain (P-68, 9-106.4). The use of negotiated contracting in place of sealed bidding for NAVFAC contracts is also addressed and, in general, is not endorsed. P-68, which still reflects pre-CICA policy, states that:

Contracts exceeding \$25,000 shall be formally advertised whenever such method is feasible or practical under existing conditions and circumstances, even though it might be possible to justify negotiation under existing statutory authority.

and that:

Approval will not be granted if complete plans and specifications are available and there is reason to believe that the usual procedures would produce timely responsive bids. Accordingly, Competitive Negotiation is seldom authorized for an orthodox construction project. Competitive Negotiation is not used to hand-pick proposers, or eliminate undesirable ones.

Those statements clearly direct the contracting officer to use sealed bidding and fixed-price contracts unless the circumstances are extraordinary. While neither the Army nor the Navy prohibits other contracting types for construction, the approval levels, justification, time, and documentation required make their use unlikely.

Beyond these regulations, a series of informal restrictions add to the contracting officer's reluctance to depart from sealed bidding. The "corporate culture" at all levels is quite comfortable with sealed bidding. As indicated in Chapter 3, both the contracting personnel and the industry are used to it and see it as the "Tried and True Way" of contracting for construction. Contracting officers believe it keeps protests to a minimum, does not require explanation, and is the preferred method for construction. Many also believe that formal contract training does not emphasize the use of alternative and innovative procurement strategies and thus helps to perpetuate traditional techniques. The construction industry's professional societies also advocate sealed-bid, fixed-price contracting.

Another barrier to the use of less traditional or innovative contracting is the personnel resources available in the contracting community. Under current Service regulations, all less traditional or innovative contracting requires more initial time and effort and consequently is less likely to be considered when personnel resources are strained. (One contracting community comment was, "Please, don't give us anything that requires another review board!")

Fear of General Accounting Office (GAO) disapproval is also a factor that inhibits changes in construction contracting. The GAO has voiced disapproval of DoD's use of "nonpreferred" practices for base support contracts.¹ The nonpreferred practices cited are contract types other than firm-fixed-price and award criteria that do not give price more than 50 percent of the weight in the selection process. Although these base support contracts are mainly for services other than facility maintenance, repair, and construction, contracting officers believe that disapproval of nonpreferred practices for construction contracting cannot be far behind. Thus, although the GAO does not prohibit the use of less traditional techniques, it certainly inhibits it.

¹GA Report GAO/NSIAD 87-7, "Procurement: Opportunities to Use More Preferred Practices for Base Support Contracts," February 1987.

Finally, there is an element of risk. Use of less traditional or innovative methods is seen to impose a higher risk to the contracting officer, especially if the award goes to an offeror who did not submit the lowest price. Construction may be delayed while legal problems are resolved, and the contracting officer faces the personal risk of having to defend the decision if a formal protest arises. It is far easier to avoid these real or perceived risks by using the standard contractor selection methods and contract types.

APPENDIX A

LESS TRADITIONAL OR INNOVATIVE PROCUREMENT STRATEGIES FOR CONSTRUCTION

The use of less traditional or innovative procurement strategies varies greatly among Services, both in terms of the types of strategies used and the number of projects in which they are used. This appendix describes less traditional and innovative techniques and cites the locations at which they have been used. A description of traditional construction procurement strategies is presented in Table A-1 for comparison.

INDEFINITE-QUANTITY CONTRACTS

Several Army and Air Force installations are testing the use of indefinite-quantity contracts for small to medium-sized maintenance and repair contracts and minor construction contracts. [The Army refers to these contracts as job order contracts (JOCs), while the Air Force calls them simplified acquisition of base engineer resources (SABER).] The Air Force has previously used a similar concept with the British Property Services Agency in the United Kingdom. For such contracts, the contracting officer scopes the work using detailed, pre-priced specifications, and then offers it to the JOC/SABER contractor. Some negotiation is conducted to determine whether overtime coefficients are to be used to meet the Government's schedule and to price items not in the specification, but the process is far quicker than that with the usual contracting methods. Moreover, the Government does not have to award to the JOC/SABER contractor if it feels that normal procurement will provide more satisfactory results. In a legal opinion, B-222337, 22 July 1986, the General Accounting Office (GAO) supported the legality of all aspects of the Army's JOC, including the factors other than price that were used to select the contractors. The way seems clear to put the concept into general use if it is successful.

Initial reports are that the concept is working. For example, at one Air Force Base (AFB), contract awards are made within 25 days, much shorter than the normal award time. In addition to the short leadtime, with this type of contract the

TABLE A-1

TRADITIONAL PROCUREMENT STRATEGIES FOR CONSTRUCTION

Contracting Type	Reference	Description	Elements	Application	Limitations
Fixed Price (FP)	FAR 16.201	Price fixed subject to any adjustment on the basis of contract cost experience. Price maximum for the contract. Contract has greater incentive to control costs. Minimum administrative burden on parties.	Price	When a reasonable basis for firm pricing exists.	Depends entirely on Government ability to quantify and specify all aspects of the construction desired and its ability to use negative incentives to ensure that the contractor adheres to the specifications. Encourages contractor to purchase goods for cheap, rather than to manage profit.
Fixed Price with Economic Price Adjustment (FPA)	FAR 16.203	Price paid by the Government may be revised upward or downward if certain contingencies occur. Provides for price adjustment to protect parties against significant economic fluctuation or changes in contract established price. EPA provisions can be based on established (published) prices, actual costs, or cost index. Adjustments based on established prices restricted to industry wide contingencies. Adjustment based on labor or material costs limited to contingencies beyond contractor's control. Increased contractor risk and responsibility.	Price EPA Clause	When contingencies resulting from unstable market or labor conditions can be identified and covered by a separate price adjustment clause.	Same as FP.
Fixed Price Incentive (FPI)	FAR 16.403	Firm Target. Government pays price that is sum of final negotiated cost and final profit. Final profit determined by comparing final negotiated cost to target cost and adjusting target profit in accordance with formula (share ratio). Final price cannot exceed ceiling price. Negative targets. At predetermined contract final point, firm target cost is negotiated and firm target profit is determined in accordance with adjustment formula. Then, when an FP or FPA can be negotiated. Lowest contract for cost plus incentive for fixed price family of contracts.	Firm target Target cost Target profit Ceiling price Share ratio formula Negative targets Initial target cost Final target profit Ceiling price Target profit adjustment formula	Where assumption of a degree of cost responsibility by contractors will provide incentive for effective cost control. Can combine with incentives on performance and schedule.	Adequate cost or pricing data must be available to establish targets. Sole purpose cannot be to shift cost responsibility to Government. Requires simultaneous agreement on all elements of pricing structure. Contractor must base award cost accounting system. Government assumes a larger contract monitoring role. Appropriate only for competitive proposals or other than competitive procedures.
Cost Plus Incentive Fee (CPPI)	FAR 16.304	Government pays allowable cost and incentive fee. Incentive fee determined by comparing actual cost to target cost and adjusting fee per fee in accordance with fee adjustment formula (share ratio). Fee adjustment is established at the outset within minimum and maximum limits. Performance incentives can be incorporated in award, award, and Government performance objectives. Contract for cost and cost plus incentive fee is substantially reduced from those of the fixed price family of contracts.	Target cost Target fee Share ratio formula Minimum fee Maximum fee	Development and test where a profit incentive is likely to provide motivation for more effective management.	Fee limits same as FPI. Contractor must base award cost accounting system. Government assumes a large contract monitoring role. Needs a determination and findings before award. Appropriate only for competitive proposals or other than competitive procedures.
Cost Plus Award Fee (CPAF)	FAR 16.305	Government pays allowable cost, base fee, and award fee. Contractor pays base fee which is fixed for performance and all or part of an award fee based on subjective evaluation by Government of contractor's performance. Amount of the award fee is initially determined by the Government and is not subject to disputes. Clause Evaluation of performance and award fee is part of payment. Flow made at stated intervals. Contract for cost plus award fee is substantially reduced from those of the fixed price family of contracts.	Estimated cost Base fee Award fee	Where subjective evaluation is likely to encourage contractor's motivation for excellence in such areas as quality, timeliness, technical ingenuity and cost effective management. Where final performance objectives cannot be established in advance to measure a hard performance award fee may be used in conjunction with other types of contracts.	Base fee shall not exceed 1% of estimated cost. Maximum fee limits same as FPI. Government assumes larger administrative burden for award fee determination. The contractor's award fee performance period and related benefits must be sufficient to warrant the additional workload. Other limitations from FPI apply.
Cost Plus Fixed Fee (CPFF)	FAR 16.406	Government pays allowable cost and fixed fee. Fixed fee does not vary with actual costs. Fixed fee may be adjusted to reflect performance. Minimum incentive fee. CPFF is used for research and development. Requires specification of effort and a fixed period of time. Increased contractor risk and responsibility.	Estimated cost Fixed fee	Research and development or study. Development and test where CPPI not practical.	Fees shall not exceed 15% of estimated cost for R&D or 10% of estimated cost for normal construction contracts. Price of a contract shall not exceed 6% of estimated cost of the public work of utility project. 451 (FAR) approval required on US A contract value over \$75,000. Determination on award findings must be approved by a study board or developer. Other limitations of CPPI apply.

