

**CALIFORNIA STATE UNIVERSITY,  
SAN BERNARDINO**

**SCIENCE BUILDING ANNEX PHASE I**

Final Report

July 12, 2007

**CONSTRUCTION PROJECT EVALUATION**  
**CALIFORNIA STATE UNIVERSITY, SAN BERNARDINO**  
**SCIENCE BUILDING ANNEX PHASE I**

July 12, 2007

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*This report and all associated analysis contained herein are based upon information made available to KPMG LLP. KPMG LLP is not responsible for incomplete or inaccurate information provided during the preparation of this report. This report only presents and summarizes factual data and does not represent an opinion or attestation to the position, approach or representation of information made by any other party involved with this evaluation.*

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# CONTENTS

Executive Summary .....	3
Summary of Findings .....	3
Introduction .....	5
Purpose .....	5
Scope .....	5
Methodology .....	6
Exclusions .....	6
Project Background .....	7
Delivery Methodology .....	7
Timeline .....	7
Project Costs .....	8
Design Costs .....	9
Construction Bid Process .....	11
Subcontractor Compliance .....	11
Construction Change Orders .....	13
Change Order Report Analysis .....	17
Inspection Services .....	19
Major Equipment/Materials Review .....	21
Close-Out Process .....	22
Liquidated Damages .....	23
Accounting .....	25

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## EXECUTIVE SUMMARY

### Summary of Findings

Based upon our evaluation, the Science Building Annex Phase I at CSUSB was administered consistent with our expectations of a project of this size, scope, and complexity, but with certain areas in the contract administration process that could be improved. We did not find any significant control or process weaknesses that would expose CSUSB to major unnecessary risks, but we did uncover several minor discrepancies and control issues that should be addressed.

Our observations, associated risks and recommendations are summarized below. Examples of specific action steps are further detailed in the body of this report.

	<b>Observation</b>	<b>Risk</b>	<b>Recommendation</b>
1.	Design development services were performed prior to the formal execution of a written contractual agreement. In addition, the contractual agreement was not effective for the period when the majority of the design development services were performed.	Allowing work to be performed prior to a written contractual agreement or outside of a contract agreement exposes the CSUSB to unnecessary contractual risks.	Contractual agreements should be fully executed and effective prior to any work being performed on a project.  (Ownership: CSUSB)
2.	Change orders resulting from time and materials based field instructions did not consistently include full supporting documentation as required by SUAM 9820 Appendix D and the Contract General Conditions.	Lack of complete support for the contractor's time and material based charges may result in overpayment by CSUSB.	In the future, CSUSB should ensure that signed contractor time and material logs, any CSUSB adjustments to the contractor's time and material logs, and other relevant support is included with the change order documentation and reconcile back to the agreed upon change order amount for time and material based changes.  (Ownership: CSUSB)
3.	Change proposals were not consistently issued on a timely basis as required by SUAM 9820 Appendix D and the Contract General Conditions.	Lack of timely issuance of change proposals may put funds available to pay for the proposed change at risk and impact real time tracking of cost exposure on the Project.	SUAM should be revised to address the appropriate use of change proposals and include a detail flow chart of the change order process to better illustrate the many requirements by SUAM and the Contract General Conditions for both conventional and emergency changes.  (Ownership: CPDC)

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EXECUTIVE SUMMARY

	<b>Observation</b>	<b>Risk</b>	<b>Recommendation</b>
	Time extensions were not negotiated on a contemporaneous basis as they occurred.	Late resolution of time extensions may undermine CSUSB's ability to reach a favorable agreement with the contractor at the end of the Project and is not a preferred industry practice.	None
4.	Funds remained encumbered long after the Project was complete.	Leaving funds encumbered unnecessarily may not be the most efficient management of financial resources.	Once final invoices are paid to a consultant, any remaining contract balance should be timely closed out through a deductive change order and any unused funds should be disencumbered in the accounting system.  (Ownership: CSUSB)

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## **INTRODUCTION**

### **Purpose**

KPMG LLP (“KPMG”) was retained by California State University’s (“CSU”) Office of the University Auditor on October 29, 2004 to perform an independent project evaluation of California State University, San Bernardino’s (“CSUSB”) Science Building Annex Phase I (“the Project”).

The overall objective of the construction evaluation was to assess construction management practices for the Project and to substantiate that it was managed in accordance with law, Trustee policy, generally accepted business practices, and industry practices.

To the extent they were uncovered as part of our work, this report provides conclusions and recommendations addressing necessary process improvement and recovery of project costs. Recommendations are listed and numbered sequentially throughout this report.

### **Scope**

While the basic scope of our work matches that required by the RFP and that which KPMG has performed in prior years, we also included additional items that we believe may provide benefit to CSU. KPMG identified specific areas within the scope listed below that present the potential for substantive loss or liability for CSUSB’s Science Building Annex Phase I project. The various scope categories are outlined in CSU’s Request for Proposal, dated July 14, 2004 and KPMG’s proposal, dated July 27, 2004 and contains the following sections:

- Project Background
- Design Cost
- Construction Bid Process
- Construction Change Orders
- Project Management and Inspection Services
- Major Equipment and Materials
- Close-Out Documentation
- Liquidated Damages
- Accounting

## Methodology

KPMG’s approach to this engagement incorporates a work plan shared with the University Auditor’s office as outlined in our agreement with CSU. During the course of our work we expanded on tasks related to scope sections with the greatest potential risk exposure, in our opinion. The work performed by KPMG was conducted in accordance with our aforementioned methodology, but is not limited to, the following tasks:

- Examine financial records, reports, written CSU procedures, CSU contract documents and other material related to the project and compare current practices and procedures with CSU requirements and best practices in the industry;
- Conduct a preliminary review to determine project emphasis;
- Interview key individuals involved in the project;
- Identify significant deficiencies, if any;
- Recommend changes that may result in streamlining the design/construction process, assuring adequate project controls and reducing costs; and
- Prepare a written report of our findings and recommendations.

