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An Audit Report on

Construction Management at the University of Texas at Austin

August 2006
Report No. 06-052



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Overall Conclusion

The University of Texas at Austin's (University) controls over construction projects are adequate to ensure compliance with laws and regulations related to the award of construction projects. However, final project costs and timelines often exceed initial estimates because of frequent changes in project funding and University priorities.

In 2003, the University's Department of Physical Plant performed an internal critique and analysis of its entire management structure and processes. That department subsequently arranged for a team of three qualified individuals from peer organizations to completely review its processes and recommend organizational and procedural improvements. As a result of this evaluation, the Department of Physical Plant was reorganized, and Project Management and Construction Services (PMCS) was created as a separate department to manage renovation and construction projects. Our audit focused on, but was not limited to, the work PMCS performs.

PMCS does a professional job of responding to the constantly changing demands of the customer base that it serves. It has implemented many of the recommendations made in the external evaluation and continues to make changes. However, our audit identified the need for continued improvements in certain areas.

Background

The University is responsible for managing (1) new construction projects that cost \$1 million or less and (2) repair and renovation projects that cost \$2 million or less. Projects above those thresholds are managed by the University of Texas System. Because of the size and cost of new buildings, most of the projects the University manages are projects to renovate and repair existing facilities. From fiscal year 2003 through February 2006, the University managed more than 430 individual construction projects with a total cost of over \$76 million.

Appendix 2 lists the construction projects tested during this audit.

Key Points

The University should improve its process for awarding contracts for construction and professional services.

In most respects, PMCS follows rules and regulations for the competitive award of contracts. However, making certain changes to the University's process for

awarding contracts would enhance the appearance of fair and open competition. In addition, policies and procedures at the University and the University of Texas System should be updated to address some of the challenges that PMCS faces.

PMCS should control change orders more closely.

As University and departmental priorities change and more funding becomes available, projects often expand in scope and costs increase significantly. PMCS does not have policies and procedures that are adequate to address the issues that arise when funding and priorities change. To expedite construction, PMCS uses change orders when separate, competitively bid projects would be more appropriate. PMCS also does not adequately monitor change order pricing and compliance with contract terms.

PMCS should document the processes it uses to manage construction projects.

PMCS does not have formal, documented management systems that standardize activities such as progress meetings, inspection processes, project close-out, warranty management, and minimum required documentation. As a result, PMCS does not have complete project histories, and projects are often left open for an extended period of time.

Summary of Management's Response

The System and the University agree with our recommendations.

Summary of Information Technology Review

While many of the processes PMCS uses to manage construction projects are essentially manual, PMCS uses the following automated systems:

- **Facility Asset Management Information System (FAMIS).** PMCS uses FAMIS to accumulate all transactions, costs, labor, and miscellaneous expenses for construction projects. FAMIS verifies and aggregates totals and account numbers and posts transactions to the University's mainframe accounting system.
- **FileMaker Pro Contracts Database.** PMCS uses this database to manage contract documents.
- **DEFINE.** This is the University accounting system that maintains all of the financial data related to a project.
- **WORQS.** This is the Web interface to FAMIS. WORQS is restricted to individuals who work with PMCS.

The University's controls provide reasonable assurance of the integrity of data in the FAMIS construction management system and the FileMaker Pro Contracts Database. PMCS management has expressed a desire for more full-featured project management software.

Because controls over the DEFINE system are addressed in other audits and WORQS has a limited role in the construction management process, audit work on these systems was limited to gaining an understanding of their role in the construction management process.

Summary of Objective, Scope, and Methodology

The objective of this audit was to determine whether the University has construction project management controls that are sufficient to ensure that state laws and University requirements are met in the award of contracts and that projects are completed on time and within budget.

The audit scope included construction projects that the University managed from September 1, 2002, through February 28, 2006. Projects tested were representative of the various construction delivery methods and were managed by a representative group of University project management personnel.

The audit methodology included interviewing University and University of Texas System personnel, reviewing project history files, and reviewing University and University of Texas System policies and procedures.