Government can offer future jobs as an incentive for good work, much as the private sector does. Additionally, JOC/SABER contracts are not awarded on the basis of price alone; the contractor's experience, management ability, and subcontractor support are also considered. Considering these additional factors increases the probability of selecting a contractor who will produce quality work in a timely manner. If the final results from all test sites are as successful as the initial reports indicate, the use of indefinite-quantity contracts for maintenance and minor construction should increase significantly.

FIXED-PRICE-AWARD-FEE (FPAF) CONTRACTS

In certain cases, it may be desirable to offer a positive incentive to motivate a contractor for performance that cannot be objectively measured under customary forms of contracts. The FPAF contract, which combines the award-fee feature of the cost-plus-award-fee (CPAF) contract with the fixed-price feature of a firm-fixed-price (FFP) contract, is a means to achieve this objective. That approach is encouraged in Defense Federal Acquisition Regulation Supplement (DFARS) 16.404-2(70). Table A-2 presents examples of construction projects for which FPAF contracts have been used.

Some factors in a construction contract cannot be fully quantified. Quality workmanship, customer convenience, and contractor cooperation are all aspects of performance that are hard to define but invaluable to a contracting officer. An award fee encourages performance in those areas. The benefits expected from an award-fee approach include more positive working relationships with the contractor and less time spent on nuisance claims, unsatisfactory ratings, and the other negative controls normally used.

Contracting officers are reluctant to use FPAF contracts. Some believe that construction projects can be fully quantified and that an award fee rewards the contractor twice for the same work. Some see the positive contractor relationship degenerating quickly the first time a maximum fee is not awarded. By far the biggest concern, however, is the time and effort required to get the contract awarded in comparison with sealed bid contracts. An FPAF contract involves an evaluation of competitive proposals and possibly negotiations with those companies found to be in the competitive range. In addition, an Award Fee Board must be appointed and convened, and that is seen to require even more time and effort. In the words of

TABLE A-2

EXAMPLES OF FPAF CONSTRUCTION CONTRACTS

Location	Project	Contract amount (\$000)	Max. award fee (\$000)	Award fee criteria
Kings Bay Naval Submarine Base, GA	Controlled industrial facility	6,000	200	Accuracy of submittals Quality control (QC) Program Accuracy of daily QC reports Contract compliance and quality of work
McClellan AFB, CA	Replace heat and A/C units in family housing	2,300	40	Quality of work 40% Timeliness 40% Responsiveness 20%
McClellan AFB, CA	Renovate Officers' Club	730	15	Quality of work 40% Timeliness 40% Responsiveness 20%

DFARS 16.404-2(70), "Further, the award fee provision shall not be used in conjunction with other types and kinds of contracts when the administrative effort or costs for evaluation exceed the benefits to be derived from the use of this arrangement." The approval levels and restrictions that the Services place on alternative contracting methods make the administrative effort extremely imposing, and thus, the benefits have to be enormous to justify use of the FPAF. Effective use of the FPAF contract requires removal of these restrictions. Although FPAF contracts have not been used often enough to draw definitive conclusions, those who have used them believe that the benefits derived justify any additional effort.

At McClellan AFB, two phases of a housing project were completed ahead of schedule by 29 days and 350 days, and occupant inconvenience was kept to a minimum. Ninety-seven percent of the available fee was awarded. At the same base, an officers' club was renovated, and 98 percent of the available fee was awarded; during the construction, the contractor incorporated five contract changes worth \$104,000 with no increase in performance time.

At Kings Bay, the results to date are also good; work there has uncovered an interesting facet of FPAF contracts. The \$6 million project has an award fee of

\$200,000, and both are but small parts of the contractor's — Bechtel Corporation's — business. The subjective evaluation of the award fee, however, has aroused corporate pride, and the corporate headquarters requires weekly updates on this project. Such attention is often invaluable to a contracting officer. Whether this level of interest will occur in a substantial number of cases remains to be seen. However, at Kings Bay, it is currently providing the contracting officer with significant leverage at relatively low cost.

The award fee for an FPAF contract is significantly different from award fees used with cost-type contracts. Unlike the fee in CPAF, it has no base amount (DFARS 16.404-2) and all of the fee may be awarded or withheld. Award of the fee is not subject to the *Disputes* clause (FAR 16.404); the award is "determined by the Government's judgmental evaluation of the contractor's performance" and is based on criteria important to that particular project. Examples of criteria wording are given in DFARS 16.404-2(70). Those criteria may be changed over the life of the contract, as long as the contractor is given sufficient notification, and, similarly, the maximum available fee for each award period does not have to be constant as long as it is identified in the contract. For example, a contracting officer may wish to offer a larger award fee in the last evaluation period to encourage speedy response to the final list of deficiencies. It is best to award the fee periodically rather than in one payment at the end of the contract. This incremental payment will provide feedback to the contractor and give more leverage to the contracting officer. The contract, however, must specify whether unearned portions of the fee are lost to the contractor or whether they can be applied to future periods for exceptional performance.