## Exclusions

The services, fees and delivery schedule for this engagement are based upon the following assumptions, representations or information supplied by CSU (“Assumptions”).

1. KPMG is not responsible for and will not make management decisions relating to this Project or any other aspect of CSU’s business. CSU shall have responsibility for making all decisions with respect to the management and administration of its real estate and capital projects.
2. CSU management accepts responsibility for the substantive outcomes of this engagement and, therefore, has a responsibility to be in a position in fact and appearance to make an informed judgment on the results of this engagement.
3. Our work under this engagement did not include technical opinions related to engineering, operations and maintenance.
4. KPMG’s work under this engagement did not include a review, audit or evaluation of financial statements, tax services, or other services of KPMG not listed in this Statement.
5. We have, and will continue to consider the effect of this engagement on the ongoing, planned and future audits, as required by *Government Auditing Standards* and have determined that this engagement will not impair KPMG’s independence.

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## PROJECT BACKGROUND

The California State University, San Bernardino Science Building Annex Phase I Project (“the Project”) included construction of a three story Science Annex Building including laboratories, a natural science museum, classrooms, and faculty office spaces in roughly 57,500 square feet. The project was constructed adjacent to and connecting with the existing Biology Building which is a concrete frame and concrete structure. The new construction consisted of a steel brace frame structure and a partial basement, metal panel and a glass cladding system. The project also involved installation of CSU provided equipment and exterior landscaping.

During the week of April 23, 2007, KPMG conducted fieldwork at the CSUSB campus, and reviewed records from the following entities involved with the Project:

Contractor	Kemp Bros. Construction, Inc.
Architect	Hellmuth, Obata & Kassabaum, Inc.
Inspector of Record	Converse Consulting
Project Management and Administration	CSUSB’s Capital Planning, Design and Construction Department

Follow-up discussions to clarify issues and supplement supporting documentation were conducted through the completion of this report.

### Delivery Methodology

The Project was delivered using a design-bid-build, lump sum contract delivery methodology.

### Timeline

Schematic design for the Project started in April, 2002. Bid documentation was issued in February, 2003 and estimated the construction costs at \$19,745,000. Five contractors submitted bids which all exceeded the estimated construction costs. As a result, an addendum was issued introducing two new deductive bid alternates. The Project was re-bid using this new information. On May 22, 2003 Kemp Bros. Construction, Inc. was declared the lowest responsible and responsive bidder with a total bid amount of \$19,658,000, including alternates, and was awarded the contract. Construction began on July 7, 2003 with the issuance of a commencement date in the Notice to Proceed.

The Project encountered many delays due to high amounts of rain, difficulty in finding skilled labor, and steel fabrication production issues. A Certificate of Occupancy was eventually issued on September 20, 2005 excluding the museum. An additional Certificate of Occupancy was issued on October 11, 2005 for the museum, and was followed by a Notice of Completion issued on January 6, 2006.

## Project Costs

The Project was initially approved in July, 2002 by the Board of Trustees in the amount of \$26,016,000, based on a per square footage cost as developed from the California Construction Cost Index CCCI 4019. Project funding was anticipated to come from general obligation bonds with the exception of Group II Equipment which was to be funded from a future bond measure.

At the time of KPMG's fieldwork CSUSB had incurred \$25,019,241 in costs on the Project and had commitments in the amount of \$25,264,834.

A summary of project costs is as follows:

<b>Description</b>	<b>Budget (2-7)</b>	<b>Commitments</b>	<b>Actual</b>	<b>Variance (Budget - Commitments)</b>
Construction	\$ 19,745,000	\$ 20,792,970	\$ 20,792,970	\$ (1,047,970)
Architect and Engineering	1,247,000	1,642,730	1,655,439	(395,730)
Contract Management	1,382,000	493,125	493,125	888,875
Contingency	987,000	-	-	987,000
Required Additional Services	233,000	246,780	259,372	(13,780)
Group II Equipment	2,422,000	2,089,229	1,818,336	332,771
<b>Subtotal</b>	<b>\$ 26,016,000</b>	<b>\$ 25,264,834</b>	<b>\$ 25,019,241</b>	<b>\$ 751,166</b>

## DESIGN COSTS

A standard Project Architect/Engineering Agreement was executed between CSUSB and Hellmuth, Obata & Kassabaum, Inc. (“HOK”) on September 4, 2002 in the amount of \$1,246,367 for design services. Eight Extra Service Agreements (“ESA’s”) were formally executed and a ninth ESA had been incorporated into the invoices, although it had not yet been formally executed during KPMG’s fieldwork. The following table summarizes the design cost for the Project:

