



Item: AF: I-2b

AUDIT AND FINANCE COMMITTEE

Wednesday, February 16, 2011

SUBJECT: REVIEW OF AUDITS: FAU 10/11-2, AUDIT OF CONSTRUCTION FOR THE PERIOD JANUARY 1 THROUGH SEPTEMBER 30, 2010.

PROPOSED COMMITTEE ACTION

Information Only.

BACKGROUND INFORMATION

Audit objectives were to determine whether: 1) subcontractors hired by the construction manager were selected as a result of a properly documented competitive bidding process; 2) change orders and work self-performed by the construction manager were in accordance with the construction agreement and established policies and procedures; and 3) payments for various construction expense categories, as well as profit and overhead, were reviewed and approved by management, processed timely, and accurately reflected in the University's accounting records.

We made three recommendations relating to adequacy of documentation for review and approval of construction invoices and compliance with established CM bidding procedures.

IMPLEMENTATION PLAN/DATE

Not Applicable.

FISCAL IMPLICATIONS

Not Applicable.

Supporting Documentation: Audit Report FAU 10/11-2

Presented by: Mr. Morley Barnett, Inspector General

Phone: 561-297-3682

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Office of Inspector General

Audit Report: *Construction*
For the Period January 1 through September 30, 2010

Use of Report

We are employed by Florida Atlantic University. This report is intended solely for the internal use of the State University System and is not intended to be used for any other purpose. This restriction is not intended to limit the distribution of this report, which is a matter of public record.

**REPORT ON THE AUDIT OF
CONSTRUCTION
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BT-616 College of Engineering & Computer Science



BT-678 College of Arts & Letters Culture/Society Building



BT-668 FAU Recreation Center Expansion

MEMORANDUM

TO: Dr. Mary J. Saunders
President

FROM: Morley Barnett
Inspector General 

DATE: January 28, 2011

SUBJ: AUDIT OF CONSTRUCTION

In accordance with the University's Internal Audit Plan for fiscal year 2010-11, we have conducted an audit of select major construction projects at Florida Atlantic University. The report contained herein presents our scope and objectives and provides comments and conclusions resulting from procedures performed.

We have made three recommendations to address our current findings. We concur with the responses of the auditee which have been incorporated into the report. In accordance with our established procedures, follow-up will be performed subsequent to the issuance of this report to determine effective implementation of our recommendations by management.

Please call me if you have any questions.

cc: Interim University Provost
Senior Vice Presidents
Vice Presidents
Auditee
FAU BOT Audit and Finance Committee
Inspector General, Florida Board of Governors
Florida Auditor General

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EXECUTIVE SUMMARY

In accordance with the University's Internal Audit Plan for fiscal year 2010-11, we have conducted an audit of major construction projects (expected costs greater than \$1,000,000) at Florida Atlantic University for the period January 1 through September 30, 2010.

Based on a sample of three completed major projects, our audit objectives were to determine whether:

- Subcontractors hired by the Construction Manager (CM) were selected as a result of a properly documented competitive bidding process;
- Construction change orders and work self-performed by the CM were properly reviewed and approved, and were in accordance with the Construction Manager Agreement and established policies and procedures; and,
- Payments to the CM for general conditions items, profit & overhead, and subcontracted and self-performed construction work were properly supported by appropriate backup documentation, reviewed and approved by management, processed timely, and accurately posted to the University's accounting records.

Based on a review of the relevant available documentation for the three selected projects, we found no evidence to indicate material non-compliance with the stated objectives of the audit. We did, however, identify two findings related to the review and approval of CM invoices for major projects, and another concerning compliance with Facilities Planning's CM bidding procedures. The details of all findings, as well as suggestions for corrective action, can be found in the Comments and Recommendations section of this report.



January 28, 2011

Dr. Mary J. Saunders,
President
Florida Atlantic University
Boca Raton, Florida

Dear President Saunders:

SCOPE AND OBJECTIVES

In accordance with the University’s Internal Audit Plan for fiscal year 2010-11, we have conducted an audit of major construction projects (expected costs greater than \$1,000,000) at Florida Atlantic University for the period January 1 through September 30, 2010.

Based on a sample of three completed major projects, our audit objectives were to determine whether:

- Subcontractors hired by the Construction Manager (CM) were selected as a result of a properly documented competitive bidding process;
- Construction change orders and work self-performed by the CM were properly reviewed and approved, and were in accordance with the Construction Manager Agreement and established policies and procedures; and,
- Payments to the CM for general conditions items, profit & overhead, and subcontracted and self-performed construction work were properly supported by appropriate backup documentation, reviewed and approved by management, processed timely, and accurately posted to the University’s accounting records.

