

60% CONCEPTUAL DESIGN COST REPORT

for

**SLAC National Accelerator Laboratory
Research Support Building and Infrastructure Modernization
Menlo Park, California**

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BASIS OF COST REPORT

Cost Report Prepared From: Received

Drawings

Architectural plans / sketches

Research Support Building - 10 sheets	03/18/09
Building 003 - 3 sheets	03/18/09
Building 024 - 5 sheets	03/18/09
Building 041 - 3 sheets	03/18/09

Structural plans / details

Research Support Building - 5 sheets	03/18/09
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Draft narrative / notes for Civil, Architectural, Structural and MEP Systems 03/18/09

Discussions / meeting with the Project Architect

Conditions of Construction

The pricing is based on the following general conditions of construction

Construction Schedule:

Research Support Building (including demolition)

Start of construction - April 2011
Completion of construction - December 2012
Midpoint of construction - February 2012

Building 003

Start of construction - April 2011
Completion of construction - September 2011
Midpoint of construction - July 2011

Building 024

Start of construction - April 2013
Completion of construction - December 2013
Midpoint of construction - September 2013

Building 041

Start of construction - February 2013
Completion of construction - April 2014
Midpoint of construction - September 2013

BASIS OF COST REPORT

Conditions of Construction

The general contract will be competitively bid with qualified general and main subcontractors

There will not be small business set aside requirements

The contractor will be required to pay prevailing wages

There are no phasing requirements

The general contractor will have full access to the site during normal business hours

Existing buildings will be vacated and cleared prior to construction commencing

Basis of Escalation - the following rates are used to calculate compound escalation to the midpoint of construction for each building:

2009	1%
2010	3%
2011	4%
2012	5%
2013	5%
2014	6%

Partial years are pro-rated. These rates assume a gradual return to the underlying long-term historic rate of inflation in California. The current economic outlook is very uncertain and while these projected rates may - or may not - be realised, we recommend that these costs be included in the construction budget.

INCLUSIONS

The project consists of the construction of a new Research Support Building and the renovation of three existing building on the SLAC site:

Research Support Building (RSB) - a new 3 story building and associated site clearance and site improvements.

Building 003 - renovation of the upper floor of an existing three-level building.

Building 024 - partial renovation of an existing high-bay workshop / office building with partial mezzanine.

Building 041 - renovation of both floors and circulation space of an existing two story building. Additional work includes adding an elevator and limited modifications to the exterior glazing.

BIDDING PROCESS - MARKET CONDITIONS

This document is based on the measurement and pricing of quantities wherever information is provided and/or reasonable assumptions for other work not covered in the drawings or specifications, as stated within this document. Unit rates have been obtained from historical records and/or discussion with contractors. The unit rates reflect current bid costs in the area. All unit rates relevant to subcontractor work include the subcontractors overhead and profit unless otherwise stated. The mark-ups cover the costs of field overhead, home office overhead and profit and range from 15% to 25% of the cost for a particular item of work.

Pricing reflects probable construction costs obtainable in the project locality on the date of this statement of probable costs. This estimate is a determination of fair market value for the construction of this project. It is not a prediction of low bid. Pricing assumes competitive bidding for every portion of the construction work for all subcontractors and general contractors, with a minimum of 4 bidders for all items of subcontracted work and 6-7 general contractor bids. Experience indicates that a fewer number of bidders may result in higher bids, conversely an increased number of bidders may result in more competitive bids.

Since Davis Langdon has no control over the cost of labor, material, equipment, or over the contractor's method of determining prices, or over the competitive bidding or market conditions at the time of bid, the statement of probable construction cost is based on industry practice, professional experience and qualifications, and represents Davis Langdon's best judgment as professional construction consultant familiar with the construction industry. However, Davis Langdon cannot and does not guarantee that the proposals, bids, or the construction cost will not vary from opinions of probable cost prepared by them.

EXCLUSIONS

Contractual items

Compression of schedule, premium or shift work, and restrictions on the contractor's working hours
Design, testing, inspection or construction management fees
Architectural and design fees
Scope change and post contract contingencies
Permit fees (including Ch.17 Inspections and Independent Structural Review)
Assessments, taxes, finance, legal and development charges
Builder's risk, project wrap-up and other owner provided insurance program
Land and easement acquisition
Cost escalation beyond that identified in the "Basis of Cost Model" at the front of this report.