<b>Contract Value</b>	<b>Date</b>	<b>Agreement Total</b>
Schematic Design (20%)		\$ 249,273
Design Development (14%)		174,491
Construction Documents (38%)		473,619
Bidding (2%)		24,927
Construction Administration (22%)		274,201
Record Drawings (4%)		49,856
<b>Total Base Agreement Value</b>	9/4/2002	<b>\$ 1,246,367</b>
ESA #1 - Architectural and lab planning services	1/7/2003	55,000
ESA #2 - Additional for reimbursable expenses	10/14/2003	20,000
ESA #3 - Specialty lighting design	3/5/2004	27,350
ESA #4 - Additional schedule review services	5/17/2004	10,122
ESA #5 - Architectural services to include roofing inspection consultant	11/17/2004	9,928
ESA #6 - Additional A/E services to include lighting revisions	10/14/2005	5,000
ESA #7 - Investigation of Savings by Design program	10/14/2005	1,500
ESA #8 - Additional roofing inspection consultant services	12/23/2005	9,900
ESA #9 - Arborist report	TBD	2,860
<b>Amendment Subtotal</b>		<b>\$ 141,660</b>
<b>Total Revised Agreement Value</b>		<b>\$ 1,388,027</b>

Although the agreement was formally executed on September 4, 2002, the effective date of the contract was August 12, 2002. Design development services in the amount of \$411,301 were performed prior to date time, between April and July, 2002. This work was invoiced on June 3, 2002 (\$236,810) and August 9, 2002 (\$174,491), however the invoices were not paid until September 9, 2002.

CSUSB explained to KPMG that a letter of understanding was in place with HOK to begin work prior to execution of a formal agreement, however a copy of this letter was not provided KPMG for review.

### **Observation:**

Design development services were performed prior to the formal execution of a written contractual agreement. In addition, the contractual agreement was not effective for the period when the majority of the design development services were performed.

***Risk:***

Allowing work to be performed prior to a written contractual agreement or outside of a contract agreement exposes the CSUSB to unnecessary contractual risks.

***Recommendation:***

1. Contractual agreements should be fully executed and effective prior to any work being performed on a project.

(Ownership: CSUSB)

***Campus Response:***

1. The campus concurs with the recommendation and will provide project managers with a written directive which will reiterate contractual agreement requirements. The directive will be incorporated into the CSUSB-CPDC Construction Management Manual. Copies of the Manual are assigned to and maintained by all CPDC managers and applicable staff members.

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## **CONSTRUCTION BID PROCESS**

A complete set of specifications, general conditions and drawings were made available to bidders on April 1, 2003. A pre-bid meeting and site walk was held on April 10, 2003 and was attended by all bidders. Clarifications, revisions to the contract documents, and an extension of the bid date to May 8, 2003 were detailed in five addenda issued between April 14, 2003 and May 5, 2003.

Bid opening for the Project was held on May 8, 2003. Bids were submitted by Haselden Construction, Inc., Kemp Bros. Construction, Inc. (“Kemp Bros”), S.J. Amoroso Construction Co., Inc., Swinerton Builders, Mallcraft, Inc., and Bernard Bros., Inc. All bids exceeded the architect’s estimated construction costs of \$19,745,000. As a result, the bids were returned to the bidders and another addendum was issued setting a new bid date for May 22, 2003 and establishing two additional deductive alternates to be included. Only contractors who previously submitted bids were permitted to participate in the re-bid process. This process conformed to requirements established by SUAM 9773.

Revised bids were received from all previous bidders with the exception of Haselden Construction, Inc. and Mallcraft, Inc. On May 22, 2003 the new bids were opened, a ranking and abstract of bids was created. Bids were evaluated on the basis of the base bid less any or all alternatives taken in the order of precedence, as per the bid documents and in accordance with SUAM 9721.07.03. Kemp Bros was the lowest responsive and responsible bidder with a final bid amount of \$19,695,000, including deductive alternatives 1-7. As a result, Kemp Bros was awarded the construction contract for this project.

KPMG reviewed CSUSB’s bid files and bid process and found the Project administrative team in compliance with requirements related to pre-bid meeting, advertising for bids, distribution of project plans and specifications, review of bid proposal package, issuing of addenda during bidding, pre-qualification of bidders, and obtaining required documentation from the successful bidder.

### **Subcontractor Compliance**

Per the Contract General Conditions section 2.06 (b) subcontractors who perform work in excess of ‘one-half of one percent’ of the Contractor’s total bid must be included on the Proposed List of Subcontractors at the time of bid and included on the Expanded List of Subcontractors submitted within two working days of bid opening.

KPMG found one instance where a subcontractor provided services in excess of one-half of one percent and was not included on the Expanded List of Subcontractors. However, after discussions with CSUSB and Kemp Bros, it was established that the subcontractor, Yamas Controls, provided services related to energy management services, which was a deductive alternate later added back into the contract with additional work incorporated by CSUSB. The value at the time of bid did not exceed the threshold for listing.

There were five instances of subcontractor substitution requests on this project, four of which resulted in a successful substitution and one for which the substitution request was retraced. The substitutions are as follows:

Advanced Lab Concepts was replaced by Richard McIntyre & Associates, due to a name change of the firm.

Owen Pacific was replaced by Eberhard Roofing, since it was determined the work performed by Owen Pacific was substantially unsatisfactory and that Owen Pacific failed to perform on its contractual responsibilities.

