

**UNIVERSITY OF CALIFORNIA, DAVIS
AUDIT AND MANAGEMENT ADVISORY SERVICES**

**Design and Construction Management
Construction Contracts
Audit and Management Advisory Services Project #15-04**

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MANAGEMENT SUMMARY

BACKGROUND

Design and Construction Management (DCM)'s mission is to deliver high-quality buildings, create new environments, improve infrastructure and transform existing facilities. Capital and Space Planning (CSP) is responsible for planning, oversight, and allocation of capital resources on the UCD campus. Capital project budget development is an iterative process that requires participation and approval of many stakeholders. Project's scope, program, planning and design are developed jointly by CSP and DCM, and approved by the Provost and Executive Vice Chancellor. DCM is responsible for the implementation of the Capital Improvement Program (CIP), with the budget reviewed and approved on an annual basis as part of the campus-wide process. DCM is headed by the Assistant Vice Chancellor-Campus Architect and consists of five units: Operations, Real Estate Service, Major Capital Projects, Minor Capital Projects and Campus Engineering.

UCD capital construction projects are reviewed and approved annually by the Regents, as part of the University of California (UC) 10-year Capital Financial Plan (CFP) covering all proposed capital construction and renovation projects. Budget adjustments to the CFP are made locally at each campus on an annual or as needed basis as part of the Capital Improvement Budget (CIB) process. Over the last decade, UCD has managed over \$1.6 billion¹ of both State and Non-State funded capital projects. Since 2009, the State funding for capital projects decreased from 33% to an average of 25% due in large part to a state budget deficit. UCD has received \$67 million in Proposition 1D² bond funds since 2009, accounting for nearly 10% of all UCD CIP funding sources over the last 5 years.

Major Capital construction projects involving buildings are managed by designated project managers reporting to the DCM Director of Project Management-Major Capital Projects. Policies and procedures are outlined in the UC Facilities Manual providing detailed guidance on policies, rules and requirements for construction management, including planning, design and development, contract bidding, change orders and fund management. DCM submits project statistics reports and coordinates any claims or litigation with the UC Office of the President (UCOP) Construction Services.

¹ Source: Capital Financial Plan 2014-2024

² Proposition 1D ("Prop 1D"), or the Kindergarten - University Public Education Facilities Bond Act of 2006 was passed by California voters and signed into law in May 2006 to "provide needed funding to relieve public school overcrowding and to repair older schools". Bond funds spending is restricted for repair and upgrade of the existing public college and university buildings and to build new classrooms to accommodate the growing student enrollment.

The DCM project management function is currently facilitated by an online electronic system, Project Information Systems Manager (PRISM). There is no real time interface between PRISM and the UCD financial system, Quali Financial System (KFS). DCM is in the process of acquiring a new project reporting system, Dynamics SL, with full transition from PRISM expected in fiscal year (FY) 2016.

PURPOSE AND SCOPE

The objective of this audit was to evaluate the adequacy and effectiveness of DCM controls over major capital construction projects, and to determine if DCM processes associated with construction projects help to ensure compliance with the applicable laws, contractual requirements, and University policies.

The King Hall Renovation and Expansion and the King Hall Enhancements projects (King Hall Project) were selected as the focus of our review based on the results of preliminary risk assessment considering factors such as project total cost, budget to actual variances, high volume of change orders and change in management. Additionally, due to the utilization of Proposition 1D funds in the project financing, the audit assessed compliance with the applicable laws and regulations pertaining to the state revenue bond financing requirements. At the direction of UCOP Ethics, Compliance and Audit Services, Construction audits conducted in FY 2015 were to address Proposition 1D compliance, where applicable.

Our audit work included interviewing DCM Management, conducting process walk-throughs, analyzing financial data, and conducting detail test work on the King Hall Project. We also sampled documentation for other projects completed between FY2011 and FY2014, as considered necessary, in order to enhance our understanding of DCM processes and practices.

CONCLUSION

Over the last decade, DCM has invested over \$1.6 billion in capital improvement projects. Many of the projects delivered by DCM are highly complex requiring unique engineering expertise and special project management skillset. UCD buildings and facilities utilize state-of the art engineering systems and are at the forefront of green building design. They contribute positively towards creating a cohesive and distinguished campus and transforming the existing facilities to advance the campus' mission of learning, discovery and engagement. Our audit found many good practices that were established to develop, design and deliver large scale major construction projects.

Our review of the King Hall Project found that DCM faced many unique challenges on the project, including:

- Financial constraints bringing the project to a halt caused by the State budget deficit and revenue bond funding freeze that resulted in over \$100,000 in compensating payments to the construction contractor in 2009;

- Stakeholder-initiated scope changes funded by donor funds, to support the UCD Leadership vision to transform UCD School of Law into a state-of-art educational center. Changes were approved through appropriate approval channels including the Project Advisory Committee, and the Chancellor's Committee on Planning and Design
- Negative cash flow between 2008 and 2011 due to lagging donation receipts;
- Changes in project management, including the Project Manager and project coordinators;

Significant delays in project completion due to design rework, scope augmentation and bid repackaging. The initial schedule showed planned completion in February 2010. King Hall Renovation phase (Phase I) was completed in June 2012, and King Hall Expansion phase (Phase II) was completed in 2014. Both projects had a notice of completion on file, with final accounting (final CIBs) pending approval in spring 2015.

