



UCSB Audit and Advisory Services

Internal Audit Report

Construction Closeout

April 27, 2018

Performed by:

Antonio Mañas-Melendez, Acting Associate Director

Irene Camargo, Senior Auditor

Stacy Stone, Audit Analyst

Approved by:

Kimberly Ray, Interim Audit Director

Report No. 08-18-0007

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AUDIT AND ADVISORY SERVICES
SANTA BARBARA, CALIFORNIA 93106-5140
Tel: (805) 893-2829
Fax: (805) 893-5423

April 27, 2018

To: **Distribution**

Re: **Construction Closeout
Audit Report No. 08-18-0007**

As part of the 2017-18 annual audit services plan, Audit and Advisory Services has completed an audit of construction closeout. Enclosed is the report detailing the results of our work.

The primary purpose of this audit was to assess the effectiveness of construction closeout processes regarding mandatory documentation, financial reporting, data retention, and business continuity. The scope of our review included construction closeout projects during fiscal year 2016-17.

Our work found that campus construction closeout processes are overall compliant with the UC Facilities Manual. However, we did identify a need to formalize a disaster recovery plan and to consult with the Office of General Counsel on best practices to retain official documentation.

Detailed observations and management corrective actions are included in the following sections of the report. The management corrective actions provided indicate that each audit observation was given thoughtful consideration, and positive measures have been taken or planned in order to implement the management corrective actions.

We greatly appreciate the assistance on this project provided by Design & Construction Services and Business & Financial Planning personnel. If you have any questions, please contact me.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Kimberly Ray".

Kimberly Ray
Interim Audit Director
Audit and Advisory Services

Enclosure

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Distribution:

Design, Facilities, & Safety Services

Renée Bahl, Associate Vice Chancellor

Julie Hendricks, Director, Design & Construction Services

Kerry Bierman, CFO/Director, Business & Financial Planning

Ed Schmittgen, Associate Director, Design & Construction Services

cc: Chancellor Henry Yang

Interim Vice Chancellor Administrative Services Joel Michaelsen

UCSB Audit Committee

Senior Vice President and Chief Compliance and Audit Officer Alexander Bustamante

PURPOSE

The primary purpose of this audit was to assess the effectiveness of campus construction closeout processes regarding mandatory documentation, financial reporting, data retention, and business continuity. This audit is part of the fiscal year 2017-18 audit services plan.

SCOPE, OBJECTIVES AND METHODOLOGY

The scope of our review included construction closeout projects during fiscal year 2016-17. The objective of our review was to determine whether Design & Construction Services (D&CS) has developed construction closeout processes that are consistent with University policies and regulation requirements regarding the following areas:

- Construction project documentation
- Certificate for Payment
- Financial reporting and reconciliation of expenses
- Data retention and business continuity

To accomplish our objectives, we:

- Researched and reviewed relevant University of California (UC) and University of California Santa Barbara (UCSB) audits and advisory work related to construction project closeouts. See Table 1.
- Researched and reviewed UC and UCSB policies, California state building codes, state and federal regulations, and other guidance relevant to the scope of the audit, including:
 - University of California Facilities Manual, Construction Services, *Contract Closeout*, Volume 5, Chapter 16 and 18 (UC Facilities Manual).
 - University of California Business and Finance Bulletin IS-3, *Electronic Information Security* (UC Policy IS-3).
 - California Code of Regulations, Title 24, *California Building Standards Code*, Part 2, Volume 2 of 2.
 - California State Codes, Civil Codes, *Notice of Completion*, Section 9204.
 - California Code of Regulations, Title 19, *Public Safety-California State Fire Marshal*, Division 1, Chapter 3.
 - University of California Santa Barbara, *Vision 2025 Physical Design Framework*, July 2010.¹
- Gained an understanding D&CS project closeout operations through interviews with key personnel and review of the department's business and financial processes.
- Performed a risk analysis that considered business and financial processes including construction closeout document policy management, financial processes, data retention, and fraud assessment.
- Tested a sample of construction closeout projects to determine whether support documentation complied with UC Facilities Manual, contract closeout policy provision,

¹ For more details see *UCSB Physical Design Framework* in the background section.

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by reviewing whether required documents were included in the following areas: As-built documents, operating and maintenance data, guarantees, final completion, notice of completion, final payment and release of retention, and stop notices (if applicable).

- Reviewed financial processes related to construction closeout procedures that included submission and approval of the Final Payment and Release of Retention and expenditures recorded in the general ledger.
- On a sample basis, reviewed construction closeout projects to ensure final payments were issued within 10 days after the Certificate of Payment was executed and if additional payments were recorded.
- Inquired whether there is a backup policy and disaster recovery plan as per UC Policy IS-3.

This audit was conducted in conformance with the *International Standards for the Professional Practice of Internal Auditing*.