Work Scope Items

Hazardous material handling, disposal and abatement, except where specifically identified
Mitigation of existing haz-mat issues relating to biological, radiological and other hazards due to past laboratory usage.
Mitigation of existing underground haz-mat issues (contaminated soils, etc.)
Removal of existing radiation source in Building 024
Environmental impact mitigation
Premium foundation systems - piers, piles, over-excavation etc.
Relocation of existing underground vaults / utilities except as specifically identified
Removal and relocation of (E) switchgear / equipment racks in Building 003
Removal of abandoned site utilities, except as specifically noted.
Seismic Upgrades to existing buildings

Building Equipment & Services

Owner supplied and installed furniture, fixtures and equipment except as specifically identified
Telecoms & Security equipment and devices, except conduit and panel boards
Audio visual equipment
Specialty fire suppression systems (FM-200 and similar)
Raised floor system w/ underfloor MEP services

PROJECT AREAS

	New RSB	Building 003	Building 024	Building 041
	Scheme 3			
Enclosed Areas	SF	SF	SF	SF
First floor	22,295	0 ²	24,000	24,835
Second Floor	20,875 ¹	0 ²	8,000	23,535 ³
Third floor	20,875 ¹	6,920	0	0
SUBTOTAL, Enclosed Occupied Area **	64,045	6,920	32,000	48,370
	¹ Atrium open areas deducted	² Unaltered lower floors excluded		³ Lobby open area deducted
Covered area				
Mech. Penthouse (unconditioned space)	4,100	0	0	0
Soffits / balconies	790	0	0	290
SUBTOTAL, Covered Area <i>(measured @ ½ Value)</i>	2,445	0	0	145
TOTAL GROSS FLOOR AREA	66,490	6,920	32,000	48,515

** Penthouse space excluded

Control Quantities	New RSB	Building 003	Building 024	Building 041
	Scheme 3			
Number of stories	3	3	2	2
Enclosed Area	64,045	6,920	32,000	48,370
Covered Area	790	0	0	290
Gross Area	66,490	6,920	32,000	48,515
Footprint Area	22,295	6,920	24,000	24,835
Elevators (ea.)	1	n/a	1	1

OVERALL SUMMARY

Project Component	Gross Floor Area	\$ / SF	\$x1,000
Research Support Building	66,490 SF	580.53	38,599
Building 003	6,920 SF	401.65	2,779
Building 024	32,000 SF	140.82	4,506
Building 041	48,515 SF	380.01	18,436

Budget Construction Cost	February 2012	64,322
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Alternates

Alternate 1: (RSB) In-slab radiant in combination with displacement ventilation	(722)
Alternate 1A: (RSB) Dedicated on-site water cooled chiller in lieu of campus provided chilled water	(7)
Alternate 2: (RSB) In-slab radiant to open offices & atrium spaces only	(337)
Alternate 3: (Building 041) displacement ventilation with radiant ceiling panels	597
Alternate 3A: (Building 041) displacement ventilation with chilled beams	398
Alternate 4: (Building 024) additional laboratory area redeveloped	133

Please refer to the Inclusions and Exclusions sections of this report

RESEARCH SUPPORT BUILDING COMPONENT SUMMARY

SCHEME 3

Gross Area: 66,490 SF

		\$/SF	\$x1,000
1. Foundations		3.69	246
2. Vertical Structure		22.03	1,465
3. Floor & Roof Structures		41.11	2,734
4. Exterior Cladding		64.33	4,277
5. Roofing, Waterproofing & Skylights		8.86	589
Shell (1-5)		140.02	9,310
6. Interior Partitions, Doors & Glazing		37.30	2,480
7. Floor, Wall & Ceiling Finishes		30.21	2,009
Interiors (6-7)		67.51	4,488
8. Function Equipment & Specialties		31.39	2,087
9. Stairs & Vertical Transportation		8.20	545
Equipment & Vertical Transportation (8-9)		39.59	2,632
10. Plumbing Systems		8.27	550
11. Heating, Ventilating & Air Conditioning		48.51	3,226
12. Electric Lighting, Power & Communications		38.29	2,546
13. Fire Protection Systems		6.50	432
Mechanical & Electrical (10-13)		101.57	6,753
Total Building Construction (1-13)		348.69	23,184
14. Site Preparation & Demolition		9.58	637
15. Site Paving, Structures & Landscaping		18.75	1,247
16. Utilities on Site		23.97	1,594
Total Site Construction (14-16)		52.30	3,477
TOTAL BUILDING & SITE (1-16)		400.98	26,661
General Conditions	15.00%	60.14	3,999
Contractor's Overhead & Profit or Fee	5.00%	23.06	1,533
PLANNED CONSTRUCTION COST		May 2009	484.18
Contingency for Development of Design	10.00%	48.41	3,219
Escalation to Midpoint (February 2012)	9.00%	47.93	3,187
RECOMMENDED BUDGET		February 2012	580.53