Kemp Bros intended to substitute Steiny & Company with an alternate subcontractor citing the work by Steiny & Company was substantially unsatisfactory and that Steiny & Company failed to perform on its contractual responsibilities. Steiny & Company was notified by CSUSB of Kemp Bros' intent to substitute on April 4, 2005. Steiny & Company subsequently protested the substitution in a letter received by CSUSB on April 11, 2005. As a result, a hearing was held on April 22, 2005, in accordance with and Public Contract Code Section 4107. A representative from CSU Northridge presided over the hearing and approved the request for substitution in a letter dated April 28, 2005.

Neubauer Electric was replaced by CDM Engineers and Constructors due to Neubauer Electric's inability to enter into contract with Kemp Bros. The request was granted by CSUSB.

JRH Concrete was replaced by All American Asphalt due to JRH Concrete's inability to perform on its contract due to manpower issues.

The Engineered Metals Company was approved for substitution due to lack of an active California contractor's license; however and the Engineered Metals Company did perform the work as an active license was obtained.

Inquiry of CSUSB and Kemp Bros as well as comparison of the list of subcontractors to Kemp Bros' actual cost records revealed no evidence of inappropriate subcontractor substitution. All substitutions noted were granted in conformance with SUAM 9721 and Public Contract Code Section 4107, without exception.

***Recommendation:***

None

## CONSTRUCTION CHANGE ORDERS

At the time of KPMG's fieldwork, 28 change orders in an amount of \$1,097,970 had been executed on the Project increasing the total contract value to \$20,792,970. The following table summarizes the change orders:

CO	Description	Date	Amount
1	Add back deductive alternate #1	9/8/2003	\$ 40,000
2	Add back deductive alternate #2	9/8/2003	70,000
3	Removal and disposal of broken piping, install new piping	9/8/2003	3,069
4	Damproofing existing tunnel walls/roof, waterproofing at Biology Building	12/2/2003	26,776
5	Repair/relocate irrigation main lines, replace water & gas line loops (south)	2/4/2004	51,944
6	Install new gas & water lines along street north of project	2/4/2004	44,097
7	Modify footing, stormwater pollution prevention plan, signage	4/27/2004	7,732
8	Modifications to foundation, repair sump drain line	4/27/2004	8,717
9	Change deionized water distribution loop piping materials	4/30/2004	28,288
10	Office restrooms, elevated concrete roof pads, electric duct heater	9/20/2004	41,444
11	Add ADS pipe for roof drain connection (east & west)	10/18/2004	31,127
12	Delete maintenance equipment, add tieback points, ductwork, ball valves	10/18/2004	(44,528)
13	Single slide operated door at existing science building	1/19/2005	19,750
14	Stud curbs/headers, revise casework, stud walls & drywall ledge cants	1/19/2005	63,672
15	Piping & roof drain, ductwork modifications, metal curb, delete divider shaft walls	3/8/2005	43,741
16	CAD services for rework of mechanical shop drawings, change mixing valve	3/8/2005	35,908
17	Motor operator, revisions of support tube steel, fire rated countertop	3/8/2005	18,621
18	Change roofing membrane at aluminum panel installation	3/8/2005	61,301
19	Modify metal panels and aluminum curtain wall, modify GFRC panels	3/11/2005	38,087
20	Electronic Locksets, additional utilities for water polishers and glass washer	6/16/2005	21,695
21	Pipe stands at roof top, sheet metal pad covers, concrete slab extension, sheathing	1/13/2006	178,579
22	Deletion of signage scope, handrail modification, change door frame	12/8/2005	(11,891)
23	Modified and added details of roofing concerns	12/13/2005	58,122
24	Rigid insulation and coverboards at infill area under Air Handling Unit 4	1/4/2006	17,788
25	Structural framing modifications, changed mechanical scope	1/4/2006	67,703
26	Structural framing modifications, changes to metal roofing, changes to landscaping	1/4/2006	58,186
27	Revise landscape and hardscape, mechanical duct, credits for birdscreen, roofing	1/6/2006	118,041
28	Global settlement - time extension	1/9/2006	-
<b>Total</b>			<b>\$ 1,097,970</b>

KPMG performed testing procedures on selective change orders. The change orders were selected to include large dollar line items, credit items, and represent a variety of subcontractors. Signature authority, supporting back-up documentation, and mark-up calculations were reviewed, among other things.

KPMG noted that \$826,511 of the change orders, or approximately 75%, originated as field instructions, which is a high amount in comparison to other CSU projects. Per SUAM 9820 Appendix D, field instructions should be issued for emergency change orders to avoid serious work stoppage, delay or extra costs. Per the Contract General Conditions, field instructions can also be utilized as an order to the contractor to proceed with the extra work in the event the contractor and the Trustees are unable to reach an agreement as to cost. CSUSB explained that field instructions were used on the Project to avoid impact to the contractor's schedule, as would have been the case if standard SUAM change order procedures were followed.

SUAM 9820 Appendix D and the Contract General Conditions require that an attempt be made by the project manager to estimate costs and agree to a lump sum cost with the contractor before the contractor proceeds with the work, if all possible. If it is not possible to agree on a price, the contractor shall proceed on a time and material basis with an authorization limit, if required. Immediately after the field instruction is issued, the design professional should prepare a change proposal, including an estimate of the cost. The contractor is required to keep detail time and material logs, signed by the CSUSB project manager. After the work is completed, the design professional should prepare a formal change order and attach all necessary back-up.

