

Facilities: Design and Construction

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Project Name	Project Team	TEC (\$K)	Costs To Date 01/31/12 (\$K)	Contingency Balance (\$K)	Status	Funds Type	Comments							
1	B50A/B50B CHW Cross-Connection	K. Haley, PD R. Schaefer, PM CM C Shay-Stewart, PC	\$796	\$200	\$122	Construction	IGPP	<p>Offload 50B floors 3-6 to 50A chiller plant, optimize pumping and replace control system in 50B CHW system.</p> <p>Project value engineering design changes have been completed.</p> <p>Change Order for reduced/revised contract value has been executed.</p> <p>Mobilization and start of construction in March 2012 with completion in July 2012.</p>	<p>Risk #1</p> <p>Schedule</p> <p>Revised Cost Proposal is greater than budget requiring additional evaluation of estimates and scope, which may increase NTP date. Design assumptions to connect and route new plumbing and electrical conflict with existing conditions. Mitigation measures: Carefully layout routing and notify designer early and immediately to resolve conflict.</p>	<p>Risk #2</p> <p>Cost</p> <p>Cost overruns are possible due to unforeseen field conditions or difficulties with new LBNL standard controls system. Otherwise, unlikely to encounter difficult field conditions due to level of pre-start investigation. Revised pricing is well within budget.</p>	<p>Risk #3</p> <p>CHW Disruption / Loss of Cooling</p> <p>Valving changes will be made. Control monitoring points will be inserted into piping. It is possible that there could be a loss of chilled water that leads to a high-heat situation in data centers. Mitigation: Excellent planning and analysis of system function under impaired condition. Carefully monitor system performance and room temperatures after LOTO. Return system to pre-LOTO condition if unacceptable situation results; replan LOTO for future time. VE changes are reducing scope of work & thereby reducing risk.</p>	<p>Risk #4</p> <p>Safety Incident</p> <p>Safety incident possible while modifying pumping, piping and electrical systems. Mitigation: Follow all LBNL safety procedures, oversight project properly and suspend work if any unsafe condition is observed until unsafe condition is corrected.</p>	<p>Risk #5</p> <p>Commissioning / Functional Performance</p> <p>System will migrate control to new ALC control server; this is first project to do so. It may be difficult to achieve proper function or receive signals from existing controls system. Cost and schedule delay may be encountered, or excessive LBNL effort required to repeatedly troubleshoot the system and coordinate subcontractor personnel.</p>	<p>Risk #6</p> <p>Cutover</p> <p>Cutover to new control sequence results in data centers over-heat condition. Mitigation: Effective planning and technical review, take greatest possible load off system before cutover, contingency planning.</p>

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2 B55 PET Scanner	B. Beedle, PD D. Dovichi, PM J. Tully, CM S. Geddis, PC	\$627	\$354	\$10	Construction	Royalties	<p>Modify an existing 1,000 SF space, that currently contains a PET scan machine, to add a new PET Scanner and relocation of the existing control room.</p> <p>Original project construction work is complete and the PET Scanner x-ray machine arrived on site 02/20/12.</p> <p>Install and start up of PET Scanner scheduled to complete before 03/12/12.</p>	<p>Risk #1</p> <p>Schedule</p> <p>Original project construction work completed 02/13/12 and PET Scanner delivered to site on 02/20/12. Risk retired.</p>	<p>Risk #2</p> <p>Budget</p> <p>Approximately 1.5% contingency remains in the project budget after construction completion.</p> <p>Potential additional work requested by tenant may still be performed based upon contingency approval usage.</p>	<p>Risk #3</p> <p>Existing Utilities Infrastructure</p> <p>Original project construction work is complete and mitigation of existing B55 utility conflicts have been addressed.</p>	<p>Risk #4</p> <p>Coordination with Manufacturer Equipment</p> <p>Review and confirmation of manufacturer (Siemens) PET scanner requirements to operate.</p>
3 B62 ARRA (Phase 2) - Upgrade Laboratory Space	B. Beedle, PD D Galvez, PM CM C. Shay-Stewart, PC	\$2,773	\$315	\$247	Construction	ARRA	<p>Approximately 1,500 sf of General Purpose Laboratory space in B62.</p> <p>Construction subcontract award completed.</p> <p>Construction start 02/08/12.</p> <p>Mobilization complete 02/13/12.</p> <p>Next milestone: Construction complete 10/31/12.</p>	<p>Risk #1</p> <p>Overall Project Costs</p> <p>12/08/11 - Construction bids received over budget. Scope reduced, negotiated price within budget.</p>	<p>Risk #2</p> <p>Schedule</p> <p>7/1/11 - Lab Scope approved by client. 7/11/11 - WAS approved 12/16/11 - Begin renovations</p>	<p>Risk #3</p> <p>Hazardous Materials</p> <p>Lead and asbestos contamination in area of work has been identified and abatement is included in scope of work.</p>	<p>Risk #4</p> <p>Existing Utilities/Infrastructure</p> <p>Engineering review of record documents and existing field conditions have been conducted on MEP systems. Upon detailed design, additional design requirements have been identified and incorporated in final design.</p>