BACKGROUND

University of California Office of the President (UCOP) provides support, policy, and contract guidance for campus capital programs and construction staff. UCOP provides campuses with innovative strategic options to deliver projects, manage costs, and mitigate project risks by advocating industry best practices and crafting complementary policies, procedures, guidelines, contract documents, and educational opportunities. UC and UCSB audit reports regarding construction can be found in Table 1.

Table 1 Relevant UC Audit and Advisory Reports		
Report Name	Year	Campus
Capital Programs Close-out Process	2012	UC Los Angeles
Construction Activities	2012	UC Santa Barbara
Construction Proposition 1D Funding	2013	UC Riverside
Facilities Management Design – Project Management	2013	UC Los Angeles
Construction Proposition 1D Funding	2013	UC Santa Barbara
Construction Proposition 1D Funding	2013	UC Riverside
Construction Change Orders	2014	UC San Diego
Capital Programs – Contract Management	2015	UC Los Angeles
Capital Construction	2015	Lawrence Berkeley National Laboratory
Hospital Administered Construction Projects	2016	UC Los Angeles
Capital Programs – Project Planning and Development	2017	UC Los Angeles
Construction Closeout Process	2017	Lawrence Berkeley National Laboratory

Source: Auditor analysis.

UCSB Physical Design Framework²

The UCSB Office of Budget and Planning, reporting to the Chancellor and Executive Vice Chancellor (EVC), brings forward major capital projects. The Chancellor, along with the Academic Senate, appoints the Design Review Committee, which is co-chaired by the Interim Vice Chancellor for Administrative Services and a member of the Academic Senate to ensure that each project is consistent with the Physical Design Framework. Following campus approvals, the Interim Vice Chancellor is responsible for the development of projects' preliminary plans, including schematic design and design development drawings, and contract documents necessary for estimating, bidding, and construction.

The Assistant Chancellor for Budget and Planning chairs the Campus Planning Committee, which meets monthly. The committee's objectives are to ensure that the campus:

- Designs and implements major capital projects (state and non-state) that are consistent with the UCSB Strategic Academic Plan and the UCSB 2010 Long Range Development Plan³ (LRPD) in a timely, efficient, and cost effective manner.
- Maximizes and optimizes the capital dollars available to UCSB from all sources.
- Establishes a clear understanding of the academic, budgetary, land use, environmental, and aesthetic impacts for each major capital project.

Design & Construction Services⁴

D&CS, under the direction of Associate Vice Chancellor of Design, Facilities, and Safety Services, is responsible for the delivery of University of California Santa Barbara's major and minor capital improvement program for the associated \$400 million capital and deferred maintenance programs. D&CS manages major and minor capital programs, and the contractual administrative oversight. See Table 2 for major capital projects.

Table 2		Major Capital Projects FY 2016-17	
Major Capital Construction Projects		Cost	
San Joaquin Apartments/Portola Dining Hall		\$169,266,282	
Bio-Engineering Building		\$81,844,505	
Infrastructure (Utility Renewal) Project		\$18,827,000	
Sedgwick Ranch House Renovation		\$1,827,628	
Jeff and Judy Henley Hall		\$29,855,700	
North Campus Open Space		\$7,889,883	

Source: DFSS Business and Financial Planning.

² Source: UC Santa Barbara, *Vision 2025 Physical Design Framework*, 2010.

³ Long Range Development Plan is a planning tool that will shape how the campus will develop to the year 2025.

⁴ Source: UCSB Administrative Services Division Annual Financial Report 2016-17.

UC Policy IS-3

The purpose of this bulletin is to establish guidelines for achieving appropriate protection of University electronic information resources and to identify roles and responsibilities at all levels in the UC system. The provisions in this bulletin apply to all University campuses and medical centers, UCOP, UC managed national laboratories, and other University locations regarding management of its information assets. The use of technology for records management is used for data retention requirements regulated by UC, UCSB policy, and state and federal regulations.

Prolog Management System

Prolog Management System (Prolog) is a construction project management computer application. Prolog brings project information together to support decision making. Prolog also assists to monitor and control construction projects, providing data on whether the project is performing on-time, on-budget, and with quality. Main functionalities include:

- Office and field management
- Document control
- Budget and cost management

UC Facilities Manual

The UC Facilities Manual contains University of California policies, procedures, and guidelines for its facilities. The manual is based on Regents' policy, federal and state laws, regulations, case law, and results of UC's dispute resolution. Areas covered include operations and administration, planning, design, construction contracting and closeout, and facilities management.

The University standard contract closeout documents have been developed to provide University Facilities with necessary forms, data, and procedures to complete a project. Table 3 outlines construction contract closeout document requirements.