<i>Research Support Building</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
<u>1. Foundations</u>				
Shallow spread footings				
Grade beams at SMRF locations 7' 0"w x 3' 6"d typ.	460	LF	430	197,800
Column Bases				
12' 0" x 12' 0" x 3' 6"d	2	EA	9,000.00	18,000
7' 0" x 7' 0" x 2' 6"d	5	EA	2,350.00	11,750
6' 0" x 6' 0" x 2' 0"d	1	EA	1,425.00	1,425
5' 0" x 5' 0" x 1' 6"d	2	EA	780.00	1,560
Elevator pit, complete	1	EA	15,000.00	15,000
				245,535
<u>2. Vertical Structure</u>				
Gravity columns				
WF steel framing	17	TONS	3,500.00	59,500
Pipe column at entrance (AESS)	2	TONS	4,500.00	7,650
Moment frame columns	342	TONS	3,500.00	1,197,000
Structural support at lobby curtain wall system, allowance	2,275	SF	10.00	22,750
Skylight / penthouse columns and posts, allowance	4	TONS	3,500.00	14,000
Misc. metals - cladding attachment etc.	40,965	SF	4.00	163,860
				1,464,760
<u>3. Floor and Roof Structure</u>				
Floors				
Slab on grade - 8" thick structural slab	22,295	SF	12.00	267,540
Edge thickening, 2' 0"w x 1' 6"d typ.	709	LF	75.00	53,175
Local slab thickening at column bases	44	LOC	200.00	8,800
Slab depressions, <= 6" deep	156	LF	50.00	7,800

<i>Research Support Building</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Suspended floors				
Structural steel frame				
WF steel framing	286	TONS	3,500.00	1,001,000
Moment connections	112	EA	500.00	56,000
Metal deck w/ concrete topping				
Floor deck - 3 1/2" NW concrete on 3" deep 18 ga. metal deck	42,740	SF	10.00	427,400
Roof				
Structural steel frame				
WF steel framing				
Main roof / penthouse floor	137	TONS	3,500.00	479,500
Penthouse roof	5	TONS	3,500.00	17,500
Moment connections	56	EA	500.00	28,000
Steel trellis over west terrace (AESS)	8	TONS	4,500.00	36,000
Metal deck w/ concrete topping				
Typical roof - 3 1/2" NW concrete on 3" deep 18 ga. metal deck	19,180	SF	10.00	191,800
Penthouse - 4 1/2" NW concrete on 3" deep 18 ga. metal deck	2,000	SF	11.00	22,000
Penthouse roof - 2" deep 18 ga. metal deck (no concrete topping)	2,000	SF	4.50	9,000
Misc. metals	64,045	GSF	2.00	128,090
				2,733,605

4. Exterior Cladding

Rainscreen system				
Terra Cotta rainscreen tiles on aluminum subframing	7,320	SF	50.00	366,000
Glazing incorporated into rainscreen system - including operable panels	3,855	SF	90.00	346,950
Curtain wall glazing				
South elevation w/ baguette sunscreens	3,045	SF	150.00	456,750
Lobby glazing	2,275	SF	110.00	250,250
Other locations - typical	15,915	SF	90.00	1,432,350
Clerestory glazing at atrium	750	SF	80.00	60,000
Metal panel cladding				
Penthouse	3,940	SF	50.00	197,000
Atrium pop-up	500	SF	50.00	25,000
Elevator penthouse, allowance	600	SF	50.00	30,000
Wallbase, to match terra cotta rainscreen	560	SF	65.00	36,400

<i>Research Support Building</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Wall framing / sheathing	16,775	SF	20.00	335,500
Sunscreens				
Horizontal at South elevation	383	LF	400.00	153,200
Wood screens at lobby / North elev.	2,915	SF	40.00	116,600
Doors				
Glazed entry doors				
Double	5	PR	10,000	50,000
Single	0	EA	5,000.00	
Service doors, HM				
Double, allow for penthouse	2	PR	3,500.00	7,000
Single, east stair	1	EA	2,500.00	2,500
Roll up door at receiving area	1	EA	17,000	17,000
Soffits				
West terrace roof overhang - architectural treatment	1,415	SF	35.00	49,525
East entrance canopy / balcony soffit	670	SF	35.00	23,450
South entrance	120	SF	35.00	4,200
Guardrails				
West terrace	70	LF	500.00	35,000
East balcony	55	LF	500.00	27,500
Misc. trim etc.	40,965	SF	5.00	204,825
Entrance canopies / upgrades	1	LS	50,000.00	50,000
				4,277,000

5. Roofing, Waterproofing & Skylights

Roofing				
Single-ply / membrane, including insulation flashing sheet / metal	19,200	SF	13.50	259,200
Penthouse - metal panel	2,000	SF	30.00	60,000
Terrace paving - pedestal pavers over waterproofing				
Lobby / green roof terrace	450	SF	50.00	22,500
East balcony	670	SF	50.00	33,500