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4	B62 - 12kV Equipment Replacement	B. Beedle, PD D. Dovichi, PM J. Tully, CM S. Geddis, PC	\$1,857	\$543	\$330	A&E	DMR	<p>Replacement of existing selector switch, transformer, main switchgear and motor control centers.</p> <p>Contract documents to distributed for quotation to the following four bidders: (PDE Electric, EW Scott Electric, Cupertino Electric, and Blocka Construction).</p> <p>Bids due on 03/16/12 and construction mobilization scheduled for 04/02/12.</p>	<p>Risk #1</p> <p>Temporary Power for B62 Operation During the performance of B62 12kV equipment replacement work B62 will need to fully operate 24/7 on generator power. It is anticipated that B62 will need to run on generator power for six (6) weeks. Concern about the logistics to fill the generator(s) on a daily basis and maintenance during this period. Also a concern about providing redundancy for the temporary generator.</p>	<p>Risk #2</p> <p>BAAQMD Impact Concern about potential impact to LBNL by the Bay Area Air Quality Management District for continuously running generators for six (6) weeks.</p>	<p>Risk #3</p> <p>Bid Pricing To date the project has incurred FY 11 costs of \$537,484 to design this project and to purchase electrical gear from Eaton. Electrical gear to be transferred to the selected electrical contractor. A total of four electrical firms (Edward Scott Electric, Cupertino Electric, PDE Electric and Blocka Construction) have been selected to provide a bid for this project. The amount of the lowest responsive bid will dictate the amount of remaining project contingency.</p>	<p>Risk #4</p> <p>Existing Site Conditions The Contract Documents and submittals were prepared based on existing field conditions. In conjunction with the contract documents all bidders will be given a set of the approved Eaton equipment submittal drawings. Since B62 electrical cabling, raceways and distribution connection(s) are over forty (40) years old there is concern that additional replacement work may be needed once the existing electrical infrastructure is uncovered and evaluated.</p>	<p>Risk #5</p> <p>Schedule The project budget is based upon utilizing temporary generator power for a six (6) week period. In the event of potential unforeseen and or design conflicts there is a concern the schedule completion date may be extended and the current project contingency may not be sufficient to cover these added costs. In the event of a potential delay the project team will authorize overtime and or weekend work to avoid extending the duration needed to run temporary generators.</p>		
5	B74 Trailers	B. Beedle, PD S. McCutchan PM J. Tully, CM S. Geddis, PC	Const \$875 Moves \$161	\$0	Const \$118 Moves \$27	Planning	IGPP \$875 Ncap \$161	<p>Proposed project will site 3 trailers in the B74 parking lot for 18 individual offices.</p> <p>Project funding received 02/22/12.</p> <p>Anticipated start of construction 06/04/12.</p> <p>Estimated completion date 08/24/12.</p>	<p>Risk #1</p> <p>Cost Over-Run</p>	<p>Risk #2</p> <p>Late Finish</p>					