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Table 3		Construction Closeout Project Documentation	
Document		Summary	
As-built Documents		As-built documents are copies of the drawings, specifications, and all other contract documents that have been updated by the contractor to reflect changes. The contractor is required to deliver as-built documents to the University's representative (project manager) as a condition for final payment and the release of retention.	
Operating and Maintenance Data		The project manager is responsible for receiving operating and maintenance data from the contractor and for ensuring that the data are complete, including identification of equipment installed; maintenance procedures; spare parts list indicating where parts may be obtained; and installer name, address, telephone number, and name of a contact person.	
Material Warranties/ Contractor Guarantees		Warranties and guarantees require the contractor to correct defective work that becomes apparent during the progress of the work or during the Guarantee to Repair Period. The Guarantee to Repair Period is a period of one year commencing with the date of Beneficial Occupancy, the date of Substantial Completion, or the date of Final Completion.	
Final Completion		Final completion shall be when the Project Manager accepts the work as fully completed and in accordance with the contract documents and when a Certificate of Occupancy (if applicable) has been issued by the University Building Official.	
Notice of Completion		Project managers perform a final inspection upon receipt of written notice from the contractor that the work is ready for final inspection and acceptance. The Project Manager must file a Notice of Completion within 15 days after the date of the Final Completion at the County Recorder's Office. The filed Notice of Completion signifies that the work has been completed according to the terms of the contract.	
Certificate of Occupancy		The Certificate of Occupancy is required by the California Building Standards Code to ensure code compliance for projects and ensure that fire and life safety requirements are reviewed by the Designated Campus Fire Marshal and the University Building Official. Disabled Access requirements are reviewed by the Division of the State Architect and Access Compliance to issue the Certificate of Occupancy after verification of code compliance.	
Application for Payment		The contractor starts the monthly payment process by preparing the Application for Payment form. The contractor also must itemize costs using the Cost Breakdown form, submitted with the construction agreement. At the end of the project, the contractor completes and submits the Final Application for Payment.	
Certificate for Payment		A document prepared by the University's representative that authorizes payment to the contractor. The University's representative must certify that the application is correct and must check the accuracy of work completed for each line item, including cost breakdown of the contract sum.	
Final Payment and Release of Retention		Final payment and any remaining retention becomes due after the general contractor submits the following to the project manager: final application for payment and all required submittals, conditional releases from the contractor and subcontractors, as-built documents, all operating maintenance data for equipment, all guarantees and warranties, and all other submittals required by the contract document. Final payment shall be paid not more than 10 days after the project manager issues the final Certificate for Payment.	
Stop Payment Notices		A stop payment notice is a legal notice submitted to the University by a construction subcontractor, supplier, manufacturer, distributor, or another party to withhold unexpended funds held by the University to satisfy claims regarding labor and materials furnished to the contractor for the work.	

Source: Auditor analysis.

SUMMARY OPINION

Our work found that campus construction closeout processes are overall compliant with the UC Facilities Manual. However, we did identify a need to formalize a disaster recovery plan and consult with the Office of General Counsel on best practices to retain official documentation.

Audit observations and management corrective actions are detailed in the remainder of the audit report.

DETAILED OBSERVATIONS AND MANAGEMENT CORRECTIVE ACTIONS

A. Business Processes

The results of our analysis indicate that business processes regarding construction closeout documentation, certificate for payment, financial reporting of expenses, and data retention were overall compliant with the UC Facilities Manual and other University policies. However, we identified a need to formalize a disaster recovery plan and to consult with the Office of General Counsel on best practices to retain official documentation.

1. Construction Closeout Documentation

Our detailed evaluation of five construction closeout projects found that D&CS is overall in compliance with construction closeout documentation requirements prior to Final Payment and Release of Retention, as defined by the UC Facilities Manual. See Table 4 for the results.

Table 4	Closeout Project Documentation				
Documents	North Campus Faculty Housing ¹	Faculty Club Renovation & Guest House Addition	Engineering II Laboratory ²	Materials Research Laboratory Infill	Bio II Mosquito Research Laboratory ³
As-Built Plans	✓	✓	✓	✓	✓
Operating and Maintenance Manuals	✓	✓	✓	✓	✓
Warranty/ Guarantee	✓	✓	✓	✓	✓
Final Completion	✓	✓	✓	✓	✓
Notice of Completion	✓	✓	✓	✓	✓
Certificate of Occupancy	✓	✓	N/A	N/A	N/A
Application for Payment	✓	✓	✓	✓	✓
Certificate for Payment	✓	✓	✓	✓	✓
Stop Notices	N/A	N/A	N/A	N/A	N/A

Source: Auditor analysis.
 ✓: Compliance with procedure requirements.
 N/A: Not applicable.
 1: North Campus Faculty Housing: Phase III.
 2: Engineering II Laboratory: #2232.
 3: BIO II Mosquito Research Laboratory: #7167 & 7168.