The maximum fee allowed for a routine project is 10 percent of the contract's estimated cost excluding the award fee [FAR 15.903(d)(1)(iii)]. Although that limit is listed under the CPAF section of the FAR, the FPAF incorporates the award-fee portion of CPAF in order to be a legal combination of contract types as authorized by FAR 16.102(b). The fee does not have to be large to be effective. Its effectiveness lies in the fact that it is pure profit to a contractor.

The FAR is silent on how the Government should evaluate the contractor's performance and decide how much of the fee to award. The DFARS merely states that, "An Award Review Board shall be appointed at each appropriate installation or activity. Procedures shall be established for the conduct of the evaluation." Each Service, however, has imposed cumbersome and time-consuming procedures for the

evaluation. Generally, a three-tiered award determination system is established and it consists of performance evaluation monitors (PEMs), the performance evaluation board (PEB), and a fee determination official (FDO). The PEMs are usually the contract inspectors, and they evaluate each criterion, using a point system, in a report to the PEB. The PEB looks at the ratings and recommends to the FDO the amount of the fee to be awarded. The FDO makes the final determination. In one Service, the chairman of the PEB must be a senior officer (full colonel or higher) and the FDO is located at higher headquarters. Such burdensome requirements give reality to the worst fears of contracting officers; they make the FPAF time-consuming and difficult to manage and remove the control over the fee award from the contracting officer. Under the Services' self-imposed regulations, benefits of an FPAF contract can rarely justify the extra administrative burden. In fact, impartiality could still be maintained with a three-person PEB chaired by a member of the contracting officer's staff empowered to award the fee without an FDO.

Funding the award fee is another important consideration. It has to be part of the programmed amount and should be shown as a separate line item on the DD Form 1391. This takes a strong belief at all levels of the approval process that award fees are worthwhile, especially if they become more common. Various levels will be tempted to eliminate all award fees and use the money saved to fund one more operation and maintenance (O&M) project at the Major Command level or one more military construction (MILCON) project at the Service or DoD level. All levels must agree that the cost of award fees is a small investment compared with the savings resulting from increased quality, reduced performance times, greater contractor cooperation, and reduced disruption to the mission.

The number of FPAF contracts is unlikely to increase rapidly because of the perception that FPAF is a manpower-intensive procurement strategy. Contracting officers would be far more inclined to try FPAF contracts if they could be used with sealed bidding, which is seen as relatively straightforward. A strong case can be made that FPAF contracts are essentially FFP contracts, and if that is the case, then sealed bidding can be used for FPAF because the type meets the requirements of FAR 14.104 and 16.102(a), which allow only FFP or fixed-price with economic price adjustment contracts in sealed bidding. The definition of an FFP contract is contained in FAR 16.202-1, which states, "A firm-fixed-price contract provides for a

price that is not subject to any adjustment on the basis of the contractor's cost experience in performing the contract." That definition fits the FPAF since the amount of the fee has nothing to do with the contractor's cost experience. Moreover, FPAF satisfies the elements of sealed bidding, including FAR 14.101(e), which states that award will go to the responsible bidder considering only price and the price-related factors included in the invitations for bids (IFB). In other words, FPAF is suitable for sealed bidding for the same reason fixed-price with economic price adjustment is since all are bidding on the same basis – the fixed price. The award fee does not affect the choice of contractor although the intent to award an FPAF contract would be stated in the IFB.

An argument may be made that the FAR actually requires sealed bidding for simple FPAF contracts. If an award is to be based only on price and negotiations are not necessary, then, as directed by FAR 6.401(a), sealed bidding must be used. The mere addition of an award fee does not exempt a contracting officer from the provisions of this requirement. An FPAF sealed-bid contract was awarded by the Navy at Whiting Field, Fla., but only after the Defense Acquisition Regulatory (DAR) Council approved a deviation from FAR 14.104. This deviation appears to be redundant, however, and the DAR Council could be asked to rule on this issue. If it concurs with this definition, clarification in the FAR should follow. Allowing FPAF contracts under sealed bidding would increase their use markedly.

For the most part, FPAF contracts are considered only for large, long-term, or special projects. However, if contractors selected under FFP sealed bidding are producing quality work with minimum Government intervention, the potential benefit of FPAF contracts is not worth the added cost of an award fee. However, if significant Government oversight and help is needed to get contractors to produce minimally acceptable work, FPAF contracts should be useful as an alternative. However, minimally acceptable work should not be good enough; quality should always be important, and if it is, a subjective incentive such as an award fee may be appropriate in many cases. Appendix C presents a sample of the information required in an IFB or request for proposals (RFP) for an FPAF contract.

TOTAL COST EVALUATION

The Omaha District of the USACE describes its method of construction contracting as "a complete fixed-price contract incorporating contractor bid, price

time, and mark-ups which yields optimum cost and time.” It requires bidders to include several nonprice factors in their proposals, and the Government then equates those factors to cost before selecting a contractor. The total of these nonprice-factor costs and the offered price yields an “evaluated price” for each proposal, and the award goes to the lowest such price. Table A-3 shows an example and Table A-4 lists some projects to which it has been applied.

TABLE A-3
TOTAL COST EVALUATION

Bid form	Example
<ul style="list-style-type: none"> ● Contract price - Performance period, days - Overhead rate (OH) - Extended overhead (EOH) rate ● Total least cost evaluation factors - Price x days x 0.0975/365 - Days x liquidated damages - Price x 5% x OH rate - Days x 10% x EOH ● Total cost evaluation price 	<p>\$2.0M</p> <p>300 days</p> <p>15%</p> <p>\$1,000/day</p> <p>0.160M</p> <p>0.165</p> <p>0.015</p> <p>0.030</p> <p>\$2.370M</p>

Source: Omaha District, USACE.

One factor included in the proposal must be the contractor’s proposed performance period. It is easily converted to a cost, as shown in Table A-3. An advantage to the total cost evaluation procedure is that the contractor submits realistic schedules to the Government and many of the usual time-and-cost disputes are eliminated. Inclusion of the contractor’s markups for overhead and extended overhead in the selection process has some distinct advantages, the most important of which is that the Government obtains “competitive” overhead rates that can be applied to change orders, alleviating the need to negotiate those rates later in a noncompetitive environment. While the lowest evaluated price may not be the lowest bid price, it should provide the lowest total cost to the Government over the life of the contract. Thus far, Omaha District reports that it does not need additional manpower to administer these types of contracts and the leadtime for contract award has not increased. Initial results look promising, with 2 of 15 contracts awarded with no protests to date.

TABLE A-4

EXAMPLES OF TOTAL COST EVALUATION PROJECTS

Project	Location
Combat Arms Training	F. E. Warren AFB
Intermediate Maintenance Facility	Grand Forks AFB
Secondary Fire Station	Grand Forks AFB
Combat Arms Training	Grand Forks AFB
Combat Arms Training	Ellsworth AFB
Control Tower	Ellsworth AFB
Conforming Storage	Ellsworth AFB
Combat Arms Training	K. I. Sawyer AFB
Alter Satellite Communication Ground Terminal	Cavalier AFS

Note: These projects are managed by Omaha District, USACE.