DCM recognizes that the King Hall Project underwent a great many changes in scope, budget and schedule since its original inception in 2004, and the lessons learned on the project should have a positive impact on improving current practices. DCM management has demonstrated competencies in the following areas but also acknowledges the need to make improvements in:

- Project oversight and monitoring;
- Cost estimating and budget planning;
- Transparency of contracting practices;
- Change order management; and
- Documentation retention.

Our observations and recommendations are presented in the body of this report along with corresponding management corrective actions.

I. FINANCIAL BACKGROUND

The King Hall Renovation and Expansion, a design-bid-build project was first approved as part of the CIP in 2005, with the original CIB authorized for \$21.8 million, including \$17.9 million in Proposition 1D Bond Funds, and an anticipated completion date of February 2010. The Final Budget of \$34.7 million was approved in April 2011, and incorporated additional gifts and other campus funds. In 2009, a separate project, King Hall Enhancements, was opened to accommodate additional scope changes that were not included in the original renovation and expansion plans. As of January 2015, the King Hall Enhancements budget was \$4.25 million.

Key factors regarding the budget increases were as follows:

- The construction budget nearly doubled from \$15,735,000 in 2005 to \$27,718,000³ in 2014.
- The increased scope of construction required additional external architectural and engineering services, increasing related costs from \$1,442,000 planned in 2005, to \$3,191,000 in 2014.
- The increased scope of construction also required additional internal project management, engineering review, cost estimating and inspection services, increasing internal architectural and engineering costs from \$648,000 in 2005, to \$2,001,000 in 2014.
- While all budget augmentations were appropriately approved, between 2008 and 2011 the project showed overdrafts in the construction and professional services cost categories. This was primarily due to the time lag between the budget appropriations and the actual receipt of donor funds.
- To bridge the gap between the available, anticipated and actual revenues available in 2011, the School of Law entered into a \$4.8 million loan agreement to be repaid to the campus by 2018.
- In 2012, nearly \$700,000 in cost overruns due to scope enhancements on King Hall Renovation and Expansion project were transferred to the King Hall Enhancements project as the beginning project balance. As of January 2015, King Hall Enhancements project has a \$617,000 deficit pending further funding from campus to cover the overdrafts caused by lack of available donor funds.

³ Includes \$25.3 million in construction plus site clearance, utilities and site development costs. Total authorized project budget of \$34.7 million includes construction, utilities, consulting fees, internal architectural and engineering services, and contingencies.

- Total Change Orders for King Hall Phases I & II were approximately \$3.4 million, or 13.4% of \$25.3 million total authorized construction costs, which is slightly above the industry standard of 10%. Phase I included 80 approved Change Orders in the amount of \$2.1 million, while Phase II included 143 approved Change Orders in the amount of \$1.3 million. The balance of the budget augmentation increases of \$9.5 million were due to major project changes that were approved through the CIB process.

The overall increase in the King Hall Project budget was accompanied by an approximately 52,000 assignable square foot (sf) increase in the scope of the project, from approximately 33,000 assignable sf to 85,000 assignable sf. The total cost per assignable sf decreased from approximately \$600 to \$569 (20%), which is comparable to the range of building costs per assignable square foot of \$550 to \$650 for other similar UC projects completed in the same timeframe.

II. OBSERVATIONS, RECOMMENDATIONS, AND MANAGEMENT CORRECTIVE ACTIONS

A. Project Oversight and Monitoring

1. Integrity of Financial Data and Reports

The accuracy of financial data contained in PRISM and the related management reporting could be enhanced.

PRISM is currently the main data repository for tracking of financial and administrative data related to major construction projects managed by DCM. There is no automated interface between PRISM and the campus general ledger, the Kuali Financial System (KFS), and PRISM can only generate reports with a current “as of” date. Historical data comparing authorized budgets to actual performance is not available. Managers track project performance (including budget to actual) and prepare financial forecasts for projects in Excel spreadsheets. There is also no analytical data available in PRISM for the Major Construction Program, to review trends and aid in decision making. Additionally, we noted inconsistent budget to actual reporting between the PRISM and KFS records as follows:

- DCM project managers use CIB budget numbers recorded in PRISM as a baseline budget to monitor commitments of funds for the project and related project costs. The annual budget appropriations posted in KFS often differ from the total CIB budgets authorized for the duration of the project due to funding being released incrementally over the years. Although the budgets are managed to the total CIB authorizations, there are often discrepancies between the project budget documents maintained in KFS, PRISM and Excel spreadsheets, which creates a risk of inaccuracies and unauthorized spending. For example, KFS and PRISM do not consistently capture commitments and appropriations in the appropriate sub-account. The SUB5 consulting expenses and the SUB6 internal design work expenses appeared comingled. Additionally, KFS construction appropriation amounts differed from the PRISM data as reported in total under contingencies SUB9.

