Biomedical Sciences Partnership Building Construction Contract

May 2019 **FY18 - #04**

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Summary

Our audit of the Biomedical Sciences Partnership Building (BSPB) construction contract was included in our approved Fiscal Year (FY) 2018 Audit Plan. The University of Arizona (Arizona) constructed the new building on the Phoenix Biomedical Campus (PBC) with a total construction phase Guaranteed Maximum Price (GMP) of $111.1 million. This construction project contributed to strategic goals to expand opportunities for education and research in the health care fields.

Construction projects have been identified as strategic, high-risk areas for the universities. Charges to the project may not comply with the negotiated contract, resulting in overcharges and cost overruns. Construction administration and project monitoring is provided by Planning, Design & Construction (PD&C). Since 2009, we have completed 15 audits of construction contracts administered by PD&C.

Background: The 10-story, 245,000-square-foot building is the most recent addition to the PBC UA College of Medicine-Phoenix. BSPB contributes to the collaborative environment for health sciences education and research with its close proximity to the Health Sciences Education Building (HSEB), the University of Arizona Cancer Center-Phoenix, Arizona Biomedical Collaborative-1, T-Gen, and other educational and research facilities.[1] It is connected to the HSEB by a walkway labeled the Grand Canyon.

The BSPB construction project is part of the $376 million PBC, Phase II project. One request for qualifications (RFQ) was issued, and the contract was awarded to DPR/Sundt (A Joint Venture). BSPB was built using the Construction Manager at Risk (CM@Risk) project delivery method. The contract and amendments included sub-projects for HSEB, HSEB Shell Space, Vivarium, and BSPB.[2]

At its September 2014 meeting, ABOR granted Project Approval for BSPB at $136.1 million. The project was financed with Stimulus Plan for Economic and Educational Development (SPEED) Revenue Bonds to be paid over approximately 30 years from State lottery funds and university local funds.

[1] ABOR Business and Finance Committee Meeting Minutes, June 4, 2014.
[2] Separate GMP and design documents were prepared for each sub-project and each audited separately by Internal Audit.

The contract with DPR/Sundt included pre-construction design phase services as well as construction phase management, including coordinating all subcontracted work. The BSPB project included pre-construction costs of $1.7 million and construction phase costs of $111.1 million, for a total of $112.8 million. See the chart below for details:

GMP Description	Amount
Initial Pre-Construction Phase Fee	$765,489
Amendments 12 and *15*	890,828
Final Pre-Construction Phase Fee	**$1,656,317**
Initial Construction Phase GMP	$12,355,796
Amendments 14 through 16 and *Change Orders 13, and 15 through 31*	98,781,811
Construction Phase GMP covered by this audit	**$111,137,607**
Total Pre-Construction and Construction GMP	**$112,793,924**

The Notice to Proceed was issued December 23, 2014, and construction work began on January 5, 2015. The contract and subsequent amendments called for substantial completion by January 17, 2017. PD&C was satisfied with the quality of the work and issued a Certificate of Substantial Completion dated January 17, 2017.

PD&C achieved a United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) Silver Certification, indicating that the building was designed to have lower operating costs, reduce waste, conserve energy and water, and to create healthy and productive work environments.

The original PBC contract was negotiated and signed prior to implementation of the Tri-University standard construction contract. Therefore, the contract included provisions for fixed-fee general conditions and requirements for the base contract. As such, the contractor is entitled to the entire fixed fee stated in the contract, regardless of actual expenditures. The revised Tri-University standard construction contract eliminated this option, allowing for more auditable contracts that would help ensure the university gets value for dollars spent.

Audit Objectives: To determine whether financial transactions relating to construction activity for the BSPB project complied with the terms of the contract, including whether:

- change orders were priced according to the contract terms and were properly approved;
- change orders represented an actual change in scope;
- procedures were in place to monitor receipt, quality, and use of significant material purchases;
- contingency funds were managed in accordance with contract requirements; and
- opportunities for process improvements exist.

Scope: Our audit included construction phase expenses paid to DPR/Sundt from February 2015 through October 2018. This included *Change Orders 13* and *15* through *31*.[3]

We relied on PD&C's expertise for the construction technical aspects and, therefore, our scope of work did not include any on-site inspections to assess construction methods, materials, or compliance with design specifications. We also did not include any costs associated with the project that were not part of the CM@Risk contract, including architectural fees or PD&C internal costs.