Research Support Building	Quantity	Unit	Rate	Total
Green roof (approx. 50% of total)	400	SF	30.00	12,000
Equipment pad / curbs, allowance	1	LS	30,000.00	30,000
Waterproofing				
Waterproof elevator pit	1	LS	5,000.00	5,000
Caulking / sealing	66,490	GSF	1.50	99,735
Skylights				
Skylights - fixed	560	SF	120.00	67,200
Smoke evacuation (atrium)				See HVAC system
				589,135

6. Interior Partitions, Doors & Glazing

Partitions				
Standard - unrated	75,665	SF	13.00	983,645
Rated shaftwall	13,975	SF	14.00	195,650
Pipe chase	572	SF	16.00	9,152
Column casings, selected areas	688	LF	95.00	65,360
Guardrail at atrium / lobby	293	LF	450.00	131,850
Doors				
SC wood doors, including HM frames, hardware and finishing	220	EA	1,550.00	341,000
Glass doors at conference rooms / library	22	EA	2,000.00	44,000
Interior Glazing				
Interior glazed partitions	8,580	SF	60.00	514,800
Clerestory glazing at offices	3,240	SF	60.00	194,400
				2,479,857

7. Floor, Wall & Ceiling Finishes

Office / General / Circ	51,440	GSF	25.00	1,286,000
Conference rooms	4,200	GSF	40.00	168,000
Lobby	1,185	GSF	95.00	112,575
Bathrooms	1,725	GSF	65.00	112,125
Stair cores	1,590	GSF	35.00	55,650

<i>Research Support Building</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Kitchen / breakroom	1,045	GSF	30.00	31,350
MEP rooms / storage	2,860	GSF	15.00	42,900
Premium for wood ceiling in common areas	10,000	SF	20.00	200,000
				2,008,600

8. Function Equipment & Specialties

Bathrooms				
Stalls, WC	18	EA	1,500.00	27,000
Vanity / mirror	54	LF	300.00	16,200
Accessories	18	SETS	800.00	14,400
Stalls, shower	2	EA	2,500.00	5,000
Shower accessories	2	SETS	1,500.00	3,000
Lockers	8	SETS	350.00	2,800
Casework and cabinetry				
Kitchenette / breakroom				
Wall mounted, w/ base cabs. and counter	60	LF	700.00	42,000
Island counter	30	LF	500.00	15,000
Office Furniture (usually FF&E budget)	291	PERS	5,600.00	1,629,600
<i>Includes individual office furniture and common areas</i>				
Misc Equipment				
Signage, directories, FEC's, entry mats, corner guards etc.	66,490	GSF	5.00	332,450
				2,087,450

9. Stairs & Vertical Transportation

Stairs				
Atrium stairs	2	FLT	60,000.00	120,000
Exit stairs	5	FLT	25,000.00	125,000

<i>Research Support Building</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Elevator Allow 3,500# 3-stop hydraulic elevator (approx. 6'x8' cab)	2	EA	150,000.00	300,000
				545,000

10. Plumbing Systems

Sanitary fixtures and local connection pipework - including motion activated faucets and flushing valves (allow)	50	EA	1,875.00	93,750
Sanitary waste, vent and service pipework Floor drains and sinks, < = 6", trap primers, including waste, vent and cold water pipework systems - (allow)	15	EA	3,500.00	52,500
Hose bibs, 1/2" (allow)	1	LS	10,000.00	10,000
Rough-in sanitary fixtures, including waste, vent, domestic hot and cold water systems	50	EA	3,500.00	175,000
Pressure reduction stations, backflow prevention, < 8"	1	LS	12,500.00	12,500
Mechanical make-up systems	1	LS	2,500.00	2,500
Reclaimed water	1	LS	67,500.00	67,500
Water treatment, storage and circulation Including gas-fired domestic hot water heating equipment, pumps and storage	1	LS	10,000.00	10,000
Fuel oil storage, distribution				<i>Day tank</i>
Roof drainage (allow 2 per 1,750 SF) Roof/overflow drains, 6"	28	EA	475.00	13,300
Drain pipework, fittings, < = 8"	1,000	LF	75.00	75,000
Gas, pipework, fittings, seismic shut-off Including pipework, fittings, valves, specialties and seismic requirements	1	LS	37,500.00	37,500
				549,550