- In 2009, campus leadership approved new budget for a separate project, the King Hall Enhancements, to account for additional scope and enhancements that were not originally funded by the King Hall Renovation and Expansion project. The budget authorization included \$1.7 million in donor funds, of which only \$1.2 million materialized. Opening a new project in PRISM and KFS posed an accounting challenge to DCM because the design and construction work on both projects was performed by the same architect/engineer teams and contractors and the enhancements work was an integral part of the original scope. All expenses were charged to the original project, King Hall Renovation and Expansion, until the budget deficit of \$640,000 was transferred to the new King Hall Expansion project in July 2013.
- While the official budget per the CIB for the King Hall Expansion project was approved in June 2009, project activity occurring prior to the CIB approval date, including design work under a contract that was signed in August 2008, was charged to the project. UC Facilities Manual, Volume 3, Chapter 2 “*Consultant Selection*”ⁱ allows advertising for design professionals prior to full budget approval or approval to expend preliminary plan funds. However, awarding of the contract prior to ensuring that “funds are budgeted and available for the portion of the contractual commitment that becomes effective upon the execution of the agreement” is prohibited.
- For the King Hall project, we found examples where preliminary design and survey costs that were initially assigned unique accounts were not transferred to the applicable major capital project account for the final project financial reporting purposes.

Recommendations

- a. Establish processes to validate key operational and financial data.
- b. Ensure that commitments and appropriations are properly reconciled between PRISM and KFS records, and accurately reported by expense type category.
- c. Implement monthly reporting to by project managers to DCM Management on budget shortfalls and transfers of over a set amount between projects.
- d. Coordinate with CSP to develop a procedure to ensure that work doesn’t start prior to the necessary budget approvals.
- e. Coordinate with CSP to develop an issue resolution procedure outlining the course of action under the circumstance of a deficit spending. The procedure should define a communication plan, including notification to DCM Contracts and Accounting.
- f. Ensure that all project costs reported under various project numbers are included in the final accounting report to DCM Management. This may be achieved developing reports covering all major construction projects, i.e. “program-wide” vs “project-based”.

- g. As DCM transitions to a new project reporting system, ensure the new system can deliver the necessary management reports to provide for effective monitoring and oversight of the capital construction program.

Management Corrective Actions

1. By (4/15/16) DCM Management will establish processes to validate key operational and financial data.
2. By (12/15/15) DCM Management will ensure that commitments and appropriations are properly reconciled between PRISM and KFS records, and accurately reported by category.
3. DCM Management has already initiated and will continue its new practice of the monthly reporting to DCM Management on budget shortfalls and transfers of over \$100,000 between projects.
4. By (12/15/15) DCM Management and CSP will coordinate to develop a procedure to ensure that work doesn't start prior to the necessary budget approvals.
5. By (12/15/15) DCM Management and CSP will coordinate to develop an issue resolution procedure outlining the course of action under the circumstance of a deficit spending. The procedure will define a communication plan, including notification to DCM Contracts and Accounting.
6. By (4/15/16) DCM will explore online system capabilities to generate reports capturing program-wide performance. These system requirements will be defined as part of the new system implementation process.

2. Performance Metrics

Routine automated management reports showing performance metrics across multiple projects are not currently available.

DCM currently relies on various automated and manual processes to track and capture project performance such as project budgets, schedules by phase, cost data, contractor activity and financial results. PRISM (Project Information Systems Manager) is currently being used as the main data repository for tracking project administration, as well as financial activity. However, the system lacks functionality to generate comprehensive reports to show historic activity. While the data is available using various "drill down" options in PRISM and in Access databases, currently DCM does not have a monthly automated reporting process on the following metrics:

- Cost overruns and funding availability;
- Project milestones and schedules;
- Design changes by customer/client;
- Change orders by type and requestor/source;

- Contract amendments;
- Bid analyses; and,
- Funding status.

Over the 9 years of project activity, the King Hall Project went through hundreds of incremental scope changes, timeline and budget adjustments. However, such information was not easily available for analysis through the electronic sources. The changes that occurred on the project could not be easily traced through the system as the information was not organized by detail and category.

Enhancing performance metrics reporting processes will improve DCM's ability to monitor and provide oversight. Best industry practices suggest incorporating performance metrics reporting as part of the daily management processes, including real time data recording and instant access reporting systems.

Recommendations

In light of DCM's transition to a new project reporting system, DCM should evaluate its potential to capture critical project management performance metrics to improve monitoring and oversight of projects, or identify alternative means for tracking such metrics.

Management Corrective Actions

By (4/15/16) DCM will identify the critical project management performance metrics, and ensure the new system can capture and report on those metrics, or that the metrics are provided via alternative means.

3. Structure for Improving Transparency, Accountability and Quality

The project delivery process requires better defined roles, responsibilities, policies and procedures, including a clearly articulated quality management program.

Throughout our review, several recurring themes emerged related to project planning, changes in project scope, reporting and documentation that appeared symptomatic of the underlying need to develop a better structure to ensure ongoing quality management and allow for more transparency and accountability. Specifically, we identified the need to expand the existing DCM policies and procedures into a more comprehensive set of policies and procedures that better define the roles and responsibilities of the key project stakeholders and ensure that DCM has a well-functioning quality management program in place. DCM quality control practices appear to be imbedded in the overall project delivery processes. However, the actual quality control procedures, including reviews, approvals, documentation and reporting requirements are not well defined or consistently applied. Specific examples of the procedure gaps are detailed in Sections B-F of this report.