The field instructions reviewed by KPMG were all issued on a time and material basis without any set authorization limit for the costs. Price negotiations with the contractor generally took place after the work was complete. CSUSB implemented the use of a cost consultant on the Project, however certain change orders did not contain sufficient supporting information to understand how cost negotiations took place or to justify the amount ultimately agreed to.

- Detail time and material logs were not consistently included as back-up with the change order or the change order contained time and material logs which did not reconcile to the amount included with the change order.
- Prevailing wage rate schedules or other supporting documentation were not consistently included as justification for labor rates used.
- Certain time and material logs were not signed by the construction inspector indicating acceptance by CSUSB. CSUSB explained that on several occasions, time and material logs presented by the contractor and not agreed to by CSUSB and as a result, they were not signed. However, CSUSB's account of the time and material was not detailed in the change order and as a result, it is not clear what the discrepancies were or how the amount eventually agreed to was arrived at.
- Certain change orders were negotiated to a lesser amount than what was proposed by the contractor. A revised amount was agreed to without any support as to how this new amount was arrived at.

***Observation:***

Change orders resulting from time and materials based field instructions did not consistently include full supporting documentation as required by SUAM 9820 Appendix D and the Contract General Conditions.

***Risk:***

Lack of complete support for the contractor's time and material based charges may result in overpayment by CSUSB.

***Recommendation:***

2. In the future, CSUSB should ensure that signed contractor time and material logs, any CSUSB adjustments to the contractor's time and material logs, and other relevant support is included with the change order documentation and reconcile back to the agreed upon change order amount for time and material based changes.

(Ownership: CSUSB)

***Campus Response:***

2. The campus concurs with the recommendation and will ensure that all project managers are in compliance with time- and materials-based change orders. Filing procedures will be strengthened to ensure that all documentation is correctly maintained. A written directive reflecting the importance of accurate recordkeeping will be provided to all CPDC managers and applicable staff, for permanent retention in the CSUSB-CPDC Construction Management Manual.

In addition, KPMG noted that change proposals were not always prepared immediately after issuance of a field instruction. The average time for a change proposal to be issued was 2 months after issuance of the field instruction. KPMG was not able to review certain change proposals, as change proposals were not consistently included with the change order documentation as required by SUAM 9820 Appendix D and the corresponding physical change proposal files for those change proposals selected could not be located by CSUSB.

***Observation:***

Change proposals were not consistently issued on a timely basis, as required by SUAM 9820 Appendix D and the Contract General Conditions.

***Risk:***

Lack of timely issuance of change proposals may put funds available to pay for the proposed change at risk and impact real time tracking of cost exposure on the Project.

***Recommendation:***

3. SUAM should be revised to address the appropriate use of change proposals and include a detail flow chart of the change order process to better illustrate the many requirements by SUAM and the Contract General Conditions for both conventional and emergency changes.

(Ownership: CPDC)

***Management Response:***

3. We agree, and we have modified the change order procedures to provide clarifications on the use of change proposals. The modified procedures have been placed on the CPDC Construction Management website.

CSUSB presented a formal signature authority for the Project with the name, signature and funding level approval limits for key staff identified. This document specifies the signature authority pertains specifically to the preparation of change proposals. KPMG noted that this form differs from the CSUSB change order process as outlined in its Certification Proposal and Operational Plan for the Delegation of Capital Outlay Authority (“Delegation Authority”). The form utilized specifically by the Project required signature by the Vice President of Administration and Finance for change proposals exceeding \$100,000. The Delegation Authority sets the same level at \$150,000.

SUAM 9820 Appendix D states that the construction administrator may sign all change orders not exceeding \$20,000 and shall initial all change orders exceeding \$20,000 to signify that he/she has complied with all policies and procedures in the processing of the change order. The Executive Dean should sign all change orders over \$20,000, but less than \$100,000, and the Vice President of Administration shall sign all change orders over \$100,000. These SUAM requirements conform to the signature authority for the Project presented by CSUSB and these approval levels were utilized by KPMG for testing purposes. KPMG noted that least one member of the key management staff received a new title during the project, with increased signature authority. This is not reflected by the project signature authority form, but was taken into consideration by KPMG.

Change order number 12 contained both additive and deductive line items. The net amount was \$44,528, however the absolute value of the change order is \$102,750, requiring additional signatures of both the Executive Dean and the Vice President of Administration and Finance. This requirement was not clearly articulated in SUAM at the time this change order was executed and has since been revised.

***Recommendation:***

None

Many delays occurred on this project including an extensive amount of rain. Difficulty obtaining skilled labor resulted in many correction notices which also impacted the schedule. An issue with steel fabrication resulted in a delay. Despite these delays, there were only two change orders issued including an extension of days for the project. Change order number 7 extended the project by a single day, and the final change order, change order 28, added a total of 366 days as a global settlement.

SUAM section 9792.01 describes the responsibilities of the construction administrator during the construction phase and specifically provides guidance on contemporaneous resolution of contract extensions. It is preferred, but not required, by SUAM to reconcile time after completion of major construction milestones.

***Observation:***

Time extensions were not negotiated on a contemporaneous basis as they occurred.