11. Heating, Ventilation & Air Conditioning

Heat generation and chilling equipment Cooling Cooling towers, induced-draft, variable speed, BAC VT	120	Ton	250.00	30,000
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Research Support Building	Quantity	Unit	Rate	Total
Chemical water treatment	1	LS	13,500.00	13,500
Heating				
Boilers, gas fired, roof-mounted, 95-97% high-efficiency condensing type	1,040	Mbth	33.50	34,840
Chemical water treatment	1	LS	10,000.00	10,000
Thermal expansion compensation and circulation				
Expansion tanks/air separators	1	LS	7,500.00	7,500
Pumps				
Chilled water, 5 hp	4	EA	6,750.00	27,000
HHW, 2 hp	2	EA	3,250.00	6,500
Variable speed drives	6	EA	3,550.00	21,300
Vibration isolation	6	EA	1,250.00	7,500
Piping, fitting, valves and insulation Including chilled and heating hot water pipework, fittings (2-pipe to chilled beams), equipment hook-ups, insulation and condensate drainage	64,045	SF	10.00	640,450
Radiant heating and cooling				
Chilled beams (active type)	1,750	LF	450.00	787,500
Air handling equipment				
Air handling units, (DOAS), insulated, cooling and heating, supply and return fans, economizer mixing boxes, variable volume, pre and final-filter, sound attenuation	36,000	CFM	7.50	270,000
Heat recovery - "run-around" coil/heat pipe	36,000	CFM	3.50	126,000
24/7 cooling to server, tele/data rooms etc.	4	EA	7,500.00	30,000
Duct-mounted reheat coils	18	EA	750.00	13,500
Air distribution and return				
Galvanized sheetmetal ductwork (allow 0.5#/SF)	35,000	LB	9.00	315,000
Flexible ductwork	750	LF	15.00	11,250
Dampers				
Volume	150	EA	125.00	18,750
Fire/smoke	1	LS	35,000.00	35,000
Insulation	15,000	SF	4.50	67,500
Diffusers, registers and grilles	64,045	SF	0.75	48,034
Controls and instrumentation, DDC, window switches and CO2 sensors (allow per eng.)	300	pts	1,350.00	405,000
Testing and balancing	600	HR	105.00	63,000

<i>Research Support Building</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
LEED commissioning interface	300	HR	105.00	31,500
Unit ventilation				
Toilet exhaust	1	LS	5,000.00	5,000
Atrium smoke evacuation (allow)	100,000	cfm	2.00	200,000
				3,225,624

12. Electrical Lighting, Power & Communication

Main service and distribution, including HV -	1,000	KW	325.00	325,000
Emergency power				
Life-safety battery back-up only	1	LS	20,000.00	20,000
Machine and equipment power				
Connections and switches, including conduit and cable				
Including elevators, mechanical equipment, loading dock equipment, specialty equipment, fire, tele/data, audio/visual, security power and miscellaneous connections, < 225 A	1	LS	100,000.00	100,000
Convenience power				
Panelboard breakers, 120 V, TVSS	504	EA	97.50	49,140
Feeder conduit and cable	1,200	LF	45.00	54,000
Receptacles, including conduit and cable (1/75 SF)	850	EA	325.00	276,250
Lighting				
Panelboard breakers, 277 V (4 ea per level)	420	EA	115.00	48,300
Feeder conduit and cable	1,000	LF	48.50	48,500
Fixtures/switching, including conduit and cable	64,045	SF	12.00	768,540
Lighting and power specialties				
Lighting controls, including daylight harvesting at perimeters and dimming ballasts	1	LS	100,000.00	100,000
Grounding	1	LS	12,750.00	12,750
Cable tray				n/a
IDF/MDF rough-in	3	EA	15,500.00	46,500
Communications conduit only, < = 4"	1	LS	45,000.00	45,000
Copper/fiber 'back-bone'	1	LS	50,000.00	50,000
Office count	291	EA	875.00	254,625

<i>Research Support Building</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Data switches	1	LS	40,000.00	40,000
Audio/visual - conduit only	1	LS	35,000.00	35,000
Fire alarm system	64,045	SF	3.50	224,158
Security - conduit only	64,045	SF	0.75	48,034
				2,545,796

13. Fire Protection Systems

Automatic wet fire sprinklers and combined stand-pipe fire suppression systems - complete	66,490	GSF	6.50	432,185
				432,185

14. Site Preparation & Building Demolition

Site Clearance / grading	76,315	SF	1.50	114,473
Trailer Demo	29,400	GSF	10.00	294,000
Trailer Hazmat	29,400	GSF	5.00	147,000
Protect (E) trees	4	EA	2,000.00	8,000
Stormwater run-off control	1	LS	20,000.00	20,000
Building pad prep.	26,754	SF	2.00	53,508
				636,981