SHORT-FORM RFP

The short-form RFP is an instrument used to solicit bids from contractors with a history of producing quality work and, at the same time, to avoid the prohibitive administrative burden imposed on the Government by the longer form RFP. The short-form RFP restricts proposals to 10 to 20 pages, consisting of one-page summaries of the contractor's experience, past performance ratings, quality-control plan, qualifications of the quality-control staff, and any other factor the contracting officer believes will help identify quality contractors. As shown in Table A-5, construction contracts awarded on factors other than price are not unusual; the procedures, however, are cumbersome and time-consuming, and thus, contracting officers see RFPs as effective only under exceptional circumstances and for the larger projects. The time required for negotiated procurements using RFPs is estimated to exceed that for sealed bids by a factor of four. The objective of a short-form RFP is to require only marginally more administration time than a sealed-bid selection.

TABLE A-5

EXAMPLES OF NEGOTIATED CONTRACTS USING FACTORS OTHER THAN PRICE

Location	Project	Contract amount (\$000)	Proposed evaluation factors
Ft. Carson, CO	Auto Craft Center	\$2,866	Functional & aesthetic design 40% Total cost 35% Total time of performance 15% Past performance 10%
Norfolk Naval Shipyard, VA	Utilities Improvements	\$12,300	Organization strength Equipment capability Financial capability Construction experience Contract management Management personnel Government work experience Operation plan Suggested fees on CPAF Price
Kings Bay Naval Submarine Base, GA	Controlled Industrial Facility	\$6,000	Price Management plan & capability

When factors other than price are considered, the lowest bidder need not be selected. However, FAR 9.103(c) states:

The award of a contract to a supplier based on lowest evaluated price alone can be false economy if there is subsequent default, late deliveries, or other unsatisfactory performance resulting in additional contractual or administrative costs. While it is important that Government purchases be made at the lowest price, this does not require an award to a supplier solely because that supplier submits the lowest offer.

The theory is that the higher bid is often worth the cost because quality, timeliness, lower administrative burden, and the absence of nuisance claims save far more in the long term. This is also true if the Government has to help an incompetent contractor through a contract. If a Corps of Engineers District, a Navy Engineering Field Division (EFD), or an Air Force installation has a project where factors other than price are important, it should consider a method of choosing contractors that permits consideration of these factors.

Contracting officers' objections to negotiated procurements are based on the additional workload they require. However, neither the FAR nor the DFARS mandates the cumbersome procedures. Formal source selection using an evaluation board, for instance, is not always necessary. FAR 15.612(a) says, "This approach [establishment of an evaluation board] is generally used in high-dollar value acquisitions and may be used in other acquisitions as prescribed in agency regulations." On the subject of proposal evaluations, DFARS 15.608(b) states, "Unless otherwise specified in agency procedures, the contracting officer shall make the written determination." The purpose of the short-form RFP is to make the award almost as simple as sealed bidding for a project whose technical aspects do not require discussion and whose price does not require negotiation. The procurement office scores each of the proposal factors, including price, against a predetermined rating sheet and selects the contractor with the highest score, provided that contractor meets the usual responsibility requirements.

A possible problem with this approach is that the FAR may not routinely permit negotiated contracts to be awarded without some sort of discussion with the contractors. FAR 15.610 states that the executive agency may award a contract without discussions with the offerors when:

... it can be clearly demonstrated from the existence of full and open competition or accurate prior cost experience ... that the acceptance of an initial proposal without discussions would result in the lowest overall cost to the Government....

If the short-form RFP is to be attractive to contracting officers, it will have to avoid time-consuming price negotiations with the offerors. The intent of the FAR appears to be to ensure that the Government fully pursues the price issue when using competitive negotiation. With the short-form RFP, however, price is not the only factor considered. Ironically, if the short-form RFP without discussions is not permitted, sealed bidding will probably be used and there will still be no negotiations.

Another potential problem is that GAO may question the approach on the grounds that too much emphasis is placed on factors other than price. GAO prefers that price be at least 50 percent of the weighting in contract selection for base support contracts¹ and may well feel the same way for construction contracts. On

¹GAO Report GAO/NSIAD-87-7, "Procurement: Opportunities to Use More Preferred Practices for Base Support Contracts," February 1987.

the other hand, the courts have held that, if price is as much as 30 percent of the weighting, it constitutes a significant factor. Despite these potential problems, the short-form RFP can be a valuable instrument since it gives the contracting officer the ability to consider the quality record of contractors.

DESIGN/BUILD CONTRACTING

One-step design/build, called "one-step turn-key selection procedure" in its authorizing legislation, is a single, negotiated, FFP contract for both the design and construction of a project. This concept has been used for years in military family housing and commissary construction, and it is currently being tested for general MILCON construction under P.L. 99-167, Title VIII, 3 December 1985, which authorizes each Service to use it up to three times a year until 1 October 1990.

Design/build contracting has been used prior to the legislation under the two-step sealed bidding process (FAR 14.5). The first step is the design and the second is the construction, and one contractor does both. The physical fitness center at Fort Benjamin Harrison, the fire station at Fort Stewart, and the battalion headquarters and classroom at Fort Drum were all constructed under design/build contracting. Under two-step sealed bidding, only price and price-related factors can be considered in the second step; other factors can be used, however, if competitive negotiation is chosen instead.

Competitive negotiation, using factors other than price, is already being done in the examples shown in Table A-5. The Competition in Contracting Act (CICA) permitted this change in 1984, and the GAO has supported its use in construction in such opinions as B-222337. That opinion supported the use of factors other than price when it was challenged for indefinite-quantity contracting. The only remaining question, then, is whether the same contractor can be used to design and construct. FAR 36.209 states:

No contract for the construction of a project shall be awarded to the firm that designed the project or its subsidiaries or affiliates, except with the approval of the head of the agency or authorized representative.

It has been permitted, then, as long as the Service secretary approved it. Furthermore, a distinction should be made between awarding a construction contract to a firm that has previously furnished the design for the project and

awarding one package contract for both design and construction. However, whatever the rationale, congressional legislation now effectively limits one-step design/build contracting to three per year per Service unless the more cumbersome two-step procedure is to be used.

Proponents say that design/build contracting is faster and cheaper than conventional contracting, and the Construction Engineering Research Laboratory (CERL) bears this out.² It evaluated three completed design/build projects and concluded that costs were an estimated 28 to 32 percent lower than they would have been under conventional procurement; additionally, construction in two of the three projects was completed in 50 to 75 percent of the usual time. These savings were attributed to the design/build aspect of the contract, and furthermore, design and construction quality was described as "good" to "outstanding" in each case. The private sector agrees with the CERL assessment, and an April 1987 article explained some of the cost savings as follows:

Under the conventional delivery process, the architectural fee will be 5% to 6% of the construction cost and the contractor's fee will range from 5% to 10%, bringing the total to at least 10% but more likely 12% or 15%.