The UC Facilities Manual, Volume 1, Chapter 7, “*University Administration-Project Quality Management Program*”, specifies that each campus should maintain a sufficient project quality management program and states that the basic step is “to formulate written requirements that specify the roles and responsibilities of project participants”, to ensure quality verification processes are in place.

Recommendations

- a. Enhance the existing DCM project delivery guides to incorporate a comprehensive set of policies and procedures defining the roles and responsibilities of key project stakeholders. The policies should include purpose, responsible parties, reporting relationship between the parties and reporting requirements.
- b. Ensure that the Quality Management Program procedures are documented as required by UC Facilities Manual and are consistently applied.

Management Corrective Actions

1. By (12/15/15) DCM and CSP will coordinate to enhance the existing DCM project delivery guides to incorporate a comprehensive set of policies and procedures defining the roles and responsibilities of key project stakeholders. The policies and procedures will include purpose, responsible parties, reporting relationship between the parties and the reporting requirements.
2. By (12/15/15) DCM will ensure that the Quality Management Program procedures are documented as required by UC Facilities Manual and will develop a process to ensure the quality control procedures are consistently applied.

B. Budget Revisions

There was an insufficient level of support to substantiate budget revisions.

Major capital project budgets are developed as part of a complex iterative process that requires various levels of stakeholders review and approvals, including the Provost and Executive Vice Chancellor and the Chancellor’s Committee on Planning and Design. DCM coordinates closely with CSP to establish the Project Planning Guide (PPG) which formally defines the scope, schedule and overall budget for each major capital improvement project. The project CIB contains detailed budget information by cost category. Major capital projects up to \$60 million can be approved by the Chancellor for budget, design, and appointment of the executive architect. Projects over \$60 million require Regents approval of budget and design.

The King Hall Renovation and Expansion project went through seven budget augmentations which were formally documented in CIBs, with the original budget increasing from \$21.8 million to \$34.7 million in 2011. While the CIB changes were consistent with the approved budget augmentations, our review of supporting documentation for revised estimates underlying the augmentations found inconsistent and missing information that precluded a clear delineation of design changes that resulted in cost variances. Without proper documentation of cost changes, DCM is not able to demonstrate that adequate review processes were in place to manage the changes.

Recommendation

Formalize processes and procedures to ensure sufficient documentation exists in support of the budget document revisions.

Management Corrective Actions

By (4/1/16), DCM will incorporate the documentation and retention processes as part of Observation F below.

C. Cost Estimation

1. Cost Estimation Process

DCM could not demonstrate adherence to the process to ensure the best estimates were identified and cost assumptions appropriately reviewed and verified.

The budget for construction is typically established and approved at the end of the programming phase prior to the start of the design phase. In the case of complex renovation projects, it may be necessary to complete the schematic design phase in order to establish an appropriate construction budget. Construction cost estimates are required, reviewed and updated during the design process. When the design is 100% complete, the construction documents reflect project cost estimates that are released by UCD in advertising for bid. If the lowest responsible bid exceeds the budget established in the CIB, DCM is required to determine the reasons for variance and perform redesign and cost cutting, including value engineering, materials substitution and other measures.

On the King Hall Renovation and Expansion project, construction bids were advertised in two phases, in 2008 and in 2010. In both instances, we noted significant deviations between the UCD estimate and the contractor bids. In 2008, bids came back on average 20% lower than UCD estimate; and in 2011, the bids were on average 50% higher than anticipated. As a result of contractor bids being significantly greater than UCD estimate in 2011, a budget augmentation of \$2.27 million, or nearly 15% of the total original budget, was needed and approved.

Our review of the reasons behind significant fluctuations between original estimates and actual bids identified poor documentation in support of the cost estimation development and review processes. Specifically:

- There was no documentation in support of the reconciliation between the two independent cost reviews (as required by UC policies);
- There was no explanation of assumptions behind the market conditions analyses and the resulting cost implications;
- There was no design review log to show a logical flow of changes from one stage to the next, including documentation of issue resolutions along with the resulting changes to project costs; and
- We could not determine who reviewed and approved the final estimates.

Without processes to ensure accurate budget estimates are reflected in CIBs, UCD may be at risk of not meeting its target goals for the campus facilities, including the scope and quality considerations. In addition, best practices suggest that maintaining proper design review logs along with the cost updates is an important part of project management that helps mitigate potential litigation issues where contractors may claim defects not being addressed in the plans and agency failing to resolve the issues timely, and facilitate review and quality control procedures.

Recommendations

DCM should develop a process to ensure all cost estimation activities resulting in budget actions are sufficiently documented and properly retained.

Management Corrective Actions

DCM will develop processes to ensure the cost estimation development and review activity are sufficiently documented and properly retained by (12/15/15). The processes will include at a minimum, those issues identified in this observation.

2. DCM Cost Estimator Roles and Responsibilities

Roles and responsibilities for the cost estimator were not clearly defined.