***Risk:***

Late resolution of time extensions may undermine CSUSB's ability to reach a favorable agreement with the contractor at the end of the Project.

***Recommendation:***

None

**Change Order Report Analysis**

CSU has historically considered change order costs incurred due to errors and omissions by the architect of up to 3% of the initial awarded construction cost as falling within the architect's 'standard of care'. However, the agreement as executed does not contain any language defining 'standard of care', but states errors and omissions insurance shall be secured and maintained in an amount no less than \$1,000,000 per occurrence.

The following table summarizes the data:

<b>Class</b>	<b>Type of Change</b>	<b>Amount</b>	<b>% of Total CO</b>	<b>% of Original Contract</b>
4.1	Error in or omission from the contract documents	\$ 522,189	47.6%	2.7%
4.2	Unforeseeable job site condition	310,903	28.3%	1.6%
4.3	Change in the requirements of a regulatory agency	41,374	3.8%	0.2%
4.4	Change originated by the University	197,020	17.9%	1.0%
4.5	Changes in specified work due to the unavailability of specified materials	19,207	1.7%	0.1%
4.6	Other	7,277	0.7%	0.0%
<b>Total Change Orders</b>		<b>\$ 1,097,970</b>	100.0%	5.6%
Original Contract Amount		\$ 19,695,000		
<b>Total</b>		<b>\$ 20,792,970</b>		

Based on the provided information, change orders attributable to errors and omissions are calculated to be 2.7% of the original contract amount which is less than the 3% that fall under the CSU's acceptable levels of 'standard of care'. The total dollar amount attributable to errors and omissions is \$522,189.

***Recommendation:***

None

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## **INSPECTION SERVICES**

CSUSB performed the majority of the required inspection with its own in-house inspectors, with the exception of certain specialty inspections, which were performed by outside consultants. The largest specialty inspector retained on the Project was Converse Consultants (“Converse”) who provided primarily testing services.

CSUSB entered into a service agreement with Converse on August 26, 2003 to provide construction inspection and materials testing services in conjunction with the Project on a not to exceed basis of \$175,850. No Extra Services Agreements to add scope, time or cost were issued.

KPMG tested a sample of Converse invoices, which were presented and paid in accordance with the specified rate sheet included with Rider A of the agreement. The approval process followed SUAM requirements. KPMG also reviewed a sample of both internal and Converse produced daily reports, inspection reports and test reports for existence. No discrepancies were noted.

Total billings against the contract were \$149,933, leaving a balance of \$25,917. A current accounting report for the project shows this balance remains encumbered for Converse. CSUSB explained that some amounts were kept encumbered just in case there was a need for additional services. However, there had been no billable activity by Converse on the Project for 16 months at the time of KPMG’s fieldwork. CSUSB explained that encumbrances do not need to be finalized until June 30, 2007.

### ***Observation:***

Certain funds remained encumbered long after the Project was complete.

### ***Risk:***

Leaving funds encumbered unnecessarily may not be the most efficient management of financial resources.

### ***Recommendation:***

4. Once final invoices are paid to a consultant, any remaining contract balance should be timely closed out through a deductive change order and any unused funds should be disencumbered in the accounting system.

(Ownership: CSUSB)

***Campus Response:***

4. The campus concurs with the recommendation. A written directive which reiterates close-out procedures will be distributed to all CPDC managers and applicable administrative staff. The directive will be incorporated into the CSUSB-CPDC Construction Management Manual.

## MAJOR EQUIPMENT/MATERIALS REVIEW

KPMG selected and reviewed a sample of materials and equipment based on the schedule of values and accessibility to the installed items. As this Project was a functional facility at the time of KPMG's fieldwork, consideration was given to equipment and materials located in occupied areas in order not to interrupt any student or faculty activities.

CSUSB allowed full and complete access to drawings, specifications, samples and submittals, which were organized, and contained sufficient information. The equipment and materials located in the field were compared to submittals approved by the architect and/or engineer and were verified against performance specifications, submittals, and drawings, as applicable.

The following equipment items and specific model data were approved and visually confirmed as installed on the project:

Division	Drawing No.	Brand	Model No./ Capacity	Description
15850	M002	Huntair	17,000 CFM TSP 4.50	Air Handling Unit
15540	M002	(Bell & Gossett) Baldon SuperE	1510-4BC/ 10hp, 1750rpm, 380 gpm, 230/480V	Centrifugal and Suction Pumps
15830	M002	Cook	290 MHS/ 18,000 CFM, 580 rpm, 25 hp	Exhaust Fan
	M002	Bell & Gossett	D-100V/ 56 gallon	Expansion Tank
16000-28	E104	Cylindrical acrylic diffuser, aluminum top and bottom	Custom	Decorative Pendant
14200	A802	Mitsubishi	3500 lbs	Hydraulic Elevator
14200	A802	Mitsubishi	2,100 lbs	Hydraulic Elevator
11601		Mott Manufacturing Limited	7231000/ 125V, 20 amp	Laboratory Hoods
16000	E807	Square D	3200 Amp, 480Y/277V, 4W, 60Hz	Electrical Panel
12345	QL-002	Custom	Custom	Laboratory Casework

### ***Recommendation:***

None

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## **CLOSE-OUT PROCESS**

KPMG verified the project close-out requirements established by the Contract General Conditions and SUAM. The CSU standard close-out checklist was not used by CSUSB to track close-out items, however CSUSB prepared its own close-out spreadsheets to ensure compliance with SUAM requirements, including detailed lists of warranties, manuals and training requirements. KPMG reviewed operation and maintenance manuals, warranties, punch list, operating permits, pre-final and final inspections and other relevant project close out documentation. As-built drawings were archived at the time of fieldwork and not observed. No discrepancies were noted in this process.