Under design/build, . . . the maximum combined fee probably will be 10%. Another reason for this lower rate is that such firms may be able to reduce liability insurance costs by consolidating their design and construction-related coverages.³

Perhaps a bigger advantage to design/build contracting is that the Government is able to hold one contractor responsible for conflicts between project design and construction. Too often, in conventional construction contracting, the Government finds itself in the middle of disputes between the designer and the construction contractor. The Government may devote considerable time acting as referee when each side blames the other for problems in the construction phase. This situation is avoided when one company does both design and construction.

Design/build contracting also gives the Government better control over budget estimates. In conventional construction contracting, the bids on the architect's design may exceed the programmed amount, causing delays and additional expense

²CERL Technical Report P-85/05, *Industrialized Systems: Two-Step Procurement Pilot Projects*, January 1985.

³"Design/Build: Single-Source Option Against Wider Acceptance," *Building Design & Construction*, April 1987.

for project redesign. In design/build contracting, the budget is determined at the outset, and the contractor assumes the risk.

Among the Services, design/build contracting has received mixed reviews. The Air Force is a strong advocate of the concept, but the other Services express a diversity of opinion. Some fear that industry is not organized for it and that smaller but capable contractors are excluded. Only two contractors responded with design/build proposals for a warehouse at Port Hueneme, Calif., for example. Others say that the industry is simply creating temporary syndicates that meet the single-contractor criteria but that, in reality, do not work as a single contractor. They believe the Government must still act as referee between the parties or the project will be delayed by the syndicate's internal problems. Several Service organizations said that design/build contracting should be used only for a narrow range of projects although opinion differed as to what projects are likely candidates. That opinion conflicts with those of the private sector, which is expanding the range of design/build construction. One opinion, however, was virtually unanimous: the three-per-year limit on one-step design/build contracting should be removed and the concept should be available to the contracting officer to use whenever it is appropriate.

APPENDIX B

IDENTIFYING FACTORS IMPORTANT FOR EVALUATING FACILITY QUALITY AND FOR SELECTING THE BEST CONTRACTOR

Defining a quality facility involves an examination of both objective and subjective criteria. Objective criteria are actions or results that can be observed and compared to other observations in a structured way. Examples include meeting a schedule, comprehensiveness of a quality-control plan, and contractor financial resources. Although objective criteria can be evaluated in a structured manner, a certain amount of subjectivity is involved in the evaluation. Subjective criteria, on the other hand, can also be observed, but their comparison with other observations is much less structured. Examples of subjective criteria include the level of workmanship exhibited and the responsiveness of a contractor to changes. The fact that criteria must be evaluated subjectively does not necessarily mean the evaluation is imprecise. In fact, a subjective evaluation by an experienced professional is often more effective in providing a valid assessment than an objective evaluation.

The construction community, including users, generally agree on the factors that are important when evaluating the quality of a construction project and the factors that are important for selecting the best contractor. The agreed-upon factors are listed in Tables B-1 and B-2. Difficulties arise, however, in determining the relative importance of each factor.

To determine the relative importance of the factors in Tables B-1 and B-2, we used a method of pair-wise comparisons through a heuristic decision-making process. Expert Choice™ is a software package that uses a structured technique for establishing a rank ordering of variables according to importance. We queried DoD facility construction, procurement, construction, and engineering experts from the Air Force, Army, and Navy to determine which factors they felt to be important on the basis of their judgment and experience.

The intent of the ranking was to establish a sample weighting that could be used as a starting point for developing evaluation and selection plans. These

TABLE B-1

QUALITY FACTORS IN A CONSTRUCTION PROJECT

- Contractor meets the schedule
- Contract is easy to administer
- Workmanship is high
- Quality-control procedures are followed
- Contractor meets all specifications
- Contractor responds quickly and satisfactorily to changes

TABLE B-2

FACTORS FOR SELECTING THE BEST CONTRACTOR

- Good performance record
- Low offered price
- Adequate financial resources
- Effective quality-control plan
- Other satisfactory resources
- Experienced quality-control personnel

weightings are to be viewed only as indicators of reasonable starting points that can be adjusted to reflect the needs of each contracting officer. The results of the rank ordering displayed some variance, but were statistically significant at the 95-percent level. With a few notable exceptions, engineering, procurement, and construction experts agreed on the importance of the variables.

The results of the relative weights and rank order are shown in Tables B-3 and B-4. The weighting for each category of responses is shown with the position ranking for the category in parenthesis below the weighting. The factor weightings are not offered as the "correct" answer. Rather, they are presented to provide

contracting officers with a reference point for developing their own weightings which address their specific needs.

TABLE B-3

RANK ORDERING OF QUALITY FACTORS IN A CONSTRUCTION PROJECT

Group (Sample size)	Meets schedule	Contract admin.	Work- manship	Quality assurance	Meets specs.	Response to changes
All responses (45)	0.1470 (3)	0.0866 (6)	0.2511 (1)	0.1412 (5)	0.2355 (2)	0.1432 (4)
Procurement (17)	0.2098 (2)	0.0903 (6)	0.2122 (1)	0.1392 (5)	0.1887 (3)	0.1597 (4)
Engineering (15)	0.1152 (3)	0.0585 (6)	0.3240 (1)	0.1069 (5)	0.2964 (2)	0.1125 (4)
Construction (13)	0.1325 (5)	0.1185 (6)	0.2084 (2)	0.1712 (3)	0.2102 (1)	0.1595 (4)

TABLE B-4

RANK ORDERING OF FACTORS FOR SELECTING THE BEST CONTRACTOR

Group (Sample size)	Record	Price	Financial resources	QC plan	Other resources	QC personnel
All responses (44)	0.2801 (1)	0.1306 (5)	0.1304 (6)	0.1637 (2)	0.1319 (4)	0.1633 (3)
Procurement (14)	0.2877 (1)	0.1695 (2)	0.1459 (3)	0.1407 (4)	0.1222 (6)	0.1340 (5)
Engineering (18)	0.2756 (1)	0.1137 (6)	0.1889 (5)	0.1729 (2)	0.1463 (4)	0.1724 (3)
Construction (12)	0.1325 (5)	0.1185 (6)	0.2084 (2)	0.1712 (3)	0.2102 (1)	0.1595 (4)

APPENDIX C

EXTRACTS FROM A FIXED-PRICE-AWARD-FEE REQUEST FOR PROPOSALS

The extracts presented in this appendix pertain to an RFP or IFB for award fees. They are adapted from an RFP used by McClellan AFB, Calif. The award-fee criteria should be tailored to meet the requirements of the project, and examples of such tailoring are given in DFARS 16.404-2(70).

SECTION H: SPECIAL CONTRACT REQUIREMENTS

H - 1 AWARD FEE

- a. In addition to other compensation set forth in this contract, the contractor may earn and be paid all or a portion of an award fee amount not to exceed \$_____ for the specified performance period, as determined in accordance with the provisions set forth below. These guidelines will be used on the basis of circumstances reasonably within the contractor's control. Any dispute over the amount of the award fee earned is expressly excluded from the operation of the Disputes clause of this contract. The decision of the award-fee-determination official shall be final.
- b. The contractor's performance shall be evaluated quarterly by the fee-determination official, and in no event shall any award fee amount be earned or paid in excess of the amount established as the maximum and as so allocated for each quarter.
- c. Notwithstanding any modification affecting contract price, the maximum award fee amount shall not be changed.
- d. In the event this contract is terminated before any regularly scheduled award-fee determination, the fee to be paid to the contractor shall be an appropriate portion of the established fee as may be determined by the fee-determination official.