To assist management with oversight of estimation processes, DCM employs a full time cost estimator who is responsible for providing quarterly market updates to project managers and advising DCM Management on construction market trends and assumptions used for cost estimates.

According to UC policy, throughout the project life cycle, the designer's cost estimates are required to be independently reviewed by a person who is not part of the designer's team, and who is independent from UCD. DCM typically hires an outside firm to conduct these reviews. In addition, the DCM cost estimator reviews the designer's estimate and the outside consultant's estimate, and provides an independent opinion and a reconciliation between the two.

For the projects we tested, there was no documentation of any reconciliation between cost estimates throughout the project lifecycle and no evidence that the appropriate parties performed the required reviews. DCM's cost estimator's input into the cost development and CIB preparation were not well documented. Without formalized procedures that clarify the role and responsibilities for documenting the cost estimation process, DCM cannot hold individuals accountable for the established processes.

Recommendations

DCM should enhance its existing procedures by clarifying the roles and responsibilities of the UCD cost estimator and incorporating description of reporting relationships and the applicable processes, and documentation requirements.

Management Corrective Actions

DCM will enhance its existing procedures by clarifying the roles and responsibilities of the UCD cost estimator and incorporating description of reporting relationships and the applicable processes, and documentation requirements by (12/15/15).

D. Contracting Transparency

Transparency within DCM contracting practices could be improved.

The selection process of design professionals on capital improvement projects is outlined in UC Facilities Manual, Volume 3, Chapter 2 "*Consultant Selection*". The Public Contract Code (PCC) mandates advertising on all contracts over \$100,000, including architectural and engineering services, though the design professional contracts are **exempt** from provisions of PCC 10510.4-10510.9 that prohibits contracting with the same consultant on the basis of their prior recommendation ("end product").

Generally, DCM practices allow for contracting with the same design firm for the duration of the entire project, from pre-design to construction. Typically, the pre-design phase starts with programming⁴ through a Professional Services Agreement (blanket agreement), with the goal to produce the Detailed Project Program (DPP), which is used in initial budget discussions.

Once the DPP has been accepted, the design process can continue with the same architectural firm through the use of the Executive Design Professional Agreement (EDPA), however advertising, and selection procedures must be followed prior to execution of this agreement.ⁱⁱ The product of this agreement results in the construction documents, and establishes the design firm oversight relationship for the project.

⁴ Programming defines the needs of the user. A project program serves not only as a basis for design and a source of information about a project, but frequently as a basis for seeking funding.

While overall DCM had established processes to follow the *UC Facilities Manual*, we found documentation lacking in several critical vendor selection and contract award areas which may pose a significant reputational risk to the organization, if processes are left unchanged. We noted the following issues within these processes:

- Initially, DCM utilized a blanket agreement with schematic design not to exceed \$200,000 for the programming phase. We found insufficient documentation was retained to support the decision to select the design consultant who was awarded the preliminary programming contract in 2004.
 - There was no process to guide the formation of the design consultant selection committee members;
 - DCM did not have a process in place to ensure that members on the evaluation committee did not have a conflict of interest in the firm being selected for the project; and
 - The selection and rating of the consultant's proposal was not based on the pre-determined criteria outlined in the Request for Proposal/ Request for Qualifications (RFP/RFQ), and thus appears subjective.
- DCM then used the EDPA to retain the same architectural firm to produce the construction documents, and act as the Executive Design Professional team for the King Hall Project. Again, we could not locate documentation to support the advertisement and selection process was completed in support of this agreement.
- A follow-up contract was added for the same architectural firm to proceed with the King Hall Enhancements project, but we found no advertising or selection processes were performed in support of this project either.

Total costs for all contractual provisions to the original architectural firm selected under the blanket agreement were found to have escalated to over \$3.1 million by 2015.

Recommendations

DCM should develop processes to ensure their contracting practices within the design phases comply with UC policy to include the following:

- a. Develop a process to guide the formation of the design consultant selection committee.
- b. Establish protocols to require Evaluation Committee members to sign a conflict of interest independence form in the contractor selection process.
- c. Ensure that projects over \$100,000 go through the competitive procurement process.
- d. Ensure that RFP evaluations are based on pre-determined criteria as written in the RFPs.

- e. Document and retain scoring sheets, interview results and evaluation forms in the RFP files.

Management Corrective Actions

1. DCM will develop a process to guide the formation of the design consultant selection committee by (12/15/15).
2. DCM will establish protocols to require Evaluation Committee members to sign a conflict of interest independence form in the contractor selection process by (12/15/15).
3. DCM will ensure that projects over \$100,000 go through the competitive procurement process by (12/15/15).
4. DCM will ensure that RFP evaluations are based on pre-determined criteria as written in the RFPs by (12/15/15).
5. DCM will document and retain scoring sheets, interview results and evaluation forms in the RFP files by (12/15/15).

E. Construction Management

1. Change Order Management

a. Lack of Change Order Support

The level of detailed documentation in support of change orders was not sufficient.