We obtained an understanding of the relevant construction processes by reviewing written policies and procedures, interviewing key personnel, and evaluating key internal controls. Completed projects selected for documentary and financial review were:

<u>Project #</u>	<u>Project Title</u>	<u>Original GMP</u>	<u>GMP costs incurred as of 9/30/10</u>
BT-616	FAU College of Engineering & Computer Science *	\$2,497,372	\$33,651,317
BT-668	FAU Recreation Center Expansion	\$14,663,892	\$12,709,656
BT-678	FAU Arts & Letters Culture/Society Bldg.	\$18,825,512	\$15,944,618

*Original Guaranteed Maximum Price (GMP) reflects approved construction of chiller plant. Subsequently, construction of the main building was added as a single change order of \$31.2 million to the GMP.

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Populations, sample sizes, and selection methods were determined based on our evaluation of internal controls, our assessment of audit risk, the availability of pertinent University records, and other factors including auditor judgement. For the College of Engineering and Science, Recreation Center Expansion, and Arts & Letters Culture/Society Building projects, we reviewed supporting documentation for expenditures representing approximately 30%, 16%, and 41% respectively of GMP costs as of 9/30/10.

We conducted our audit in accordance with the Institute of Internal Auditors' International Standards for the Professional Practice of Internal Auditing.

BACKGROUND

The University's construction process is administered by the Facilities Planning (FP) Department, a unit of the Division of Facilities. FP is currently staffed by 12 employees, and is responsible for planning and managing the design, construction, demolition, remodeling, and renovation of facilities, and the acquisition and disposal of real estate. The department is based on the Boca Raton campus, and maintains a limited staff at both the Broward and Northern campuses in order to more effectively administer construction programs at the branch campuses. Facilities Planning has assumed a leadership role in ensuring that appropriate policies and procedures are developed and implemented to address all aspects of FAU's building construction program, including ensuring that funds provided for projects and the operation of FP are expended in a manner that maximizes the benefit to the University, and is consistent with all applicable laws, rules, and regulations.

To control costs and promote efficiency, the University generally uses the construction manager (CM) process for its major construction projects. CMs are contracted to manage projects pursuant to a formal selection process, and are required to submit guaranteed maximum price (GMP) proposals for the construction costs of the projects. After the agreed-upon GMP is executed as a contractual amendment to the CM's agreement with the University, it is the CM's responsibility to, among other things, prepare bid packages for the construction trade work, solicit and evaluate competitive bids from pre-qualified trade contractors, and appropriately award and execute trade contracts between itself and the successful bidders. Original GMP contract amounts may increase or decrease due to applicable change orders and/or contractual amendments.

COMMENTS AND RECOMMENDATIONS

Current Findings and Recommendations

Review and Approval of Construction Manager Invoices for Major Projects

Documentation Deficiencies in the Construction Manager Payment Approval Process

Facilities Planning Policy & Procedure #7, *Receipt and Approval of Invoices (A/E, GC/CM) Major Projects* requires CM pay requests to be submitted in accordance with the contract and include all necessary back-up documentation. This requires that CM pay requests be supported by all billings from trade sub-contractors, as submitted on the *FAU Standard Subcontractor Partial Payment Request* form. Facilities Planning personnel are required to review and verify all billing computations, including the

percent of project completion, and ensure that each expense is supported by a receipt/invoice or appropriate back-up documentation which matches the CM's *Schedule of Values* and contract requirements. If the invoice and/or back-up documentation submitted with the CM pay request is incorrect, the invoice cannot be approved, and a *Payment Request – Rejection Notice Form* - stating the reason(s) for rejection, among other things - must be completed and returned to the CM. This review process is critical for ensuring that CMs are not paid for unsupported, inappropriate, or unauthorized expenditure items.

Currently, Facilities Planning's practice is to pay for construction items based only on properly completed *FAU Standard Subcontractor Partial Payment Request* form(s) submitted with the CM's pay request. We noted that *Schedules of Values* from the trade subcontractors and back-up documentation such as invoices or receipts were not always requested, and discussions with FP staff lead us to believe that there was a lack of clarity on how to properly apply FP Policy & Procedure #7. Based on current practices, we believe there is the possibility for material differences to exist and not be followed-up on or detected by FP personnel.