The Project had been fully accepted at the time of KPMG's field visit, however it had not yet been fully financially closed in all areas, as previously noted in this report.

It was noted by KPMG that a Post Project Performance Review had not yet been completed for this Project at the time of KPMG's fieldwork.

Nothing came to KPMG's attention indicating any discrepancies with the close-out process.

***Recommendation:***

None

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## LIQUIDATED DAMAGES

The Notice to Proceed to Kemp Bros establishes the original term of the contract as 545 days with work beginning on July 7, 2003 and to be completed on January 4, 2005.

One single day was added to the schedule through the normal change order process, extending the contractual completion date to January 5, 2005. 366 additional days were added to the schedule extending the expected completion to beneficial occupancy to August 15, 2005 through a global settlement change order at the end of the project, executed on January 6, 2006. The settlement also extended the time for completion of punch list items until January 6, 2006, provided there were no interruptions to CSUSB's operations by Kemp Bros. The global settlement was negotiated after Kemp Bros had already failed to meet the original scheduled date of completion. At the time the settlement was reached, the project was completed.

A Certificate of Occupancy was issued on September 20, 2005 excluding the museum piece of the Project. An additional Certificate of Occupancy was issued on October 11, 2005 for the museum, and was followed by a Notice of Completion issued on January 6, 2006. Beneficial occupancy was obtained on August 15, 2005.

Per the Contract General Conditions section 7.02 the Notice of Completion establishes the official completion date related to liquidated damages. The contract agreement and the Notice to Proceed established the amount of liquidated damages at \$2,000 per day until beneficial occupancy. Upon obtaining beneficial occupancy, the Trustees can reduce the amount of damages charged per day by one-half per Contract General Conditions section 7.02 bringing the amount charged per day for liquidated damages to \$1,000.

Prior to the global settlement was reached on January 6, 2006, liquidated damages would have been \$588,000, based on a strict interpretation of the contractual completion date of January 5, 2005, as outlined below:

Description	Date/Amount
Contractual start date, per Notice to Proceed	7/7/2003
Contractual completion date, per Notice to Proceed	1/4/2005
Days added through change orders	1
Revised contractual completion date	1/5/2005
Beneficial occupancy	8/15/2005
Beneficial occupancy date in days beyond revised contract completion date	222
Liquidated damages incurred prior to beneficial occupancy at \$2,000/day	\$ 444,000
Notice of Completion	1/6/2006
Completion in days beyond beneficial occupancy	144
Additional liquidated damages incurred prior to completion at \$1,000/day	\$ 144,000
<b>Total Potential Liquidated Damages</b>	<b>\$ 588,000</b>

CSUSB expressed no interest in pursuing liquidated damages and agreed on contractual scope, schedule and compensation adjustments with Kemp Bros based in its settlement discussions memorialized on January 6, 2006 in the global settlement change order. CSUSB had taken beneficial occupancy as expected and was able to get credit for unfinished change order work, among other things.

***Recommendation:***

None

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## ACCOUNTING

CSUSB provided an Excel workbook which contained all contractual obligations, encumbrances, and relevant payment information for the Project, with the exception of information pertaining to Group II Equipment. These costs were tracked separately and the corresponding accounting information was provided to KPMG in a second Excel workbook. These workbooks were not directly downloaded from the accounting system, but functioned as 'shadow' systems to track project costs. The shadow systems were regularly reconciled with the accounting system. Implementation of this type of 'shadow' accounting is a common practice among CSU campuses.

KPMG traced physical invoices and contractual obligations from the architect, contractor, and inspector to the entries in the workbooks provided by CSUSB. In addition, KPMG reviewed the accounts payable process. A sample of invoices we tested for appropriate approvals prior to payment. In addition, accounting information was obtained from the mainframe accounting system and on a sample basis was traced back to the shadow system information. No exceptions were noted.

***Recommendation:***

None

State of California

**California State University, San Bernardino**  
5500 University Parkway  
San Bernardino, California 92407-2397

**MEMORANDUM**

DATE : August 16, 2007

TO : Larry Mandel  
University Auditor  
The California State University

FROM : David DeMauro, Vice President  
for Administration and Finance

SUBJECT: **Campus Responses**  
*Construction Audit Report – Science Building Annex Phase I*  
**California State University, San Bernardino**

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AUG 22 2007

THE CALIFORNIA STATE  
UNIVERSITY

Enclosed please find campus responses for audit recommendations #1, 2, and 4 for the recently completed KPMG Audit Report on the Science Building Annex Phase I construction project at CSUSB.

c: Hamid Azhand, Director, Capital Planning Design and Construction

Enclosure

**CONSTRUCTION PROJECT EVALUATION**  
**CALIFORNIA STATE UNIVERSITY, SAN BERNARDINO**  
**SCIENCE BUILDING ANNEX PHASE I**

**DESIGN COSTS**

***Recommendation:***

1. Contractual agreements should be fully executed and effective prior to any work being performed on a project.

(Ownership: CSUSB)

***Campus Response:***

1. The campus concurs with the recommendation and will provide project managers with a written directive which will reiterate contractual agreement requirements. The directive will be incorporated into the CSUSB-CPDC Construction Management Manual. Copies of the Manual are assigned to and maintained by all CPDC managers and applicable staff members.