As part of our testing work over Change Orders, we selected a sample of two Change Orders from Phase I of the King Hall Project, and four Change Orders from Phase II, to review for appropriate approvals, allowable costs, and adherence to policy. We learned that DCM utilized an external consultant to audit the related cost proposals⁵ for Phase I when total costs were greater than \$10,000. For the two cost proposals for Phase I, which originally totaled \$492,000, the consultant identified approximately \$140,000 in unallowable costs; approximately \$80,000 on one, and \$60,000 on the other. For the Phase II, the Project Manager assumed responsibility for the review of the cost proposals, and from the review of four proposals totaling \$284,000, there were no unallowable costs identified by the Project Manager.

⁵ Cost proposals are submitted by the contractor in support of the costs they incurred performing the extra work ordered, or for the estimated cost of the work that is being requested to be performed.

We noted that Phase I cost proposals included a sufficient level of detail supporting documentation upon which the external consultant performed his review. The Phase II proposals, in some instances, were lacking key summary documents and detailed supporting documentation. With, or without detailed supporting documentation, if the PM evaluates the proposal for reasonableness and determines the cost of the proposal is overstated based on his own experience and resources, he has the authority to reduce and approve the revised costs of the proposal, which then becomes the fully executed change order.⁶ Only fully executed and approved change orders can be included in payments to the contractor.

Although the contract terms require that the contractor provide supporting documentation for cost proposals when requested by the Project Managerⁱⁱⁱ, or for Actual Cost plus Fee change order^{iv} when the extra work was performed, this did not happen on a consistent basis. We identified two underlying issues that contributed to this condition:

1. For the proposals reviewed, the Project Manager purportedly used a basic worksheet to evaluate the cost proposals, but the worksheet and the detailed cost proposal support were not retained within the project files.
2. Though the Project Manager has the authority to request additional detailed documentation in support of the cost proposal, on occasion, the contractor fails, or refuses, to provide the support requested, in which cases the Project Manager (PM) may decide not to pursue obtaining the requested documentation and instead determines the reasonableness of the cost proposal based on his experience and other pricing methods.

To determine if the four cost proposals reviewed for Phase II were representative of the population, AMAS also reviewed an additional seven cost proposals for Phase II of the King Hall Project totaling an additional \$351,000 and noted that the Project Manager had approved costs equal to what was submitted on the cost proposals, which is an indication that no unallowable costs were identified⁷.

⁶ If the contractor disagrees with the Project Manager's reduction of the cost proposal, the contractor has means within the contract's general terms and conditions to argue the reduction.

⁷ We noted that four of the eleven cost proposals had cost proposal revisions submitted by the contractor. However, the revisions appeared to be related to changes in Field Orders or Bulletins reflecting a change in work, and not due to unallowable costs.

It is important that the Project Manager follow-through to obtain and review supporting documentation for cost proposals in order to perform a sufficient review. Risk is present that even with the Project Manager's best estimate of reasonableness, we could be paying the contractor more than the actual cost of the activity. Additionally, the contractor ignoring requests for and/or refusing to provide supporting documentation may be an indicator of problems with the cost proposal. The contractor may receive rebates that are due to the University, may use materials that would not normally be approved, or use other cost cutting techniques that drain funding resources from the University. In addition, the contractor gains confidence in their ability to bypass the contract's terms and conditions and may become more progressive in including unallowable costs in future change order cost proposals.

b. Unallowable Bond Charges above the 2% Maximum.

Insurance and bond costs were paid to the contractor that exceeded the 2% maximum threshold allowed by the contractual terms and conditions.

Three out of the four change orders reviewed for the Phase II of the King Hall Project included payments to lower level subcontractors. We identified the routine charging of bond payments at 4%, by the Prime Contractor when lower level subcontractors were used, which is double the maximum amount of 2%.^v The total unallowable payments for the three cost proposals reviewed totaled \$3,503. This dollar amount represented 1.24% of the total dollars for all four proposals. Total change orders approved for Phase II were \$1,268,850. As this overcharging was consistently included in cost proposals where the Prime Contractor included subcontractor costs, there is the potential for approximately \$16,000 in excess payments based on the overcharging of allowable bond costs.

To determine if this error might exist within other projects besides the King Hall Project, AMAS reviewed seven other projects, which included two other ID Bond projects, and reviewed a total sample of 15 randomly selected cost proposals throughout the seven projects. We determined that the bond issue appeared to be isolated to the King Hall Project, Phase II, only.

Recommendations

- a. DCM should develop a process to ensure sufficient detailed support is provided with the cost proposals in accordance with policy.
- b. DCM should identify methods of ensuring cost proposals receive sufficient review for unallowable costs prior to approval.
- c. DCM should develop a process to ensure the Contractor provides documentation when requested to do so.

- d. DCM should review all change orders submitted by the Phase II contractor to identify the total unallowable insurance and bonds overpayments, and request the excess payments be returned by the contractor.

Management Corrective Actions

1. By (12/15/15), Project Managers will ensure detailed supporting documentation is attached to cost proposals when they are based on the Actual Cost Plus Contractor Fee method of costing, or when needed to determine the reasonableness of the costs presented.
2. DCM will consider the more frequent use of external consultants to audit cost proposals on all projects using a risk based approach such as dollar thresholds by (12/15/15). This will aid not only with the review for unallowable costs, but also provide the benefit of acting as the intermediary between the PM and the Contractor.
3. DCM will develop a procedure by (12/15/15) to allow the ability for the Project Manager to elevate to the Director of Capital Projects if the Contractor fails to respond to a Project Manager request for further support.
4. If approved by UCOP Office of the General Counsel, DCM will review all change orders submitted by the Phase II contractor to identify the total unallowable insurance and bonds overpayments, and request the excess payments be returned by the contractor by (12/15/15).