Compliance testing on a sample of five partial payments made for each of the audited projects revealed the following deficiencies for various *Schedule of Values* (construction/general conditions) items paid:

Deficiency Type	BT-616, College of Engineering & Science (137 items totaling \$7.6 million)	BT-668, Rec. Center Expansion (144 items totaling \$1.5 million)	BT-678, Arts & Letters Culture/Society Building (78 items totaling \$5.6 million)
Construction Items			
A Request for Payment on the FAU Standard Subcontractor Partial Payment Request form was on file; however, no supporting invoice(s) or Schedule of Values were received from the applicable trade sub-contractor.	127 of 137 items totaling \$7.5 million	19 of 144 items totaling \$404,890	62 of 78 items totaling \$4.7 million
The trade sub-contractor's Schedule of Values was on file; however, no supporting invoice(s) or Request for Payment on the FAU Standard Subcontractor Partial Payment Request form was available for review.	One of 137 items for \$3,250	One of 144 items for \$56,086	No exceptions
Trade sub-contractor's partial payment certificate on file did not agree with partial payment made to the CM. No documentation was on file to explain the discrepancy. Also, there were no supporting invoice(s) or Schedule of Values on file to support the payment made. It was necessary for the auditor to obtain additional supporting documentation from the CM to reconcile the trade subcontractor's partial payment certificate to the construction item(s) paid.	No exceptions	120 of 144 items totaling \$1.1 million	14 of 78 totaling approximately \$900,000

Deficiency Type	BT-616, College of Engineering & Science	BT-668, Recreation Center Expansion	BT-678, Arts & Letters Culture/Society Building
<i>General Conditions</i>			
<i>Schedule of Values</i> items not adequately supported by billing documentation.	No exceptions	Six items totaling \$16,312	No exceptions

Recommendation No. 1.1

Management should revise current policies and procedures to more clearly define the types of back-up documentation (e.g. *invoices, Schedule of Values, etc.*) required to support the CM's pay requests for construction and general condition items. In our opinion, FP Policy and Procedure #7 was not being consistently followed and, as a result, the payment process for construction items was not as effective as intended.

Management's Response

Action Plan:

Facilities Planning will revise current P&P # 7 to clarify that all CM partial payment requests be supported by: a) FAU's Standard Subcontractor Partial Payment Request Form; b) the subcontractor's schedule of values; and, c) any necessary additional supporting documentation which links the trade subcontractor's partial payment request form with construction items to be paid. When implemented, the Director of FP will provide additional training to all FP personnel responsible for review and approval of payments to the CM.

Implementation Date:

June 1, 2011

Responsible Auditee:

Robert A. Richman, Director of Facilities Planning

Lack of Effective Monitoring of GMP Contract Change Orders / Amendments to Schedule of Values Amounts for General Conditions and Profit & Overhead Items

In accordance with FP Policy & Procedure #7, *Receipt and Approval of Invoices (A/E, GC/CM) Major Projects*, FP personnel are required to verify that payments to the CM for labor costs are supported by labor base and burden rates as agreed-upon and documented in the guaranteed maximum price proposal. In addition, CM fees are to be supported by completion of a *Calculation of Profit and Overhead Fee* form. Review of these cost items are necessary to ensure that CM billings are properly supported and paid in accordance with the GMP contract, adjusted for any change orders and amendments.

Our review of *General Conditions* and *Profit & Overhead* items for five partial payments made to each of the CMs for the three sampled projects revealed that FP personnel were obtaining the required *Labor Base and Burden Rates* and *Calculation of Profit and Overhead Fee* information from the CM prior to payment. However, FP personnel were not effectively monitoring GMP contract change orders and amendments which impacted *General Conditions and Profit & Overhead* items on the *Schedule of Values* before paying the CM. For example, we noted that the *Schedule of Values* amount for *General Conditions* for a sampled partial payment on project BT-616 was \$37,101 greater than the amount of *General Conditions* listed in the original GMP contract. Initially FP could not explain this discrepancy, but upon subsequent inquiry of the CM it was determined that the difference was attributable to reclassification among various contracted items.

Overall, we noted that FP only monitored the *Schedule of Values* for cumulative totals of change orders and/or contract amendments that affected total GMP, and not for changes in each GMP contract component such as *General Conditions* and *Profit & Overhead*. In addition, the labor portion of *General Conditions* items paid was not being monitored by FP to ensure that the cumulative labor amounts - which increased with each successive CM partial payment - did not exceed the corresponding total labor amount listed in the GMP contract.

Recommendation No. 1.2

As part of the CM invoice review and approval process, Facilities Planning should ensure that *Schedule of Values* amounts for *General Conditions* and *Profit & Overhead* items are in agreement with previously agreed-upon GMP contract totals, net of any change orders or amendments, before paying them to the CM. In addition, management should consider monitoring the labor portion of *General Conditions* items to ensure that *cumulative* labor items paid do not exceed the corresponding total labor component(s) as detailed in the GMP contract, as amended, if applicable.