**CONSTRUCTION CHANGE ORDERS**

***Recommendation:***

2. In the future, CSUSB should ensure that signed contractor time and material logs, any CSUSB adjustments to the contractor's time and material logs, and other relevant support is included with the change order documentation and reconcile back to the agreed upon change order amount for time and material based changes.

(Ownership: CSUSB)

***Campus Response:***

2. The campus concurs with the recommendation and will ensure that all project managers are in compliance with time and materials-based change orders. Filing procedures will be strengthened to ensure that all documentation is correctly maintained. A written directive reflecting the importance of accurate recordkeeping will be provided to all CPDC managers and applicable staff, for permanent retention in the CSUSB-CPDC Construction Management Manual.

## **INSPECTION SERVICES**

### ***Recommendation:***

4. Once final invoices are paid to a consultant, any remaining contract balance should be timely closed out through a deductive change order and any unused funds should be disencumbered in the accounting system.

(Ownership: CSUSB)

### ***Campus Response:***

4. The campus concurs with the recommendation. A written directive which reiterates close-out procedures will be distributed to all CPDC managers and applicable administrative staff. The directive will be incorporated into the CSUSB-CPDC Construction Management Manual.



**Business and Finance**  
401 Golden Shore, 5th Floor  
Long Beach, CA 90802-4210

[www.calstate.edu](http://www.calstate.edu)

**Richard P. West**  
Executive Vice Chancellor/CFO

562-951-4600  
Fax 562-951-4970  
rwest@calstate.edu

**MEMORANDUM**

**Date:** August 31, 2007  
**To:** Larry Mandel  
University Auditor  
**From:** Richard P. West  
Executive Vice Chancellor & Chief Financial Officer  
**Subject:** Audit Report  
Science Building Annex, Phase I  
California State University, San Bernardino

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UNIVERSITY

I am pleased that the overall theme of this audit report continues in a positive vein and that it finds general compliance with established procedures. I have reviewed the report's findings with my Capital Planning, Design and Construction (CPDC) staff, and have attached our response to the auditors' findings and recommendations to CPDC.

RPW:ESJ:bn

Attachments

cc: Ms. Elvyra F. San Juan  
Mr. Larry Piper  
Mr. Thomas M. Kennedy  
Mr. James R. Corsar

CSU Campuses  
Bakersfield  
Channel Islands  
Chico  
Dominguez Hills  
East Bay

Fresno  
Fullerton  
Humboldt  
Long Beach  
Los Angeles  
Maritime Academy

Monterey Bay  
Northridge  
Pomona  
Sacramento  
San Bernardino  
San Diego

San Francisco  
San José  
San Luis Obispo  
San Marcos  
Sonoma  
Stanislaus

**CONSTRUCTION PROJECT EVALUATION**  
**CALIFORNIA STATE UNIVERSITY, SAN BERNARDINO**  
**SCIENCE BUILDING ANNEX PHASE I**

**CONSTRUCTION CHANGE ORDERS**

***Recommendation:***

3. SUAM should be revised to address the appropriate use of change proposals and include a detail flow chart of the change order process to better illustrate the many requirements by SUAM and the Contract General Conditions for both conventional and emergency changes.

(Ownership: CPDC)

***Management Response:***

3. We agree, and we have modified the change order procedures to provide clarifications on the use of change proposals. The modified procedures have been placed on the CPDC – Construction Management web site.

THE CALIFORNIA STATE UNIVERSITY  
OFFICE OF THE CHANCELLOR



BAKERSFIELD

September 20, 2007

CHANNEL ISLANDS

CHICO

**MEMORANDUM**

DOMINGUEZ HILLS

EAST BAY

TO: Mr. Larry Mandel  
University Auditor

FRESNO

FROM: Charles B. Reed  
Chancellor

A handwritten signature in black ink that reads "Charles B. Reed".

FULLERTON

HUMBOLDT

SUBJECT: KPMG Draft Final Report on the *Science Building Annex Phase I*  
Construction Project at California State University, San Bernardino

LONG BEACH

In response to your memorandum of September 20, 2007, I accept the response as submitted with the draft final report on the *Science Building Annex Phase I* construction project at California State University, San Bernardino.

LOS ANGELES

MARITIME ACADEMY

CBR/jt

MONTEREY BAY

Enclosure

NORTHRIDGE

cc: Ms. Erika Alvord, KPMG

POMONA

Mr. David DeMauro, Vice President, Administration and Finance,  
CSU, San Bernardino

SACRAMENTO

Dr. Albert K. Karnig, President, CSU San Bernardino

SAN BERNARDINO

Ms. Colleen Nickles, Assistant Vice Chancellor, Financial Services

SAN DIEGO

Ms. Elvyra San Juan, Assistant Vice Chancellor, CPDC

Mr. Richard P. West, Executive Vice Chancellor and Chief Financial Officer

SAN FRANCISCO

SAN JOSÉ

SAN LUIS OBISPO

SAN MARCOS

SONOMA

STANISLAUS