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Detailed Results

Chapter 1

The University Should Improve Its Processes for Awarding Contracts for Construction and Professional Services

In most respects, Project Management and Construction Services (PMCS) at the University of Texas at Austin (University) follows rules and regulations for the award of contracts. However, making certain changes in the process for awarding contracts would enhance the appearance of fair and open competition. In addition, policies and procedures at the University and the University of Texas System should be updated to address some of the challenges that PMCS faces.

Chapter 1-A

Determining Criteria Weights After Receiving Proposals May Give the Appearance of Bias in the Contract Award Process

PMCS uses a rating system of 100 points for evaluating competitive sealed contract proposals. The factors considered include things such as price, contractor expertise, and prior experience with the University. This is standard industry practice for evaluating proposals. However, the University determines the relative weights assigned to the evaluation criteria *after* proposals are received. Although this practice is allowed by the University of Texas System's Office of General Counsel's guidelines, it could give the appearance that the University will weight the criteria in favor of a particular contractor.

PMCS management has indicated that this is primarily a timing issue, that it is often difficult to make a full determination of what the weights of the various criteria should be before proposals are received, and that proposals are not given to the evaluating committee until after the weights are determined. However, because the dollar amounts of the proposals are read aloud at the public opening of proposals and the criteria for evaluating the proposals include prior experience with the University or the University of Texas System, contractors may assume that it is a foregone conclusion that the award will go to a specific contractor.

We identified no evidence of impropriety in the contract awards we tested. In most cases, contracts were awarded to the contractors that offered the lowest prices. However, determining the weights for evaluation criteria *after* proposals are received may give the appearance that the award process is biased. This could discourage qualified contractors from participating in the competitive process.

Recommendations

The University of Texas System should consider revising its rules and regulations to require that the criteria weights that are to be used in evaluating proposals be determined *before* requests for proposals are advertised.

Management's Response from the University of Texas System

While there is no indication of any impropriety in the award of construction contracts under the current system that allows for the weighting of selection criteria after the proposals are received but before they are submitted to the selection committee, UT System recognizes that this process could be vulnerable to claims of bias. However, it is not generally feasible to establish criteria weighting before requests for proposals are advertised as recommended. Therefore, UT System proposes to revise its Construction Contracting Guidelines to require that selection criteria weighting for construction projects be determined before requests for proposals are received. This is consistent with current OFPC practices and will eliminate the possible appearance of bias in the selection process.

Chapter 1-B

The University Does Not Always Comply With All Statutes or Regulations for the Award of Contracts

Auditors tested 26 construction projects that PMCS managed and identified several situations in which PMCS did not comply with the Texas Government Code, the Texas Education Code, or University of Texas System rules:

- Texas Education Code, Section 51.779 (b), requires higher education institutions to make public the basis of the contractor selection and the evaluations of bids and proposals for construction contracts within seven days of the date the contract is awarded. PMCS provides that information upon request, but it does not make the information available in a public forum.
- The University of Texas System's Office of General Counsel requires that institutions use a fee percentage schedule for basic architect and engineer services. That schedule is contained in the minutes from a 1987 Board of Regent's meeting. The schedule has three categories with different allowable fee percentage ranges for:
 - ♦ Dormitories, garages, and warehouses
 - ♦ Classrooms, offices, and other buildings
 - ♦ Health, research, and special education facilities

Although there are three categories within the schedule, each with different fees, PMCS always uses the fees assigned to health, research, and special education facilities for all projects, regardless of the project type. The health, research, and special education facilities fees are the highest among the three categories; fee ranges for the other two categories are lower.

PMCS management asserts that, because the projects it handles are small renovation projects, it might not be possible to hire qualified architects and engineers for PMCS projects if it used the lower fees.

- The University of Texas System Board of Regents' Rules and Regulations require that construction contracts and contracts with architects and engineers (1) comply with its Office of General Counsel's guidelines and (2) be written on standard forms approved by that office. While PMCS uses the approved contract documents, it does not always use the most recent versions of those documents. Auditors identified several recent contracts that used uniform general conditions established in 1997, even though more current uniform general conditions were available.
- The University of Texas System's rules and regulations delegate to the institutions the approval of repair and renovation projects that cost \$2 million or less or new construction projects that cost \$1 million or less. However, the University and the University of Texas System do not have policies and procedures that address projects for which cost estimates were initially below the thresholds but subsequently exceeded the thresholds because of change orders.