2. Contractor Payment Processing

a. Incomplete Contractor Application for Payments

Our testing disclosed two incomplete Application for Payments that had been approved for payment.

In our review of the contractor payment processing cycle, we selected a sample of two Applications for Payments from Phase I, and two others from Phase II, to review for appropriate approvals and adherence to policy. According to the contract's General Terms & Conditions Article 9.3 "*Application for Payment*"- the contractor is required to submit a monthly request for payment using the Application for Payment form, which not only supports the progress payment based on percentage of work completed, but also payments for additional work based on fully executed Change Orders.

As part of the process, once the Application for Payment has been approved by the Project Manager, the Project Coordinator sets up the payment for processing with the Accounting Unit.

We found that both Application for Payments reviewed for Phase I did not include the completed “Change Order Summary” section, even though there were change order costs included in the payment totals as evidenced in the attached Cost Breakdown schedule. The “Change Order Summary” section identifies change orders that are included in the Application for Payment and should only be listed for payment if fully executed.

There is a risk that by not completing this section, unauthorized, or non-executed Change Orders may be paid, even though the work has not been completed.

b. Non-related Project Costs

Non-related project activities and associated costs were included in the King Hall schedule of values and project files.

We found a total of approximately \$60,000 in change order costs not associated with the King Hall Project included in seven Application for Payments submitted by the contractor. These seven change orders represented work performed by the contractor for other projects on campus. Even though these change orders were included in the King Hall Project Cost Breakdown Sheet, which provides a running total of project costs, and the change orders and support stored in the King Hall project files, these costs were appropriately not charged to the King Hall project financial accounts.

We learned it is a DCM practice to use an onsite contractor to perform minor construction work for other projects on campus when needed. Instead of creating a separate construction project for the minor work, they incorporate the cost of the work into a change order that is then included in the contractor’s Application for Payment in their existing project.

Although this practice doesn’t affect the financial records for the project, the project’s records and files are not accurate or reflective of the actual work performed for the project. For instance, the Cost Breakdown Sheet used in progress payments is overinflated, and the project files include activities that truly belong in another project contributing to a lack of transparency for both projects and providing risk of errors during payment processing.

According to the UC Facilities Manual Volume 5, Chapter 11.1.3 “*Keeping a Project File*”^{vi}- maintaining the Project File is part of our administrative responsibility for the project, and this should be done methodically. In addition, only that work that is permanent and in place in accordance with the Contract Documents should be included in the Application for Payment.^{vii}

Recommendation

- a. The Project Manager, or the Project Coordinator as a backup, should ensure the required sections are completed on the Application for Payment, before approving the Certification for Payment.
- b. When the Prime Contractor is needed for non-related project work, DCM should develop a new process for accounting for and paying the contractor for this non-related work.

Management Corrective Actions

1. The Project Manager, and the Project Coordinator as a backup, will ensure the required sections are completed on the Application for Payment, before approving the Certification for Payment by (12/15/15).
2. DCM will discontinue including non-related campus work in the primary project of the contractor by (12/15/15).

3. Daily Inspector Reports Lacking Consistent Information

Inspector's Daily Reports were not consistently completed in the same level of detail, and did not always contain all of the information required by the Facilities Manual.

The Inspector's Daily Reports are recorded in PRISM using a system form to record the information. When reviewing the report contents, we noted some were minimal in content, sometimes a sentence or two, while others appeared to be more complete. The UC Facilities Manual Volume 5, Chapter 12 "*Responsibilities of the Inspector*"^{viii} - outlines the responsibilities of the project Inspector. Part of their activity is to prepare a daily report recording specific items outlined in a Daily Inspector's Log as provided in the Facilities Manual.

The current DCM practice is a departure from the Facilities Manual to record the project's daily activities. Although some of the information on the list above are captured in other forms, such as a notice of defective work, or historical weather conditions available online, we are missing some information that may provide a benefit, if needed. In addition, the practice is not compliant with the Facilities Manual. Risk is present that we may not be able to support at a sufficient level that we met our oversight responsibilities to monitor the day to day activities of the project.

Recommendation

DCM should adhere to the Facilities Manual and ensure sufficient information is recorded in the Inspector's Daily Report.

Management Corrective Actions

1. DCM will work with UCOP to update the Facilities Manual Daily Inspection Report Form by (12/15/15).
2. DCM will also develop a process to ensure more complete information is recorded in the Inspector's Daily Report. This will be incorporated in the document storage and retention processes to be developed and implemented within the recommendation for section F below, to be completed by (4/15/16).

F. Documentation and Retention Practices

We noted a lack of established processes and procedures that would provide consistency for project record keeping.