15. Site Paving, Structures & Landscaping

Paving				
AC Parking, including curbs / striping				
Standard AC paving - driveways	11,955	SF	10.00	119,550
Pervious AC paving - parking areas	11,955	SF	15.00	179,325
Plaza paving / perimeter path - decorative CIP concrete	9,480	SF	15.00	142,200
Upgrade pavement base in fire lane zones	7,875	SF	5.00	39,375
Sdewalk / curb (CIP concrete)	2,940	SF	10.00	29,400

<i>Research Support Building</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Landscaping				
Groundcover / planted areas / topsoil	16,690	SF	20.00	333,800
Trees	60	EA	750.00	45,000
Irrigation	<i>No permanent irrigation provided</i>			
Site Amenities				
Allowance for site furniture - seating, bike racks etc.	1	LS	50,000.00	50,000
Utility enclosure / pads	<i>Not required</i>			
Site drainage				
Underground pipework, RC				
24"	640	LF	100.00	64,000
< = 15"	480	LF	75.00	36,000
Area drains	8	EA	1,350.00	10,800
Manholes	5	EA	12,500.00	62,500
Connections to existing	1	EA	5,000.00	5,000
Remove existing, < = 24"	320	LF	25.00	8,000
Site lighting	60,895	SF	2.00	121,790
				1,246,740

16. Utilities on Site

Mechanical				
Thermal storage systems including tanks, pumps, heat exchangers, pipework, fittings and controls	100,000	gal.	7.50	750,000
Pipework, fittings, preinsulated connections < = 8" (allow)	3,000	LF	135.00	405,000
Valves and specialties	1	LS	77,500.00	77,500

<i>Research Support Building</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Water mains, domestic and fire				
Domestic and fire water, < = 6"	250	LF	75.00	18,750
Valves and specialties	1	LS	13,750.00	13,750
Connections to existing	1	LS	10,000.00	10,000
Gas				
Natural gas piping, < = 6" (allow)	250	LF	67.50	16,875
Valves and specialties	1	LS	12,500.00	12,500
Connections to existing	1	LS	5,000.00	5,000
Sewer				
Underground pipework, < = 24"	800	LF	85.00	68,000
Manholes	5	EA	10,000.00	50,000
Connections to existing	1	LS	5,000.00	5,000
Remove (E)	1	LS	10,000.00	10,000
Electrical				
Mains power				
Underground - concrete encased 12 kV feeder conduit only (2) 5"	250	LF	135.00	33,750
Break into existing manhole and connect	1	LS	15,000.00	15,000
Telecommunications/signals				
Underground - concrete encased conduit only, (5) 2", relocate existing to building perimeter (allow)	350	LF	250.00	87,500
Break into existing manhole and connect	1	LS	15,000.00	15,000
				1,593,625

BUILDING 003 COMPONENT SUMMARY

	Gross Area: 6,920 SF		
		\$/SF	\$x1,000
1. Foundations		0.00	0
2. Vertical Structure		0.00	0
3. Floor & Roof Structures		11.56	80
4. Exterior Cladding		19.35	134
5. Roofing, Waterproofing & Skylights		14.00	97
Shell (1-5)		44.91	311
6. Interior Partitions, Doors & Glazing		27.37	189
7. Floor, Wall & Ceiling Finishes		33.16	229
Interiors (6-7)		60.52	419
8. Function Equipment & Specialties		30.62	212
9. Stairs & Vertical Transportation		0.00	0
Equipment & Vertical Transportation (8-9)		30.62	212
10. Plumbing Systems		9.45	65
11. Heating, Ventilating & Air Conditioning		49.25	341
12. Electric Lighting, Power & Communications		38.84	269
13. Fire Protection Systems		6.50	45
Mechanical & Electrical (10-13)		104.03	720
Total Building Construction (1-13)		240.09	1,661
14. Site Preparation & Demolition		19.16	133
15. Site Paving, Structures & Landscaping		6.14	43
16. Utilities on Site		4.34	30
Total Site Construction (14-16)		29.63	205
TOTAL BUILDING & SITE (1-16)		269.72	1,866
General Conditions	15.00%	40.46	280
Contractor's Overhead & Profit or Fee	10.00%	31.07	215
PLANNED CONSTRUCTION COST	May 2009	341.25	2,361
Contingency for Development of Design	10.00%	34.10	236
Escalation to Midpoint (July 2012)	7.00%	26.30	182
RECOMMENDED BUDGET	July 2011	401.65	2,779