The University did not obtain approval when the Kinsolving Dorm renovation project exceeded the \$2 million renovation limit after that project had begun. The original contract amount was for \$1,975,000, but with change orders the final cost was \$2,117,805. Because change orders for renovation projects typically add more than ten percent to the original project, it was reasonably foreseeable that the cost would exceed \$2 million with change orders.

- Texas Government Code, Sections 2254.006 and 2166.2551, require that certain contracts (including contracts for professional services and construction) in excess of \$14,000 be reported to the Legislative Budget Board (LBB). The University's Office of Accounting is responsible for complying with this requirement; however, it did not consistently notify the LBB. Of the 26 contracts tested, 7 professional service contracts and 16 construction contracts were not reported to the LBB. University management has indicated that confusion about the reporting instructions led to this problem and that the problem will be corrected.

Recommendations

The Legislature should consider revising Texas Education Code, Section 51.779 (b), to require that award information be published on the Texas Building and Procurement Commission's "Texas Marketplace" Web site. Using a single site where contractors, University and University of Texas System management, and the general public can view the results of contracting activity could help strengthen the perception of fairness and equity in the award of construction contracts.

The University of Texas System, in cooperation with University management, should:

- Review the architectural/engineering services fee schedule for construction projects. If the review indicates that the fee schedule should be revised, the University of Texas System should make appropriate changes. If it is determined that no changes are required, the University should comply with the fee schedule.
- Establish and implement policies and procedures for the approval of projects that initially fall below the dollar thresholds for its approval but, because of change orders, subsequently exceed those thresholds.

The University should:

- Ensure that PMCS establishes and implements processes that are adequate to ensure that it uses the current versions of contracting documents approved by the University of Texas System's Office of General Counsel for all of its contracts.
- Ensure that the Office of Accounting, in cooperation with PMCS, reviews and revises procedures for reporting professional service and construction contracts to the LBB to ensure that all appropriate contracts are reported to the LBB.

Management's Response from the University of Texas System

UT System will conduct a review of the Board of Regents' current architectural/engineering fee schedule and report its findings and recommendations for changes, if warranted, to the Board of Regents for consideration during fiscal year 2007.

The UT System Board of Regents has delegated management authority to UT System institutions for construction projects up to \$2 million for repair and renovation and up to \$1 million for new construction. These limits are based on similar dollar thresholds for construction projects that are subject to Texas Higher Education Coordinating Board review and approval. UT institutions are not authorized to exceed the threshold limits for any one project, either

directly or through change orders, without further delegation by the Board of Regents and with appropriate Coordinating Board approval. UT System will revise its Construction Contracting Guidelines to further emphasize these limitations on delegated authority. UT System will also make an effort to educate purchasing personnel about the limitations and the appropriate steps to take for projects that are likely to exceed the limited delegation of authority.

The University of Texas at Austin also responded to these recommendations as follows:

This recommendation is for UT System, however, the University of Texas at Austin will comply with the currently established Fee Schedule and any future schedules that may be adopted based on the type of the project being designed for “Basic Services” and based on the estimated cost of the construction.

The University of Texas at Austin agrees to work with UT System to review its policies and comply with any subsequent modifications.

Management’s Response from the University

The University of Texas at Austin agrees with this recommendation. PMCS will regularly seek updates from UT System Office of General Council for the latest versions of documents and continue to search their website for direction as well. PMCS is currently using the latest (November 2005) version of the UGC as required.

The University of Texas at Austin agrees with this recommendation. The Office of Accounting has a functioning process in place to comply with the LBB reporting requirement. The omission of reporting these construction contracts was due to an object code clarification issue. This minor change has been planned as a technical coding request and the revised, corrected complete reporting is expected to be in place before the end of the fiscal year, August 31, 2006. PMCS will help facilitate the coding of projects.

The University Has Appropriate Policies and Procedures for Construction Contracts with Historically Underutilized Businesses

Texas Government Code, Section 2161.122, requires the University to report to the Texas Building and Procurement Commission the payments it makes under contracts awarded to historically underutilized businesses (HUB).