DCM currently uses an antiquated project management system, PRISM, with a replacement to a fully functional project management system scheduled for production in FY 2016. Historically, DCM has placed reliance on PRISM to house key project information, along with server folders designed with pre indexed subfolders to hold any additional key documentation. We learned that the DCM assigned Project Management Team: the Project Manager, Inspector and Project Coordinator, determine which documents to store, and how they will be stored based on their individual prefaces.

During our review we found required or sufficient supporting documentation could not be located when requested, and in some cases had possibly been destroyed due to inconsistent record storage and retention practices. We noted the following deficiencies:

- Inspection requests that were completed throughout the course of the project could not be located.
- Internal spreadsheets used in project management to record and analyze submitted cost proposals and resulting change orders, where either not retained after project completion, or not initiated and maintained.
- Certified payroll reports that were requested and received had been destroyed.^{ix}
- Missing or insufficient documentation in support of Cost Proposals, which reduces the assurance that a proper level of project management was provided.

In general, we do not have the supporting documentation retained to support that we met our oversight responsibilities, or that we adhered to policy and contractual terms.

Recommendation

DCM should develop processes to ensure appropriate documentation is retained to support that oversight responsibilities were met, and policy and contractual terms were adhered to.

Management Corrective Actions

To ensure the new project management system and the server file folders consistently house all appropriate documentation, by (4/15/16) DCM will:

1. Ensure all required documentation is stored and retained according to the Facilities Manual and UC record retention policies.
2. Perform a needs assessment and document classification review to identify:
 - Documentation that is required by policy or regulations,
 - Documentation that supports management's oversight, and
 - Documentation useful in the conduct of the project.
3. Develop processes and procedures to establish:
 - Who is responsible for acquiring and storing the documentation,
 - How and where the documentation will be stored,
 - Who will be responsible for quality control over document storage, and
 - Record retention policies for the documents stored.

ⁱ Facilities Manual, Volume 3, Chapter 2, “*Consultant Selection*” – The following conditions must be met before agreements are executed: (1) The design professional has been selected in accordance with the policies and guidelines described in volume FM3:2, and the final selection has been approved; (2) Funds are available for the portion of the contractual commitment that becomes effective upon the execution of the agreement.

ⁱⁱ Facilities Manual, Volume 3, Chapter 1.1.1, “*Predesign Phases*” - In the early project development phases, a Facility may need the services of a design professional for project analyses and feasibility. The Professional Services Agreement is used for these services.

If the same design professional is commissioned for project design, then the advertising, screening, and selection procedures must be followed (see Chapter 2) and an Executive Design Professional Agreement must be executed prior to the beginning of Schematic Design Phase.

ⁱⁱⁱ Contract General Terms and Conditions Article 4.2.3.3- Change Order Request - States that upon request of University’s Representative, Contractor shall submit such additional information as may be requested by the University’s Representative for the purpose of evaluating the Change Order Request.

^{iv} Contract General Terms and Conditions; Article 7.3.6 Change Order Procedures - As a condition to Contractor's right to an adjustment of the Contract Sum pursuant to 7.3.5.3, Contractor must keep daily detailed and accurate records itemizing each element of cost and shall provide substantiating records and documentation, including time cards and invoices. Such records and documentation shall be submitted to University's Representative on a daily basis. The General Terms and Conditions; Exhibit 7 – Cost Proposal also requires the attachment of supporting data to each “Supporting Documentation for the Cost Proposal Summary” to substantiate the individual listed costs.

^v Contract General Terms and Conditions Article 7.3.2.9- Change Order Procedures - The cost for Insurance and Bonds shall not exceed 2% of direct costs.

^{vi} Facilities Manual Volume 5, Chapter 11.1.3- “*Keeping a Project File*”, states that during contract administration, all contract documents, forms, correspondence, and other related records must become part of the Facility's project file.

^{vii} Contract, General Terms and Conditions – Article 9.3.1 Application for Payment; On or before the 10th day of the month or such other date as is established by the Contract Documents, Contractor shall submit to the University's Representative an itemized Application for Payment, for the cost of the Work in permanent place, as approved by the University's Representative, which has been completed in accordance with the Contract Documents, less amounts previously paid.

^{viii} Facilities Manual Volume 5, Chapter 12.2 “*Responsibilities of the Inspector*”- (5) Prepare a daily report recording:

- Inspector's time and activities on the project.
- Weather conditions.
- Nature and location of work being performed and by whom.
- Number of workers by trade.

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- Oral instructions and interpretations given by the design professional.
 - Specific observations on results of oral instructions and interpretations.
 - Any occurrence or work which might result in a claim for a change in the contract sum or contract time.
 - Names of visitors, their titles, and the time and purpose of their visit.
 - This report shall be prepared for each normal work day or for each day on which the contractor performs work, and a copy shall be promptly sent to the design professional and the University.

^{ix} Record Retention Policy 0008A2*: all construction documentation and items submitted by the contractor, both during and at the conclusion of the contract; including certified payrolls, inspection reports, claims, RFIs, change requests, lists of subcontractors and notifications of substitutions; in accordance with contract requirements; Official Record: Retain records for 5 years after the end of the fiscal year in which the bond matures, or 10 years after the end of the fiscal year following final completion of the project - whichever is longer.

<http://recordsretention.ucop.edu/index.php/du/retentionSchedules/recordCategory>