<i>Building 003</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
<u>1. Foundations</u>				
<i>No work anticipated</i>				
				0
<u>2. Vertical Structure</u>				
<i>No work anticipated</i>				
				0
<u>3. Floor and Roof Structure</u>				
Floor Structure				
Allowance for filling (E) openings thru' floor deck under (E) electrical cabinets	1	LS	50,000.00	50,000
Roof Structure				
Allowance for (N) openings thru' roof deck for MEP services	1	LS	10,000.00	10,000
Equipment pads / curbs / framing on roof for (N) MEP equipment, allowance	1	LS	20,000.00	20,000
				80,000
<u>4. Exterior Cladding</u>				
Exterior walls				
Furring / insulation to interior face of (E) exterior wall panels	6,560	SF	15.00	98,400
Doors				
(N) entry doors	1	PR	7,500	7,500
Windows, allowance				
(N) punched windows, including local framing modifications, flashing and caulking. Windows to be approx. 4' x 6' ea.	8	EA	3,500.00	28,000
				133,900

<i>Building 003</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
<u>5. Roofing, Waterproofing & Skylights</u>				
Roofing / waterproofing				
Replace (E) roof finishes with (N) roof membrane, insulation and flashing	6,920	SF	14.00	96,880
				96,880
<u>6. Interior Partitions, Doors & Glazing</u>				
Partitions				
Standard - unrated	7,800	SF	13.00	101,400
Rated shaftwall	1,924	SF	14.00	26,936
Pipe chase	234	SF	16.00	3,744
Doors				
SC wood doors, including HM frames, hardware and finishing	25	EA	1,550.00	38,750
Glass doors at conference rooms / library	1	EA	2,000.00	2,000
Interior Glazing				
Interior glazed partitions	156	SF	60.00	9,360
Door sidelights - typical at offices	12	EA	600.00	7,200
				189,390
<u>7. Floor, Wall & Ceiling Finishes</u>				
Office / General / Circ	3,088	GSF	25.00	77,200
Training rooms	1,750	GSF	35.00	61,250
Lobby	452	GSF	95.00	42,940
Bathrooms	430	GSF	65.00	27,950
Kitchen / breakroom	140	GSF	30.00	4,200
MEP rooms / storage	1,060	GSF	15.00	15,900
				229,440

<i>Building 003</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
8. Function Equipment & Specialties				
Bathrooms				
Stalls	5	EA	1,500.00	7,500
Vanity / mirror	12	LF	300.00	3,600
Accessories	5	SETS	800.00	4,000
Casework and cabinetry				
Kitchenette / breakroom	10	LF	700.00	7,000
Mail / copy room	13	LF	700.00	9,100
Office Furniture (usually FF&E budget) <i>Includes individual office furniture and common areas</i>	15	PERS	5,600.00	84,000
Operable partition in training room	46	LF	1,350.00	62,100
Misc Equipment Signage, directories, FEC's, entry mats, corner guards etc.	6,920	GSF	5.00	34,600
				211,900
9. Stairs & Vertical Transportation				
<i>No work anticipated</i>				
				0
10. Plumbing Systems				
Plumbing system - complete, including replacement of existing sanitary fixtures, associated waste, vent and domestic service pipework, gas	6,920	GSF	8.00	55,360
Reclaimed water	1	LS	10,000.00	10,000
Tie into (E) distribution to lower two floors				<i>included above</i>
				65,360

<i>Building 003</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
<u>11. Heating, Ventilation & Air Conditioning</u>				
Heat generation and chilling equipment				
Cooling				
Chillers, electric, centrifugal, water-cooled	60	Ton	575.00	34,500
Cooling towers, induced-draft, variable speed, BAC VT	60	Ton	350.00	21,000
Chemical water treatment	1	LS	13,500.00	13,500
Heating				<i>Existing</i>
Thermal expansion compensation and circulation				
Expansion tanks/air separators				<i>Existing</i>
Pumps				
Chilled water, 3 hp	2	EA	3,750.00	7,500
Variable speed drives	2	EA	2,550.00	5,100
Vibration isolation	2	EA	1,000.00	2,000
Replace (E) roof-top air handling unit - air distribution, controls and unit ventilation/exhaust	6,920	SF	35.00	242,200
Trade demolition	1	LS	15,000.00	15,000
				340,800
<u>12. Electrical Lighting, Power & Communication</u>				
Electrical System - complete	6,920	GSF	33.50	231,820
Data / telecoms system				
Office count	15	EA	1,000.00	15,000
Data Switches	1	LS	15,000.00	15,000
Security system				
Card reader system - conduit only	6,920	GSF	1.00	6,920
				268,740