H - 2 PROCEDURES AND EVALUATION FACTORS

- a. Performance evaluation report. The fee-determination official shall designate personnel as he/she may deem necessary to observe, examine, review, and report on the contractor's performance. Narrative reports covering performance shall be prepared by the designees for each performance evaluation period for all work performed during that period, in a form and

manner prescribed by the fee-determination official. The contractor's performance during such period will be reviewed by the person having technical cognizance over the project, who will, in addition to making "contractor performance evaluation reports," record narrative support data relative to all instances of either extremely poor (submarginal – minimum) or extremely good (very good – excellent) performance. This review will consider each of the performance factors listed below. However, these factors may change over the duration of this contract (see Attachment 1).

(1) QUALITY OF WORK (40%)

(a) (100%) Results of routine work site inspections by Government contract inspectors.

(2) TIMELINESS OF COMPLETION OF WORK (40%)

(a) (25%) The extent to which contract performance is ahead of schedule.

(b) (25%) The effective use of schedule alternatives to meet program and/or contract objectives.

(c) (25%) The ability to identify schedule conflicts resulting from problem areas and overcome them in order to maintain or improve schedules.

(d) (25%) The thoroughness and accuracy of progress reporting.

(3) RESPONSIVENESS (20%)

(a) (50%) Contractor's ability to work scheduling problems.

(b) (50%) Ability of contractor to recommend technical and/or schedule improvements which result in no additional cost to the Government.

b. Performance evaluation board. The fee-determination official or a duly appointed representative will chair a performance evaluation board for the evaluation of the performance reports, submitted in accordance with the preceding paragraph, and to advise the fee-determination official. The board will be composed of the fee-determination official (chairperson) and no fewer than three mid-level technical/management representatives (members) from the office charged with direct technical or management oversight of the project/contract. The contracting officer or his/her representative will be a non-voting participant (board advisor) at all board sessions. It shall meet as soon as possible after the receipt of the performance reports of each performance evaluation period and, on the basis of these performance reports and such other factual information as it may have or be able to obtain concerning circumstances and conditions bearing upon or affecting the

contractor's performance during the period, recommend to the fee-determination official the extent to which the contractor's performance during that period met, exceeded, or failed to meet contract requirements. It shall also review any contractor performance evaluation reports submitted (see Attachment 2).

c. After each performance evaluation period, the contracting officer shall notify the contractor in writing of determinations made by the board of major instances of any performance less than "good" by the contractor during each period, and shall afford the contractor an opportunity, within 10 days from receipt of such notification, to submit a written statement with respect thereto. The contracting officer shall also advise the contractor of major areas or instances of superior performance during such period.

d. At the end of each of the performance evaluation or award amount periods, and subsequent to review of any response received from the contractor, as provided above, the fee-determination official will make final determination on the amount, if any, of award fee to be awarded for that quarter.

H - 3 STANDARDS OF PERFORMANCE

a. The following standards of performance shall be employed as criteria in determining whether and to what extent the contractor has earned and shall be entitled to receive any award fee amount:

<u>Narrative Rating</u>	<u>Numerical Rating</u>
(1) Submarginal Performance	0 - 39.9
(2) Minimum Performance	40.0 - 49.9
(3) Good Performance	50.0 - 66.6
(4) Very Good Performance	66.7 - 83.3
(5) Excellent Performance	83.4 - 100

b. Submarginal Performance shall be performance that does not meet the contract minimum requirements and that may result in termination for default.

c. Minimum Performance shall be marginal performance that barely meets the contract requirements and that, if furnished by the contractor at a lower level of quality, would constitute a failure to meet the obligations of the contract.

d. Good Performance. Contractor's performance of some task requirements is above standard, while the remainder of the contractor's effort meets contract requirements. Management actions taken or initiated have resulted in demonstrated benefits to the Government in the form of improved quality.

increased timeliness, or generally enhanced responsiveness to Government requirements.

e. Very Good Performance. Contractor's performance of most task requirements is well above standard. Innovative management actions have resulted in some tangible benefits to the Government in the form of improved quality, increased timeliness, or generally enhanced responsiveness to Government requirements.

f. Excellent Performance. Contractor performance of task requirements is uniformly well above standard. Self-initiated, innovative management actions have resulted in tangible benefits to the Government in the form of improved quality, increased timeliness, or generally enhanced responsiveness to Government requirements.

g. The contractor shall be entitled to receive, in any award amount period, an award fee amount commensurate with the performance rating received during such period within the following ranges.

(1) Submarginal Performance	zero award amount
(2) Minimum Performance	zero award amount
(3) Good Performance	0 – 33.2
(4) Very Good Performance	33.3 – 66.6
(5) Excellent Performance	66.7 – 100

H - 4 AWARD-FEE PERCENTAGE

The performance evaluation board will use the following rating/conversion table and computation procedure to identify and convert the adjective rating and related numerical score to an award-fee percentage for the purpose of determining a recommendation for the amount of award fee earned for the period evaluated (see Attachment 3).

a. Rating/Conversion Table. The following table identifies the adjective ratings for which an award fee will be paid and the range of numerical scores and award fee percentages associated with such ratings:

<u>Adjective Rating</u>	<u>Numerical Score</u>	<u>Award-Fee Percent (%)</u>
Excellent	83.4 – 100	66.7 – 100
Very Good	66.7 – 83.3	33.3 – 66.6
Good	50.0 – 66.6	0 – 33.2
Minimum	40.0 – 49.9	
Submarginal	0 – 39.9	

BELOW 50: NO AWARD FEE

b. Conversion and Award Fee Calculation Procedure. After identifying the numerical scoring range within which the actual evaluation score falls, perform the following computations to convert the "actual" performance evaluation score to an award-fee percentage and to calculate the amount of award fee to be paid:

(1) Subtract the lower limit of the numerical scoring range from the actual evaluation score;

(2) Multiply the resultant difference by a factor of two (2);

(3) Add the resultant value to the lower limit of the award-fee percentage range associated within the scoring range initially identified; and

(4) Multiply the resultant percentage value times the amount of award-fee dollars made available for the period evaluated.

c. Disposition of Unearned Award Fee. As recommended by the performance evaluation board and at the discretion of the contracting officer, all or any portion of the unearned award fee applicable to any evaluation period may be either immediately applied to any subsequent period(s), reserved for future application to any subsequent period(s), and/or deobligated and thereby removed from further consideration of payment under the terms of the contract and this Schedule.

H - 5 PAYMENT OF AWARDS

The award amount, if any, determined by the fee-determination official to be payable shall be incorporated in this contract by a unilateral modification and shall thereupon become payable. Any applicable discounts offered in the contractor's bid do not apply to the award amount earned.