Three of the six categories by which these expenditures are reported relate to construction management at the University. Table 1 presents information regarding those three categories that the University reported to the Texas Building and Procurement Commission in its *Annual Supplemental Summary for FY2005 Report*.

Table 1

Actual HUB Performance Compared to Targets Fiscal Year 2005		
Category	Percentage of Expenditures Paid to Historically Underutilized Businesses	
	Texas Building and Procurement Commission Target	Actual
Building Construction, Including General Contractors and Operative Builders Contracts	26.1%	23.7%
Special Trade Construction Contracts	57.2%	33.8%
Professional Service Contracts	20.0%	12.1%

Source: The University's *Annual Supplemental Summary for FY2005 Report*.

It should be noted that the professional service contracts category includes architectural and engineering services, but it also includes financial, accounting, and medical services. Only the architectural and engineering services results were within the scope of this audit. In fiscal year 2005, the University made 18.7 percent of its expenditures for architectural and engineering service contracts to HUBs.

While the University did not meet Texas Building and Procurement Commission goals for these contracts, it has documented policies and procedures promoting full and equal participation for all businesses and an office that is dedicated to the furtherance of HUB participation in University and state procurement.

In addition, PMCS has documented policies and procedures encouraging contracting and subcontracting opportunities for HUBS in all of its contracts. PMCS consistently obtained HUB plans from contractors even when, because of the size or nature of the contract, no HUB plan was required.

Recommendation

The University should continue its efforts to achieve targets for HUB participation in construction projects.

Management's Response from the University

Although the TBPC targets represent the ideal goals that The University of Texas at Austin strives to achieve, the actual statewide performance in 2005 was 19.3% for Building Construction, 30.1% for Special Trade, and 21% for Professional Services. UT Austin is approximately 4 percentage points higher than the State as a whole in the first two categories; and, although there is still room for improvement in the third category, UT Austin represents a very small portion (six-tenths of 1%) of the total state-wide volume in this area.

There are several factors that contribute to UT Austin's quality performance in this area. For instance, PMCS currently requires a HUB Subcontracting Plan (HSP) for all projects awarded over \$100,000.00. In addition, PMCS participates in UT Austin HUB fairs & other outreach events to enhance awareness and increase HUB participation campus-wide.

PMCS Should Control Change Orders More Closely

PMCS does not have policies and procedures that are adequate to address the constantly changing funding and priorities within the University departments it serves. As a result, project costs often increase significantly and PMCS approves change orders when separate, competitively bid projects would be more appropriate. PMCS also does not adequately monitor change order pricing and compliance with contract terms.

Chapter 2-A

PMCS Adds Change Orders to Existing Projects to Meet University Priorities

For four of the 26 construction projects auditors tested, PMCS approved change orders that were unrelated to the original scope of each project. These change orders added considerable cost and time to the original projects. Specifically:

- A change order with a guaranteed maximum price of \$1,132,691 was added to a “design-build” project for fire protection at the Communications building. The change order was to add firewater lines to the Communications Building and other nearby buildings.
- To expedite roof repairs at Gregory Gym, a \$532,026 change order for the gym roof was added to an existing contract for a roof renovation project at the Pickle Research Center. These two sites are not located near each other.
- A \$124,075 change order for building-wide exit signs and a \$19,881 change order for fire alarms on the fourth floor of the College of Business Administration were added to an existing contract for renovation of the third floor of that building.
- When leaks at the Animal Resource Center were delaying another unrelated construction project, a \$113,947 change order for waterproofing that building was added to a project to waterproof and repair Welch Plaza.

The uniform general conditions within each of these contracts state that the owner may order changes in the work that are “within the general scope” of the contract and that consist “of additions, deletions, or other revisions and the Contract Sum and the Contract Time will be adjusted accordingly.” The change orders described above do not fall within the general scope of the initial contract, although they were for similar types of work. They should have been separate projects that were competitively bid. PMCS has indicated that these change orders were made to expedite the work and avoid the additional time required for a competitive contract award.

We recognize that emergencies may arise in the construction process or that priorities may change and make new projects more critical. Nevertheless, in all cases, contracts and related change orders should be made as competitive as possible under the circumstances. PMCS does not have documented policies and procedures that address these issues or give guidance to project management regarding when change orders are or are not appropriate.