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D&CS retained required documents in the following areas: As-built documents, operating and maintenance manuals, warranties, guarantees, Final Completion, Notice of Completion, Application for Payment, Certificate for Payment, and Stop Notices (if applicable).

2. Certificate for Payments and Final Payment Issuance

We verified that all construction closeout projects in our sample were submitted for Final Payment and Release of Retention, as required by the UC Facilities Manual. The final payment also was processed within ten days of the approved Certificate for Payment. On the Storke Apartment Exterior Renovation project, we found nominal internal costs and warranty work payments made after the 10 days of the Certificate for Payment. We determined they were acceptable final project costs. See Table 5 for the results of our work.

Table 5	Final Certificate for Payment within 10 Days		
Project	Final Certificate Date	Payment Date	Rating
Interim Seismic Reinforcement	3/15/16	3/16/16	✓
Storke Apartments Exterior Renovation	6/23/16	6/27/16	✓

Source: Auditor analysis.

✓: Compliance with procedure requirements.

3. Financial Reporting of Expenses

The Office of Budget and Planning approves capital budgets for construction projects and tracks final project costs in the Capital Improvement Budget (CIB) report. The final closeout CIB includes the final approved funding and actual project costs. D&CS tracks construction project costs in a shadow system that feeds the campus General Ledger. They generate from this system the Project Status Report (PSR), a report that is updated and distributed monthly to project managers. This report provides a summary of expenses and the balance or deficit on the project. Upon closing the project, costs reflected on the final closeout CIB and the PSR should be consistent.

Table 6	Closeout Project Cost			
Project	PSR	CIB	Rating	Comments
Davidson Library	\$75,574,149	\$75,477,312	✓	We were informed that one contract on the Davidson Library is still open and active.
North Campus Faculty Housing	\$15,183,200	\$15,183,200	✓	North Campus Faculty Housing reconciled.

Source: Auditor analysis.

✓: Project cost reconciles in CIB and in PSR.

x: Project cost does not reconcile in CIB and in PSR.

Partial: Project does not reconcile due to an open contract within the project.

We tested two closed construction projects to determine whether project costs reported in the CIB were consistent with the most recent PSR. For one project with multiple contracts, we noted a difference of approximately \$96,800. This difference resulted from one contract within the project that remains open and active. See Table 6 for the results of our work.

4. Data Retention and Business Continuity

Critical project documentation must be maintained for the life of the building. Construction project documentation includes physical documents created prior to the department utilizing the Prolog and the department file server to retain required documentation and securing it as the official project documentation. Currently, project documentation is electronic and stored in North Hall Data Center. Physical documentation used during the project is destroyed when the project is closed.⁵ The project documentation is stored in the following manner:

- Prolog application: Documents and communications with vendors for open construction projects.
- Department fileserver: Closed construction project documentation.
- Harder Stadium room: Physical documents, created prior to electronic imaging. They have been stored in an area with unknown climate control and fire proof measures.⁶

Table 7	Business Continuity	
Categories	Rating	Comments
Back-up Policy	✓	We confirmed that there is a backup of virtual machines for D&CS on a nightly basis of the full server image.
Disaster Recovery Plan	✗	Lack of a documented disaster recovery plan.

Source: Auditor analysis.
 ✓: Complied.
 ✗: Not in compliance.

We were informed that Administrative & Residential Services Information Technology (ARIT) performs nightly full image back-ups for the Prolog application and department's fileserver files. These backups are stored in other servers also located in North Hall Data Center. However, there is no documented disaster recovery plan for the Prolog application and the department fileserver. We also found limited recovery tests for backups. See Table 7 for the results of our work.

5. Other Issues

We were informed that the department would like to scan and store official project documentation in an electronic format.⁷ However, this practice must be consistent with UC data retention policy and state regulation.

To ensure compliance with University policy and state regulation, we recommend that Design & Construction Services evaluate controls and security measures to better protect information assets and resources by:

- Documenting a disaster recovery plan for construction project data and applications. This plan should include periodic data recovery tests.
- Seeking legal counsel to determine whether future electronic retention practices are consistent with University policy and state regulation, if the official project documentation is only retained electronically.

⁵ Some original documents are retained for compliance requirements.

⁶ Physical documents have been moved to a more controlled location.

⁷ Electronic format guarantees a more reliable solution to comply with retention requirements.

- Evaluating how to preserve physical documents that must be maintained for the life of the building.

Management Corrective Actions

Design & Construction Services will:

- Document a disaster recovery plan for construction project data and applications. This plan should include periodic data recovery tests.
- Seek legal counsel to determine what official project documentation may be retained electronically and what must be retained in hard copy format.
- Evaluate the feasibility of purchasing and installing a capital management program software system to centralize document management and retention in compliance with the UC data retention policy, state regulation and recovery plan.

Audit and Advisory Services will follow up on the status of this management action plan by June 29, 2018.