Performance Evaluation Criteria

The evaluation categories and criteria to be applied to each individual evaluation phase will be established by the Government and provided to the contractor in accordance with the following guidelines and procedures:

a. At the Government's discretion, cognizant Government and contractor representatives will convene a meeting, no later than 15 days prior to the scheduled start of each evaluation phase, to review the technical progress of the contract in order to identify an area of concern to the Government and/or possible improvement for the contractor relative to the upcoming phase.

b. Upon considering the information which may be derived from such a meeting or otherwise made available, the Government will formulate the specific criteria and weightings to be applied to the next evaluation phase, with consideration given to –

(1) The contractor's accomplishments, problems, strengths and/or weaknesses during the current period of evaluation, from either a technical or management standpoint:

(2) The milestones and/or objectives to be accomplished during the forthcoming *Evaluation Phase*;

(3) The *General Evaluation Categories* and the extent to which definitive criteria may be developed and applied to various aspects of the next period of evaluation;

(4) The emphasis needed to direct the Contractor's attention to an area of interest to the Government or motivate the Contractor toward better performance in an area of immediate concern; and

(5) Any other factors considered by the Government to be pertinent to Contractor performance during the scheduled evaluation period.

Contractor Performance Evaluation Report

The purpose of a "contractor performance report" is to provide the contractor with an opportunity to present a self-appraisal of performance against the evaluation criteria applicable to the specific contract milestone or period undergoing evaluation. In addition, the information and insight provided by such a report will benefit the performance evaluation board by enabling the board to consider all views in its effort to perform a total assessment of contractor performance. Requirements regarding the submission and content of this report are outlined below:

a. **Submittal:** The submission of a written contractor performance evaluation report is optional and, as such, is not a requirement of the contract or this Schedule. However, should the contractor elect to submit this report to the contracting officer, the report must be submitted within 5 days after the end of the evaluation period.

b. **Content:** The contractor performance evaluation report will include but not necessarily be limited to –

(1) A self-appraisal of performance in each award-fee category, identifying both strengths and weaknesses in the most objective manner possible;

(2) A discussion of any specific factor(s) that have had a significant positive or negative effect on performance relative to the milestone and/or period under evaluation; and

(3) A description of any potential and/or ongoing problem(s) or concern(s) and a discussion of the plan(s) for their resolution.

GOVERNMENT PERFORMANCE EVALUATION REPORT

Category	Criteria	Rating	Item Factor	Evaluation Rating	Category Factor	Efficiency Rating
A	Quality of Work					
	A - 1 Result of on-site contract inspections		X 1.00 =		X .40 =	
B	Timeliness of Completion					
	B - 1 Extent to which contract performance is ahead of schedule		X .25 =			
	B - 2 Effective use of schedule alternatives to meet program and/or contract objectives		X .25 =			
	B - 3 Ability to identify schedule conflicts resulting from problem areas and overcome them in order to maintain or improve schedules		X .25 =			
	B - 4 The thoroughness and accuracy of progress reporting		X .25 =			
	Total Item Weighted Rating				X .40 =	
C	Responsiveness					
	C - 1 Contractor's ability to work scheduling problems and minimize occupant disruption		X .50 =			
	C - 2 Ability of Contractor to recommend technical and/or schedule improvements which result in no additional cost to the Government		X .50 =			
	Total Item Weighted Rating				X .20 =	
	Total					Numerical Score =

APPENDIX D

EXTRACTS FROM A SHORT-FORM REQUEST FOR PROPOSALS

The extracts presented in this appendix cover those portions of an RFP that would differentiate a short-form RFP with selection based on price and other factors from the longer-form RFP. It is based on an RFP for King's Bay Naval Submarine Base.

The weights of the factors in this example are as follows:

Price	50%
Past Performance	25%
Previous Experience	15%
CQC Plan	10%

These weights do not have to be shown in the RFP since only the relative importance of the factors needs to be included.

SECTION L

INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS

L - 1 Proposal in the format set forth in Section L will be due at the time and place set forth in Section A, Standard Form 1442, Solicitation, Offer and Award. It is anticipated that award will be made approximately _____. **NOTE TO THE OFFERORS: THE GOVERNMENT MAY AWARD A CONTRACT AT ANY POINT AFTER RECEIPT OF THE INITIAL PROPOSALS WITHOUT DISCUSSIONS. THEREFORE, EACH PROPOSAL SHOULD CONTAIN THE OFFEROR'S BEST TERMS FROM ALL STANDPOINTS.**

L - 2 SUBMISSION OF PROPOSALS

a. _____ copies of the proposal are required. All forms shall be completed and signed where appropriate. The proposal shall consist of (a) Standard Form 1442d, Solicitation, Offer, and Award; (b) offeror's price; (c) offeror's past performance sheet; (d) offeror's previous experience proposal; (e) offeror's Quality Control Plan proposal; (f) . . .

b. The size of some portions of the proposal is restricted as follows: offeror's past performance sheet - one (1) page; offeror's previous experience proposal - five (5) pages; offeror's Quality Control Plan proposal - ten (10) pages. Pages will be a standard 8½ x 11 inches and type size will be no smaller than

one tenth of an inch in twelve pitch. PROPOSALS CONTAINING MORE THAN THE ALLOWABLE NUMBER OF PAGES IN THE ABOVE-LISTED SECTIONS WILL BE RETURNED AS NONRESPONSIVE.

- L - 3 Previous Experience (5 pages). List all jobs underway or completed in the last 5 years that are in excess of \$ _____, and are similar to the work in this RFP in that they _____.
- The format for each job listed is as follows:

Short description of contract, including contract number, if any
Location and date begun
Customer
Reference contact and telephone number
Statement of whether or not CQC was used
Type of contract (fixed price, unit price, etc.)
Original and actual or current contract amounts
Original and actual or current contract duration
Performance rating, if a formal rating was given.

- L - 4 Past Performance (1 page). List all jobs underway or completed in the last 5 years, not listed above, that were given formal performance ratings by Federal, state, or municipal agencies, or private companies. The format is as follows:

One sentence description of contract, including contract number, if any
Location and date begun
Reference contact and telephone number
Original and actual or current contract amount
Performance rating received.

For jobs listed in paragraph L-3 for which no formal rating was given, the Government will contact the contacts listed and ask them to rate the performance. Jobs for which no rating can be determined will be assumed to be rated satisfactory.

- L - 5 Contractor Quality Control Plan (10 pages). The Plan should contain an outline of the CQC organization with names for major positions and short summaries of their experience. It should cover, in outline form, preparatory, initial, follow-up, and special inspections and documentation for the following areas of construction:

(This portion should be tailored for the specific project. For instance: Controlling source of concrete ingredients, HVAC welded ducts, painted surfaces, etc.)

- L - 6 (The remainder of this section is standard.)