Recommendations

The University should:

- Ensure that PMCS and other University departments comply with (1) contract clauses designed to control the scope of projects and (2) policies for competitive contract awards.
- Establish and implement policies and procedures related to emergency or critical unforeseen construction needs. When proposed change orders are not within the general scope of the original project, required approvals should be adequate to ensure University management is aware of the reasons that there will be no competition for the additional work.

Management's Response from the University

The University of Texas at Austin agrees with this recommendation. PMCS shall continue to be diligent to control additional scope from increasing the originally bid project. Current policies are to limit change orders to approximately 20% of the awarded price (provided available funding is in place). Anything over 20% must have written justification which must be approved by the Director.

The University of Texas at Austin agrees with the recommendation to document policies and procedures. PMCS will explore better ways to handle emergency projects and critical unforeseen needs and shall develop an approved process similar to that required for Sole Source or Proprietary projects.

Chapter 2-B

PMCS Does Not Adequately Monitor Contractor Change Orders and Billing Documents

PMCS did not detect numerous small errors in change order pricing that resulted in excessive payments. PMCS personnel review the mathematical accuracy of change orders, but they do not adequately review the line items on invoices for compliance with contract terms and pricing agreements.

Auditors identified the following errors that PMCS did not detect:

- Items that should have been covered by the allowed overhead markup percentage were charged as separate line items (in addition to the overhead markup) on contractors' request for change orders. Specifically:
 - Supervision costs were charged as separate line items on two contracts.
 - Insurance fees and payment/performance bond fees were charged as separate line items on three contracts.
 - Warranty costs were charged as separate line items on one contract.
- Contractors did not price change orders properly, and PMCS did not detect or correct those prices. Specifically:
 - On four contracts, the overhead and profit markup was charged on the *total change order amount*. However, the uniform general and supplementary general conditions within the contract required that overhead and profit markup be charged on the *total change order excluding the labor burden*.
 - On two contracts, the overhead markup percentage exceeded the limit allowed by the contracts' uniform general and supplementary general conditions. On one additional contract, the overhead percentage markup was charged twice.
 - On one contract, unit prices established in the original contract were not used for change order pricing.
 - On one contract, sales tax was charged to a tax-exempt entity, even though the contractor's change order application stated that sales tax was not being charged.
 - On one contract, a duplicate payment was made on change order work.
 - On three contracts, there was no detailed support for change order pricing.

The dollar value of these errors was relatively small when compared with the overall contract amounts. However, any overpayments result in loss of purchasing power to the University departments involved.

Recommendations

The University should:

- Ensure that PMCS establishes and implements policies and procedures for reviewing change orders. These policies and procedures should identify the individuals who are responsible for this activity, as well as specific procedures required to ensure that contract terms are met.
- Ensure that PMCS monitors change orders carefully for pricing and compliance with contract terms.

Management's Response from the University

The University of Texas at Austin agrees with this recommendation. PMCS has been reviewing these procedures over the last year. Each change order will be processed in the same manner for all delivery methods. The following documents are to be consistently used by each Project Manager to implement and seek approval for a Change Order:

- *Request to contractor for change*
- *Contract breakdown to be on same format indicating labor, material and appropriate mark ups (as specified by the UGC).*
- *Appropriate Checklist for information to Contract Section for execution and approval (currently in place)*
- *Approvals, Field Order, Change Order, etc. forms (currently in place)*

These steps should address inconsistencies that may have been found in the audit.

PMCS Should Document the Processes It Uses to Manage Construction Projects

PMCS does not have formal, documented management systems that standardize activities such as progress meetings, inspection processes, project close-out procedures, warranty management, and minimum required documentation. As a result, it does not have complete project histories, and projects are often left open for an extended period of time.

Chapter 3-A

PMCS Should Develop and Implement Formal, Documented Construction Project Management Procedures

PMCS does not have standard project management guidelines for its personnel to follow when managing a project. As a result, individual project managers retain the documentation in project management files in significantly different ways. Some files contain many duplicates while others have no copies of key project documents. As a result, it is difficult for new or alternate personnel to quickly discern the status of the project.