Methodology: Our audit objectives were accomplished through:

- preparing a control schedule of the initial GMP, change orders, and payment applications;
- reconciling payments made to the CM@Risk against a control schedule of CM@Risk applications for payment;
- examining supporting documentation for 5 (28%) of 18 judgmentally selected sample change orders, totaling $5,965,486, to ensure the amounts agreed to subcontractor quotes, changes were reasonable and approved, and indirect costs were accurately calculated;
- reviewing the remaining change orders for the subcontractor with the majority of change order errors found in the original sample;
- consulting with construction contract auditing firms regarding general condition costs on subcontractor change orders;
- judgmentally selecting 9 (50%) of 18 change orders, totaling $6,235,140, based on descriptions in the *Exhibit A*, *Change Order Request Summary*, and reviewing supporting documentation to ensure change orders represented an actual change in scope;

[3] *Change Order 14* applied to Northern Arizona University. An additional change order is anticipated to finalize and close out the project.

- examining contract documents to determine if there were any significant material purchases and, if so, whether procedures were in place to test and inspect the materials; and
- reviewing CM@Risk contingency fund expenditures to ensure that all uses of the contingency fund were made in accordance with the contract.

Conclusions: Based on our audit work, we found that the financial transactions related to construction activity by PD&C and DPR/Sundt generally complied with the terms of the contract. Specifically, change orders represented actual changes in scope, and procedures for significant material purchases were sufficient. However, we identified contract monitoring issues related to change order pricing and contingency fund expenditures that resulted in a potential $208,471 overpayment to the CM@Risk. The overpayment consisted of $151,220 in unsubstantiated costs and errors, $43,782 in excess change order fees, and $13,469 in contingency fund errors. These issues are detailed on pages 6 through 10.

According to the Institute of Internal Auditors International Professional Practices Framework, an organization is expected to establish and maintain effective risk management and control processes. These control processes are expected to ensure, among other things, that:

- the organization's strategic objectives are achieved;
- financial and operational information is reliable and possesses integrity;
- operations are performed efficiently and achieve established objectives;
- assets are safeguarded; and
- actions and decisions of the organization are in compliance with laws, regulations, and contracts.

Our assessment of these control objectives as they relate to the BSPB construction contract is on the following page.

General Control Objectives	Control Environment	Audit Result No.	Audit Result Page
Achievement of the Organization's Strategic Objectives			
• Strategic objectives were met by providing state-of-the-art facilities that help Arizona achieve its educational and research goals.	Reasonable to Strong Controls in Place		
Reliability and Integrity of Financial and Operational Information			
• *Change Orders* were priced according to the contract terms and were properly approved.	Opportunity for Improvement	1, 2	6, 8
Effectiveness and Efficiency of Operations			
• The contracted scope of work was provided, including acceptance of alternates via contract incorporation and/or adjustment of allowances to actual costs.	Reasonable to Strong Controls in Place		
• Contingency funds were managed in accordance with contract requirements.	Opportunity for Improvement	3	9
Safeguarding of Assets			
• Material purchase procedures were in place to monitor receipt, quality, and use of significant material purchases.	Reasonable to Strong Controls in Place		
Compliance with Laws and Regulations			
• The CM@Risk contractor selection process was in accordance with the ABOR procurement code policy.	Reasonable to Strong Controls in Place		

We appreciate the assistance of PD&C and DPR/Sundt representatives during the audit.

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Audit Results, Recommendations, and Responses

1. Change orders contained unsubstantiated costs and errors.

Condition: We reviewed 5 of 18 owner change orders and identified $18,057 in pricing errors and $101,299 in unsubstantiated costs. Specifically, we identified $716 in miscellaneous errors, an allowance reconciliation discrepancy of $9,069, and one change order that did not apply a required deduction of $8,272 for self-insurance. The subcontractor costs totaling $101,299 exceeded the contract guideline of NTE 10% for subcontractor overhead and general conditions. These issues resulted in a total of $119,356 for the initial sample.

Because the majority of identified change order issues was due to one subcontractor consistently charging for general conditions costs that are typically covered by the NTE 10% general conditions fee, we expanded our sample and examined the remaining change orders for this subcontractor. This review resulted in an additional $31,864, bringing total change order pricing issues to $151,220, excluding CM@Risk fees and taxes.

Criteria: Paragraph 10.4.1.B(4) of the contract states, "As a guideline, the following overhead, general conditions and fee percentages shall be utilized, unless otherwise established in the Agreement, or otherwise mutually agreed upon and documented in the change order description:

> "Subcontractor Fee (profit): 5%
> Subcontractor Overhead & General Conditions, NTE: 10%
> Total Subcontractor Markups, NTE: 15%
> CM@Risk Fee (profit), approximately or as per CM@Risk Agreement: 5%[4]
> CM@Risk Overhead & General Conditions, NTE or as per CM@Risk Agreement: 5%
> Total CM@Risk Markups, NTE: 10%"

According to the *CSI MasterFormat* and the National Association of Construction Auditors, general conditions costs typically include, as a minimum, temporary utilities/fire protection/ fencing, temporary office trailers, dumpsters, clean up, barricades, traffic control, small tools & consumables, job office supplies, and safety expenses. It also includes, but is not limited to, general requirements expenses such as project superintendent, project manager, safety manager, project scheduler, and QA/QC manager.