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6	Optical Metrology Lab	K. Haley, PD R. Schaefer, PM CM C Shay-Stewart, PC	\$1,355	\$14	\$288	A&E	GPP	<p>Procurement requisitions for design, BIM & commissioning are being issued.</p> <p>The vibrational study has been completed and concluded that the location with the proven equipment isolation supports will meet the performance criteria of the research equipment.</p> <p>Estimated construction start date 07/15/12.</p> <p>Estimated construction completion date April 2013.</p>	<p>Risk #1</p> <p>Field Discoverables Existing conditions impacting new construction are discovered and must be researched, redesigned, relocated, or demolished. Will not include hazardous materials as building was constructed in 2010.</p>	<p>Risk #2</p> <p>Fire Marshal / EH&S Directive Item(s) mandated by OFM or EH&S that are not a part of design but deemed necessary for Occupancy</p>	<p>Risk #3</p> <p>Safety Incident Safety incident occurs and impacts the project time, cost, or both.</p>	<p>Risk #4</p> <p>Vibration Vibration levels in completed space are too high to perform necessary measurements and require additional isolation of newly installed mechanical equipment.</p>	<p>Risk #5</p> <p>Piping or Electrical Damage Accident involving damage to plumbing or electrical utility in room due to demolition activity.</p>	<p>Risk #6</p> <p>Functional Requirements Certain threshold functional requirements are not captured in planning and design, and only come to light later in the project, costing time and money to resolve adequately.</p>	<p>Risk #7</p> <p>Construction Bids too High Construction bids come in higher than budget, reducing contingency or requiring additional budget funding in order to proceed.</p>	<p>Risk #8</p> <p>In-House Support Inadequate Facilities craft support received, slowing LOTO's, start-up, and overall job progress.</p>	<p>Risk #9</p> <p>Procurement Delays Delays to project progress caused by long activity time for Procurement to issue agreements. May also be caused by incomplete understanding on the part of the PM of all items required by Procurement.</p>	<p>Risk #10</p> <p>Construction Manager Labor/On-site Supervision Construction activity requires more on-site supervision than budgeted.</p>	<p>Risk #11</p> <p>Project Changes Customer demands changes to the project, affecting scope and budget. Risk to budget if changes are incorporated without first releasing contingency to pay for the change, or seeking change order to cover additional scope on project.</p>	<p>Risk #12</p> <p>Flooring Damage Flooring in room will be reused as it is a high-spec product and quite new. If it is damaged during construction it will have to be demolished and replaced at considerable expense.</p>	<p>Risk #13</p> <p>Damage to Customer Equipment or Property Damage occurs to customer scientific equipment in the High Bay Area due to careless material handling by Contractor.</p>	<p>Risk #14</p> <p>Schedule Schedule developed for project does not adequately capture design, construction, and commissioning activities. Additional contractor supervision cost, D&CG PM and CM effort.</p>	<p>Risk #15</p> <p>Thermal Stability / Air Turbulence The thermal stability of the constructed room does not meet threshold requirements and / or the air turbulence of the room is too great for the fine scale measurements taking place. Additional commissioning, AHU rework, baffles, new registers, or the like are required to remediate.</p>

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7 LBNL HSS Gates Technology	K Haley, PD I White, PM CM PC	SC - \$900 HSS - TBD LBNL-\$200	\$63	\$97 TBD \$40	A&E	Multi	<p>Procurement of Grizzly Gate is underway and final details are being resolved.</p> <p>Construction documents are underway for Grizzly and Black Berry Gate.</p> <p>Project is scheduled to be completed prior to September 2012.</p>	<p>Risk #1</p> <p>Underground Utilities Underground Utilities not located or known about</p>	<p>Risk #2</p> <p>Emergency Vehicles Additional Access requirements for addition/alternate emergency vehicles</p>	<p>Risk #3</p> <p>A/E Discrepancies Discrepancies/Omissions between multiple A/E & Consultants</p>	<p>Risk #4</p> <p>Integration Problems The Concept of Operations and functional requirements have been in flux as the project team attempts to nail down how to handle the change in access with the new technology. The software will be new to the lab and we are attempting to integrate the two software technologies. Problems could arise which require additional effort.</p>	<p>Risk #5</p> <p>CoO does work with design and policy Concept of Operations currently has the main access control method being card reader at the Grizzly Gate and potentially at the Blackberry Gate. This is a recent change. We have thus far been able to lock down how to handle high traffic volume and flow. Using the LPR, it presents a change to current access policy if we are to have an unmanned gate and allow multiple passengers per car to enter without showing their badge.</p>	<p>Risk #6</p> <p>Overtime/off hours work Due to unforeseen changes in the project, additional off hours work may be required to stay on schedule and meet milestones.</p>	<p>Risk #7</p> <p>PM Time Additional time for PM due to additional coordination</p>

NOTES

TEC - Total Cost.
 PD - Project Director; PM - Project Mgr; CM - Construction Mgr.; PC - Project Coordinator
 Costs - Actual costs expended as of month end noted (excludes liens).