Except for limited document imaging and maintenance management systems, PMCS operations are paper-intensive. As a result, a great deal of the working space is devoted to the voluminous documentation that renovation projects generate.

Recommendations

The University should:

- Ensure that PMCS develops formal management systems that document expectations for standardized processes, minimum documentation requirements, and the handling of exceptions.
- Consider whether PMCS should pursue the development or purchase of an automated project management system that would include imaging systems and reduce the paper burden.

Management's Response from the University

The University of Texas at Austin agrees with the recommendation to improve policies and procedures. PMCS will continue to work toward this goal to make the entire construction management process more efficient.

The University of Texas at Austin agrees with this recommendation. PMCS has already identified a Project Management software system that all Project Managers would use to manage their projects. This will provide a very

efficient tool and will provide interface with contractors and the bidding community as well.

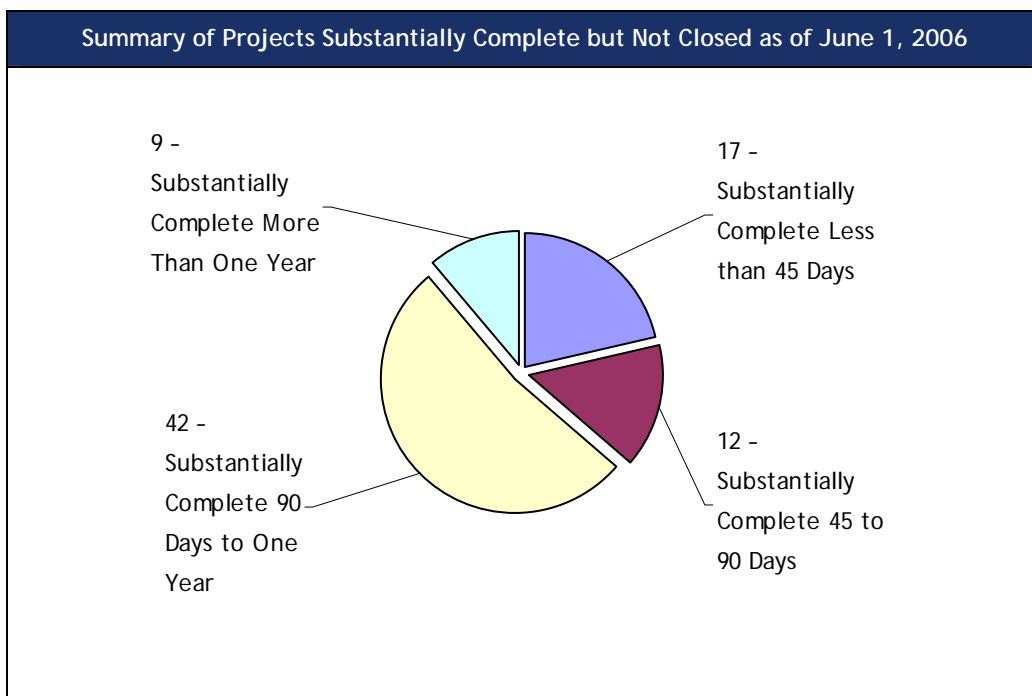
Chapter 3-B

PMCS Does Not Always Close Projects within a Reasonable Period of Time

As noted in Chapter 2, project timelines are often expanded significantly because of the number and scope of change orders. Much of this is because PMCS is in the very difficult position of trying to address client department demands. However, after projects are substantially complete, PMCS does not close projects within an appropriate period of time.

The PMCS target for closeout of projects is 45 days after substantial completion. However, of 80 construction projects that were substantially complete but not closed out as of June 1, 2006, 63 had been substantially complete for more than 45 days. Nine of those 63 projects remained open for more than a year after substantial completion (see Figure 1).

Figure 1



Source: The University's Facility Asset Management Information System (FAMIS).

When projects are not closed in a timely fashion, the remaining budgeted funds allocated to those projects are not available to the departments for other uses. Not closing out projects also invites departmental management to add work that might be better addressed as a separate project. This can also result

in the creation of work-in-progress schedules that do not give University management a clear picture of the state of construction.