Cause: PD&C processes did not require documentation when general conditions costs exceeded the contract guideline of NTE 10%.

[4] According to Amendment 15's Exhibit C, the CM@Risk change order fee for this contract is 4.95%.

Effect: Approving costs above the contract guideline without documented justification could cause the university to pay more than necessary for change order work.

Recommendations:

PD&C should:

1. Initiate a deductive change order to recoup the $151,220. Because audit sampled only 5 change orders, PD&C should review the remaining 13 change orders for similar issues.

2. Develop a process to ensure change orders contain accurate and allowable charges, to include a detailed explanation when additional general conditions costs are required beyond the contractually established guideline of NTE 10% general conditions fee. The process could also include review of daily logs or time reports to ensure extra costs were actually incurred.

3. Consider working with the Tri-University Standard Construction Contract Committee to define general conditions and general requirements within the Tri-University standard construction contract.

Management Response:

Target Implementation Date: December 31, 2019.

PD&C will seek reimbursement of the disputed $716 in miscellaneous errors. The $9,069 allowance and the $8,272 of deduction for self-insurance will be returned to the owner through a deductive change order in the final project reconciliation.

Target Implementation Date: October 25, 2019.

Regarding the 10% guideline, the project manager was aware of all project charges documented in the change order descriptions and deemed them fair and reasonable given the extensive impact of the changes and the fast-track nature of the project delivery. The contract language allows for manager discretion in evaluating general conditions cost over 10% due to this type of extenuating project site circumstances. PD&C does, however, concur with the auditor’s recommendation #2 and will work on revising procedures to clarify and more fully document when GCs and fees above 10% are needed and justified for successful project completion.

2. Change order fees exceeded the contractually established cap on total fee amounts allowed.

Condition: Combined Profit, Overhead and General Conditions fees exceeded the contractually established 25% fee cap by a total of $43,782 in three of the five sample change orders reviewed. The issue of combined fees exceeding the contractual cap was noted in previous audits. Because the 25% cap was deemed by the Tri-University Standard Construction Contract Committee to be unachievable, the standard construction contract was revised in January 2015 (ten months before the first BSPB change order was executed) to increase the cap from 25% to 27%. However, no action was taken to amend the BSPB contract to the more achievable 27%; nor did PD&C take action to remediate when fees were noted to exceed the contractually established 25% cap.

Criteria: Paragraph 10.4.1.B(5) of the contract states, "This Agreement may include provisions for some situations where greater amounts of Overhead and General Conditions are needed to address extenuating site-related circumstances. However, the combined total fee, Profit, Overhead and General Conditions, including the CM@Risk and all levels or tiers of subcontractors, shall not exceed twenty-five percent (25%) of the total direct costs of materials, labor, rental equipment and subcontractor insurance and bonds."

Cause: The auditor was advised that PD&C managed the BSPB contract to align with the Tri-University standard construction contract revision of 27% for combined overhead and fee, but failed to issue the appropriate amendment revising the percentage.

Effect: Absent an executed amendment, amounts over 25% represent an overpayment.

Recommendation: PD&C should issue an amendment to the BSPB contract to update it to the revised Tri-University 27% language and confirm that the management practice was in compliance with the revised language.

Management Response: Target Implementation Date: October 31, 2019.

The BSPB project was managed to the current Tri-University contract language referenced below which allows, as a guideline, overhead and fees not exceeding 27%:

> "The Agreement may involve situations where larger amounts of Overhead and Construction General Conditions are needed to address extenuating site-related circumstances. However, as a guideline, the combined total Fee (including Profit and Overhead) and Construction General Conditions, including the CM@Risk and all levels or tiers of Subcontractors, shall generally not exceed twenty-seven percent (27%) of the total direct costs of materials, labor, rental equipment and Subcontractor insurance and bonds."

PD&C will issue an amendment to the contract to update the contract language and will validate that the total combined fees fall within the parameter of the amended contract language.

3. Contingency fund expenditures were not effectively tracked.

Condition: Contingency funds were not monitored to ensure advances for change order work were reimbursed to the Contingency line item after change order execution. As of May 2019, the Contingency line item was not fully reimbursed for the $527,052 advance that occurred in October 2015. We determined that, in March 2016, $511,508 was added to the Unallocated Procurement line item and $2,075 to the Contingency line item, leaving a $13,469 balance outstanding.