SECTION M

EVALUATION AND AWARD

M - 1 EVALUATION

a. The Government will establish a board to conduct an evaluation of each proposal received. The board will consist of not less than three technical or procurement personnel. The evaluation will be based exclusively on the content of the proposal and subsequent negotiations or discussion, if any, required to clarify or modify the proposals. The board will not consider any information or data incorporated by reference or otherwise to which reference is made.

b. Those proposals which have been properly submitted will be evaluated to determine a competitive range. The relative order of importance of the elements of each proposal is as follows:

- Price
- Past Performance
- Previous Experience
- CQC Plan

M - 2 AWARD

Once the competitive range is established, an award may be made to that offeror whose proposal is deemed to be the most favorable to the Government, price and other factors considered. **AWARD MAY NOT GO TO THE CONTRACTOR WITH THE LOWEST PRICE.** In the event discussions are needed, negotiations will be conducted with those falling within the competitive range, after which the best and final offers will be solicited from those involved in the negotiations. Following receipt of the best and final offers, each received offer will be evaluated and an award will be made to that offeror whose proposal is deemed to be the most favorable to the Government. **PLEASE NOTE THAT AS PREVIOUSLY STATED: AN AWARD MAY BE MADE FROM THE INITIAL OFFER WITHOUT FURTHER NEGOTIATIONS; THEREFORE, THE OFFEROR SHOULD SUBMIT THE BEST INITIAL OFFER POSSIBLE.**

APPENDIX E

RECOMMENDED FAR CHANGES

These recommended changes are intended to increase the development and use of innovative procurement strategies.

CHANGES TO EXISTING WORDING

- 36.103(a): Add "If the conditions in 6.401(a) do not apply, however, negotiated contracting is equally acceptable (for example, if award will be made on a basis other than price and price-related factors or if the contracting officer wishes to be free to conduct discussions if necessary)."
- 6.401: Delete the words "and document the reasons if sealed bidding is not appropriate" from the last sentence.
- 16.102(a): Add "or fixed-price-award-fee."
- 14.104: Add "Fixed-price-award-fee may also be used with sealed bidding if it meets the conditions of 6.401(a)."
- 14.502(a)(5): Change to, "A firm-fixed-price contract, a fixed-price-award-fee contract, or a fixed-price contract with economic price adjustment will be used."

NEW SECTION AND SUBSECTION TO BE ADDED

- 16.208 Fixed-price-award-fee contracts.

A fixed-price-award-fee contract is a fixed-price contract that provides for an award fee based upon a judgmental evaluation by the Government, sufficient to provide motivation for excellence in contract performance. Fixed-price-award-fee contracts are covered in Subpart 16.4, Incentive Contracts. See 16.403 for a more complete description and discussion of application of these contracts.

- 16.403-3 Fixed-price-award-fee contracts.

(a) *Description.* A fixed-price-award-fee contract is a fixed-price contract that includes part of the award fee used in cost-plus-award-fee contracts. Only the "award amount" described in 16.404-2 is used in a fixed-price-award-fee contract. The fee is one that (1) a contractor may earn in whole or in part during performance and (2) is sufficient to provide motivation for excellence in such areas as quality, timeliness, customer relations, and technical ingenuity. The amount of the award

fee to be paid is determined by the Government's judgmental evaluation of the contractor's performance in terms of the criteria stated in the award fee portion of the contract. This determination is made unilaterally by the Government and is not subject to the *Disputes* clause.

(b) *Application.* (1) The fixed-price-award-fee contract is suitable for use in circumstances similar to those for the cost-plus-award-fee contract. The following paragraphs also apply to fixed-price-award-fee contracts: 16.404-2(b)(1)(ii) and (iii) and 16.404-2(b)(2) & (3). This contract type may be used with sealed bidding or negotiated contracting.

(c) *Limitations.* No fixed-price-award-fee contract shall be awarded unless –

(1) The maximum award fee payable is not greater than 10 percent of the contract's estimated cost, excluding the fee; and

(2) The expected benefits are sufficient to warrant the cost of the fee and any additional cost and administrative effort this contract type may involve.

- 36.207(d) Fixed-price-award-fee contracts may also be used if the expected benefits are sufficient to warrant the cost of the fee and any additional cost and administrative effort the use of this contract type may involve.

REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION Unclassified		1b. RESTRICTIVE MARKINGS	
2a. SECURITY CLASSIFICATION AUTHORITY		3. DISTRIBUTION / AVAILABILITY OF REPORT "A" Approved for public release; distribution unlimited.	
2b. DECLASSIFICATION / DOWNGRADING SCHEDULE			
4. PERFORMING ORGANIZATION REPORT NUMBER(S) LMI-AL702R1		5. MONITORING ORGANIZATION REPORT NUMBER(S)	
6a. NAME OF PERFORMING ORGANIZATION Logistics Management Institute	6b. OFFICE SYMBOL (if applicable)	7a. NAME OF MONITORING ORGANIZATION	
6c. ADDRESS (City, State, and ZIP Code) 6400 Goldsboro Road Bethesda, Maryland 20817-5886		7b. ADDRESS (City, State, and ZIP Code)	
8a. NAME OF FUNDING / SPONSORING ORGANIZATION OASD(P&L)	8b. OFFICE SYMBOL (if applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER MDA903-85-C-0139	
8c. ADDRESS (City, State, and ZIP Code) The Pentagon Washington, D.C. 20301		10. SOURCE OF FUNDING NUMBERS	
		PROGRAM ELEMENT NO	PROJECT NO
		TASK NO	WORK UNIT ACCESSION NO
11. TITLE (Include Security Classification) Contracting for Quality Facilities			
12. PERSONAL AUTHOR(S) William B. Moore, Trevor L. Neve			
13a. TYPE OF REPORT Final	13b. TIME COVERED FROM _____ TO _____	14. DATE OF REPORT (Year, Month, Day) October 1987	15. PAGE COUNT 67
16. SUPPLEMENTARY NOTATION			
17. COSATI CODES		18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD	GROUP	SUB-GROUP	
		Quality facilities, firm-fixed-price contracts, competitive negotiation, award fees, Federal Acquisition Regulation (FAR).	
19. ABSTRACT (Continue on reverse if necessary and identify by block number)			
<p>Quality facilities are essential to the DoD and the people who live and work at defense installations. Currently, contracting for facilities is done almost exclusively with sealed-bid solicitations, low-bid awards, and firm-fixed-price contracts. We have found that less traditional contracting can improve the quality of the facilities acquired. Two examples are competitive negotiation and the use of award fees. The former makes past performance count in contractor selection. The latter promotes performance improvement on current projects. Contracting officers currently are discouraged by real and perceived barriers in the Federal Acquisition Regulation (FAR) and by Military Service rules, regulations and policies, and they are also hampered by massive documentation requirements and lengthy approval processes. We recommend that the Deputy Assistant Secretary of Defense (Installations) propose changes and clarifications to the FAR to remove barriers that currently limit the use of competitive negotiation and fixed-price-award-fee contracts and encourage the Services to remove similar barriers from their construction regulations. We believe such actions will provide a contracting environment more conducive to contractors building high-quality DoD facilities.</p>			
20. DISTRIBUTION / AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTIC USERS		21. ABSTRACT SECURITY CLASSIFICATION	
22a. NAME OF RESPONSIBLE INDIVIDUAL		22b. TELEPHONE (Include Area Code)	22c. OFFICE SYMBOL

END

DATE

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July 88