Recommendations

The University should develop and implement written policies and procedures designed to control the construction process. Those policies and procedures should:

- Provide guidance to department managers about the construction process.
- Identify the specific project points at which a new project is required in order to initiate new activity.
- Include mechanisms for PMCS to close projects within a reasonable time after they are substantially complete.

Management's Response from the University

The University of Texas at Austin agrees. PMCS will continue to document its processes. Such documentation will make processes clearer and consistent to clients as well as internal staff.

Appendices

Appendix 1

Objective, Scope, and Methodology

Objective

The objective of this audit was to determine whether the University of Texas at Austin (University) has construction project management controls that are sufficient to ensure that state laws and University requirements are met in the award of contracts and that projects are completed on time and within budget.

Scope

This audit scope included construction projects that the University managed from September 1, 2002, through February 28, 2006. The projects tested included a representative cross-section of University personnel and the following construction delivery methods: design-build, construction-manager-at-risk, competitive sealed proposals, lowest competitive bids, and job order contracts (see Appendix 3 for descriptions of these delivery methods).

Methodology

The audit methodology included conducting interviews with appropriate University and University of Texas System personnel, reviewing project history files, and reviewing University and University of Texas System policies and procedures.

Information collected and reviewed included the following:

- University and University of Texas System policies and procedures
- Project histories, including award documents, signed contracts, change order documentation and support, payment applications and support, and project management documentation
- University construction in progress schedules from annual financial reports for fiscal years 2003, 2004, and 2005
- Reports from the University's Facilities Asset Management Information System (FAMIS)

- Reports from the University's FileMaker Pro Contracts Database, which included a list of all contracts awarded from September 1, 2002, through February 28, 2006
- University and University of Texas System standard contracts, Uniform General and Supplementary General Conditions, and other contracting documents
- The University's evaluation of the qualifications submitted by architects and engineers for an ongoing list of qualified professionals.

Procedures and tests conducted included the following:

- Comparison of University contracting documents to (1) the University of Texas System's Office of General Counsel's required contracting documents and (2) the Texas Building and Procurement Commission's *State of Texas Contract Management Guide*
- Review of the criteria and weighting of criteria used to award contracts based upon competitive sealed proposals
- Judgmental selection of a sample of construction projects, including each delivery method used by the University and a representative cross-section of University personnel. Performed the following tests:
 - Reviewed the evaluation of competitive bids and proposals for compliance with state laws and regulations, University of Texas System policies, and University policies
 - Determined whether Texas Higher Education Coordinating Board reporting requirements were met
 - Determined whether contracts for more than \$14,000 were reported to the Legislative Budget Board
 - Reviewed payment applications and change orders and determined whether they were calculated accurately, complied with contract terms, and were reviewed and approved by appropriate personnel
 - Determined whether change orders were consistent with the nature of the original project
 - Reviewed documentation of project oversight to determine whether the University exercised due care in the oversight of construction projects
 - Inspected building sites

Criteria used included the following:

- Texas Education Code
- Texas Government Code
- Texas Occupations Code
- Texas Building and Procurement Commission' *State of Texas Contract Management Guide*
- The University of Texas System Board of Regents' rules and regulations
- The University of Texas System's Office of General Counsel construction contracting guidelines
- The University's policies and procedures

Project Information

Audit fieldwork was conducted from April 2006 through May 2006. This audit was conducted in accordance with generally accepted government auditing standards.

The following members of the State Auditor's staff performed the audit:

- Agnes Rasmussen, CPA, CISA (Project Manager)
- Kristin Alexander, CIA (Assistant Project Manager)
- Jennifer Brantley, MS
- Kelli Davis
- Anne Hoel
- Marlen Kraemer, MBA, CISA
- Terry Nickel, CIA, CFE
- Namita Pai, MS
- Serra Tamur, MPA, CISA, CIA
- Charles P. Dunlap, Jr., CPA (Quality Control Reviewer)
- Dave Gerber, MBA, CISA (Audit Manager)

Construction Projects Tested

Table 2 lists the construction projects tested during this audit. Appendix 3 describes the construction project delivery methods listed in this table.