Management's Response

Action Plan:

Policy and Procedure #7 will be revised to emphasize integrity in the billing/approval process. Specifically, as recommended during the audit, future bill approvals will include documented verification that amounts shown in the CM schedule of values are in agreement with (adjusted) contracted amounts for general conditions and profit/fees items. CM profit/fees will continue to be recognized and paid to the CM on a percentage of completion based on the most current adjusted GMP and as verified by the architect/engineer of record. In addition, consideration will be given to revising P & P #7 to also pay general conditions items on a percent of completion basis, with continued receipt and review of supporting documentation as is required by the current policy.

Implementation Date:

June 1, 2011

Responsible Auditee:

Robert A. Richman, Director of Facilities Planning

Compliance with Construction Manager Bidding Procedures (FP Policy & Procedure #5)

According to Facilities Planning Policy & Procedure #5 – *Construction Manager Bidding Procedures*, the Project Manager (FAU Representative) is required to attend bid openings for all trade work bid packages for all CM projects and sign (witness) the bid tabulation sheet. Also, the Project Manager is required to arrange for the Architect / Engineer (A/E) of record to attend bid openings. Bid tabulation sheets are to be signed by all appropriate representatives (bid opener, A/E, CM, & FAU representative). In addition, the University is required to obtain trade contract award recommendation letters for each bid package from the CM which states the basis of selection of contractors, and have been approved and countersigned by the A/E of record.

Our review of bid tabulation sheets and CM letters of recommendation for award of subcontracts for our three sampled projects yielded the following results:

Exception Type	BT-616, College of Engineering & Science	BT-668, Recreation Center Expansion
<i>Award Recommendation Letter</i> was not approved and countersigned by the A/E of record.	100% of 56 bid packages reviewed	100% of 36 bid packages reviewed
The successful trade subcontractor for the bid package was not indicated on the <i>FAU Bid Tabulation Sheet</i> .	One instance for 56 of the bid packages reviewed	No exceptions
<i>FAU Bid Tabulation Sheet</i> was not signed by the A/E of record.	No exceptions	23 of 36 (64%) bid packages reviewed
<i>FAU Bid Tabulation Sheet</i> was not signed by the FAU Representative.	No exceptions	5 of 36 (14%) bid packages reviewed

Note: No bidding exceptions were noted for project BT-678, College of Arts & Letters Culture/Society Bldg.

Recommendation No. 2

We recommend that Facilities Planning enforce current policies and procedures related to the construction bidding process to ensure that all bid tabulation sheets are consistently signed by the FAU Representative and the A/E of record. In addition, the CM trade contract award recommendation letters should be countersigned by the A/E of record and the successful trade subcontractors for the bid packages should be noted on all bid tabulation sheets. Adherence to FP Policy and Procedure #5 will serve to document that all project trade work has been subject to competitive bidding as required by established University policies and procedures, and the CM agreement.

Management's Response

Action Plan:

Facilities Planning will redouble efforts to assure that Policy & Procedure #5, Construction Manager Bidding Procedures, is strictly followed and enforced. Specifically, all Bid Tabs are to be signed by both the FAU project manager and the representative for the AE of record on the project. In addition, the FAU project manager will assure that the CM provides the respective letter of recommendation for the award of each bid package and that the letter recommending the award be reviewed and signed by the AE of record that he concurs that the award is appropriate and in the best interest of the University. The Director will provide additional training to the project managers on this issue.

Implementation Date:

June 1, 2011

Responsible Auditee:

Robert A. Richman, Director of Facilities Planning

Prior Audit Recommendations

Our examination generally includes a follow-up on findings and recommendations of prior internal audits, where the subjects of such findings are applicable to the scope of the current audit being performed.

All recommendations from the prior audit of construction were subsequently found to be effectively implemented during the course of cyclical audit follow-up procedures routinely performed for recommendations issued by our office.

CONCLUSION

For the three projects examined, we found no evidence to indicate material non-compliance with the stated objectives of the audit. Notwithstanding this assessment, we have made three recommendations for Facilities Planning to improve its practices with respect to adherence to its operating policies and procedures covering review and approval of CM invoices for major projects, and compliance with established CM bidding procedures.

We wish to thank the staff of Facilities Planning for their cooperation and assistance which contributed to the successful completion of this audit.



Morley Barnett, CPA, CFE
Inspector General

Audit Performed By: Ben Robbins, CPA