Criteria: Paragraph 7.14.1 of the original 2009 contract states, “The CM@Risk and the Owner acknowledge that the Guaranteed Maximum Price contains a line item for a "Bidding Contingency". The Bidding Contingency, upon approval of the Owner, shall be for the CM@Risk's use and shall be increased by amounts not expended on other line item bid packages and shall decrease by additional amounts required to be expended on other line item bid packages. Following completion of all sub-contractor contract execution (project buy-out), Bidding Contingency shall become Construction Contingency and CM@Risk may use this Construction Contingency for legitimate unforeseen construction expenses.

“CM@Risk shall submit detailed monthly reports indicating how the Construction Contingency was used, and the status of the Construction Contingency. The Owner has the authority to reject any use of the Construction Contingency after it has been submitted if the Owner believes in its good faith reasonable judgment that some or all of the amount included in the use of the Construction Contingency is not a legitimate expense. CM@Risk will credit the Construction Contingency amount back to the Owner in the subsequent billing. Any amounts remaining in Bidding/Construction Contingency at Final Completion shall be Savings and will be distributed per Section 7.1.1. Should the Bidding/Construction Contingency be exhausted prior to buyout of all the bid packages, any subsequent overruns in bid package costs shall be the CM@Risk's sole responsibility, with no additional compensation due from the Owner.”

Construction industry best business practices dictate that funds temporarily withdrawn from contingency pending approval of a change order should be returned to the contingency fund once the change order is approved and funded.

Cause: Contingency tracking procedures that were in place at the onset of the BSPB project were inadequate. The Phoenix Capital Projects Assistant Director has since implemented improved PD&C procedures.

Effect: Not fully refunding contingency once the change order was approved puts the university at risk to pay twice for the same work.

Recommendation: PD&C should coordinate with the CM@Risk to determine the outstanding balance owed to contingency and ensure it is included in the project's final reconciliation.

Management Response:

Target Implementation Date: December 31, 2019.

Payment for work is tracked and reviewed on a monthly basis along with supporting documentation for all subcontractor work. This existing process adequately guards against duplicate charges. Final reconciliation of contingency is also an existing PD&C process that is important for assuring the correct amount of project saving is returned to the owner. As part of the final reconciliation for the project – the contractor will reconcile all contingency dollars and credit back the contingency any funds as required prior to the close out of the project.

Target Implementation Date: October 29, 2019.

PD&C will provide additional training to project managers regarding the dollar-for-dollar reimbursement of contingency funds used temporarily for added scope items.

Addendum to the Biomedical Sciences Partnership Building Construction Contract Audit Report FY18 - #04

Recommendation: Planning, Design & Construction (PD&C) should work with Phoenix Biomedical Campus Capital Projects to provide oversight and assistance and to share new and updated policies, procedures, and best practices as they are implemented.

Management Response: The Biomedical Sciences Partnership Building was a very technical and large project managed, executed, and completed with a high degree of success – meeting or exceeding all of its budgetary, schedule, and programmatic goals. Its design is award winning, and what we received has exceeded expectations in every area.

PD&C Tucson is working with the Phoenix Project Management team and provides oversight and assistance – including sharing new and updated policies, procedures, and best practices as they are implemented. Here is a list of many of the support and assistance areas:

- A new Assistant Vice President (AVP) position for the Phoenix Biomedical Campus (PBC) was initiated last October and has since been active in improving coordination and communication between the Tucson and Phoenix teams which is strengthening consistency of policies, procedures, and implementation of best practices. This continues to improve.
- The Phoenix project manager is also an Assistant Director (AD) and receives a similar level of support as other Assistant Directors that are project managers on Main Tucson Campus. Opportunities for additional local administrative support are being sought to assist the PBC project manager with identifying potential calculation errors, application of contract percentages, and other consistency and compliance assistance. Meanwhile, additional remote support is being provided by PD&C Tucson.
- The Phoenix and Tucson project management teams regularly participate in PD&C "Project Perspective" meetings – this is where best practices and lessons learned are shared for all project management staff.
- PD&C Tucson provides Consultant and Contractor selection, negotiation and contracting support, resources and participation for all design and construction projects.
- PD&C Tucson provides an entire shared library of project management procedures, forms, process flows, and other resources.
- PD&C Tucson assists with and oversees all change orders, amendments, and contracts.
- P&DC Tucson reviews/approves contractor and consultant insurances, bonding, and budget/schedule reporting.
- PD&C Tucson provides line item project accounting oversight.
- PD&C Tucson provides engineering and code interpretation support.

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