Table 2

Projects Tested During This Audit		
Project Description	Initial Contract Amount	Project Cost (as of February 28, 2006)
Construction Project Delivery Method: Construction-Manager-at-Risk		
Renovation of Neurobiology Lab	\$ 702,586	\$ 652,729
Construction Project Delivery Method: Design-Build		
Fire Protection Systems in Communications Center	1,250,000	1,458,559
Firewater Line Installation for Communications Center and Other Buildings ^a	960,886	1,132,691
Construction Project Delivery Method: Competitive Sealed Proposal		
Laser Lab and Safety Improvements in Moore Hall	917,900	1,030,053
Kinsolving Dormitory Lobby Renovation	1,975,000	2,117,805
Kinsolving Dormitory Sun Deck Improvements	1,727,000	1,911,980
Barrier Facility for Animal Resource Center	1,036,900	1,036,900 ^b
Roof Replacement at Pickle Research Center	643,205	1,184,627
Sanchez Accessible Restroom Renovation	519,000	1,175,710
Disch-Falk Field Scoreboard	299,400	477,300
South Plaza Renovation-School of Business	440,000	587,636
Roof Replacement at Jester Center	999,663	1,203,305
Interior Renovation at the School of Business	957,000	1,104,660
Renovation of College of Business Administration	370,000	518,610
Construction Project Delivery Method: Lowest Competitive Bid		
Welch Plaza Waterproofing and Repairs	406,888	848,446
Kinsolving Seryer Landscaping and Improvements	1,194,600	1,605,588 ^b
Maintenance and Waterproofing for Engineering and Science	173,500	549,529
Egress Improvements at Three Dormitories	1,046,175	1,402,563 ^b
Fire Sprinkler in Perry-Castañeda Library Basement	556,800	1,033,777
Repairs to Campus Underground Tunnel System	147,500	147,500 ^b
Exterior Concrete Repairs at Marine Science Institute	458,522	1,054,130
Conversion in Pharmacy Building for Faculty Offices	272,640	404,841
Construction Project Delivery Method: Job Order Contract		
Burdine Hall Classroom Renovation	492,517	604,490 ^b

Projects Tested During This Audit

Project Description	Initial Contract Amount	Project Cost (as of February 28, 2006)
Ancel Lab Renovations	188,163	198,953
Fume Hood Replacement at Physical Plant 3	54,451	55,834
Campus Paving Project at Comal and Martin Luther King	23,055	45,501
Crooks Office Renovation at Welch Hall	68,750	76,648
Totals	\$ 17,882,101	\$ 23,620,365

^a Change order added to the Fire Protection Systems in Communications Center project.

^b Project is still in progress and may have change orders outstanding that would increase this amount.

Descriptions of Construction Project Delivery Methods

Of the 26 projects tested, the University awarded 8 contracts based on the lowest competitive bid and 11 based on competitive sealed proposals. The University used the construction-manager-at-risk delivery method for one project and the design-build method for another. The University used job-order contracts for the remaining 5 projects. The construction project delivery methods are described below.

Lowest competitive bid and competitive sealed proposals methods. For both of these methods, the architect/engineer is selected before the request for proposals from contractors is issued. However, under the competitive sealed proposals method, the contractor is selected based on best value rather than on price alone, and the negotiation process may lead to contract terms and prices that are different from those originally submitted. Under the lowest competitive bid method, the selected contractor is generally the lowest responsible bidder, and the contract award is based on that lowest bid.

Construction-manager-at-risk method. Under this method, the University contracts with the construction manager and the architect/engineer at the same time. The construction manager at risk is selected based on qualifications and best overall value to the University. The construction manager manages the entire construction process and is the single point of accountability for all subcontractors.

Design-build method. When using this method, the University contracts with a single design-build contractor. There is a single point of contact for all construction and design-related work. Because the architect and builder are part of the same team, construction can start before the design phase is finished, enabling fast delivery of the project. The University may designate an independent architect to act as its representative.

Job order contracts method. Job order contracts are typically used for minor construction projects, such as the repair, rehabilitation, or alteration of a facility. The work is usually of a recurring nature, and there are indefinite quantities and orders. Contracts are awarded substantially on the basis of predescribed tasks within a construction industry unit price book specified by the University. Depending on the University's provisions, proposals are either based upon specific prices for certain tasks in the book or on a multiplier or coefficient to be applied to the prices published in the book.

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