<i>Building 003</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
<u>13. Fire Protection Systems</u>				
Fire sprinkler system - reconfigure existing	6,920	GSF	6.50	44,980
				44,980
<u>14. Site Preparation & Building Demolition</u>				
Interior Demolition				
Soft demo of all interior partitions / doors, finishes and MEP systems in North end of building	6,920	SF	10.00	69,200
Hazmat abatement , including removal of finishes in open switchgear area	6,920	SF	5.00	34,600
Exterior Demo				
Remove (E) roof finishes	6,920	SF	3.00	20,760
Cut holes for (N) windows in exterior metal panel walls, allowance	8	LOC	1,000.00	8,000
				132,560
<u>15. Site Paving, Structures & Landscaping</u>				
Accessible parking spaces				
Replace (E) accessible parking spaces with (N) conforming parking spaces, including regrading/paving, striping and signage	1	SPC	2,500.00	2,500
Landscape and paving				
Entry paving at main entrance	800	SF	50.00	40,000
				42,500
<u>16. Utilities on Site</u>				
Allowance for site utilities / connections	1	LS	30,000.00	30,000
				30,000

BUILDING 024 COMPONENT SUMMARY

	Gross Area:	9,345 SF	*
		\$/SF	\$x1,000
1. Foundations		1.93	18
2. Vertical Structure		4.49	42
3. Floor & Roof Structures		1.87	18
4. Exterior Cladding		6.42	60
5. Roofing, Waterproofing & Skylights		1.61	15
Shell (1-5)		16.32	153
6. Interior Partitions, Doors & Glazing		33.18	310
7. Floor, Wall & Ceiling Finishes		56.61	529
Interiors (6-7)		89.78	839
8. Function Equipment & Specialties		15.17	142
9. Stairs & Vertical Transportation		19.69	184
Equipment & Vertical Transportation (8-9)		34.86	326
10. Plumbing Systems		30.65	286
11. Heating, Ventilating & Air Conditioning		45.30	423
12. Electric Lighting, Power & Communications		52.06	487
13. Fire Protection Systems		6.34	59
Mechanical & Electrical (10-13)		134.34	1,255
Total Building Construction (1-13)		275.31	2,573
14. Site Preparation & Demolition		14.62	137
15. Site Paving, Structures & Landscaping		0.54	5
16. Utilities on Site		3.21	30
Total Site Construction (14-16)		18.37	172
TOTAL BUILDING & SITE (1-16)		293.67	2,744
General Conditions	15.00%	44.09	412
Contractor's Overhead & Profit or Fee	10.00%	33.81	316
PLANNED CONSTRUCTION COST	May 2009	371.58	3,472
Contingency for Development of Design	10.00%	37.13	347
Escalation to Midpoint (September 2015)	18.00%	73.52	687
RECOMMENDED BUDGET	September 2013	482.22	4,506

* Based on area of building undergoing significant renovation

<i>Building 024</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
<u>1. Foundations</u>				
Elevator				
Elevator pit, complete including demo of and tie-in to (E) slab	1	EA	18,000.00	18,000
				18,000
<u>2. Vertical Structure</u>				
Elevator shaft structural steel	12	TONS	3,500.00	42,000
				42,000
<u>3. Floor and Roof Structure</u>				
Floor Structure				
Modify (E) mezz. floor structure for (N) stair / elevator, allowance	300	SF	25.00	7,500
Roof Structure				
Allowance for (N) openings thru' roof deck for MEP services	1	LS	5,000.00	5,000
Equipment pads / curbs / framing on roof for (N) MEP equipment, allowance	1	LS	5,000.00	5,000
				17,500
<u>4. Exterior Cladding</u>				
Exterior walls				
Furring / insulation to interior face of (E) exterior wall panels (West elevation only)	3,000	SF	15.00	45,000
Doors				
(N) entry doors	2	PR	7,500	15,000
Windows				<i>no changes planned</i>
				60,000

<i>Building 024</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
5. Roofing, Waterproofing & Skylights				
Roofing / waterproofing				
Patch / repair (E) roof finishes locally as required for modified MEP penetrations, allowance	1	LS	10,000.00	10,000
Waterproofing to elevator pit	1	LS	5,000.00	5,000
Skylights				<i>not required</i>
				15,000

6. Interior Partitions, Doors & Glazing

Partitions				
Standard - unrated	11,760	SF	13.00	152,880
Rated shaftwall	2,632	SF	14.00	36,848
Pipe chase	308	SF	16.00	4,928
Column casings				<i>not required</i>
Hard ceiling over lab area				
Steel stud framing and gypboard ceiling over West side lab area	5,390	SF	12.00	64,680
Doors				
SC wood doors, including HM frames, hardware and finishing	26	EA	1,550.00	40,300
Interior Glazing				
Interior glazed partitions				<i>none included</i>
Door lights - allowance	26	EA	400.00	10,400
				310,036

7. Floor, Wall & Ceiling Finishes

Labs / Lab support / Circ	5,390	GSF	25.00	134,750
Lobby	2,080	GSF	95.00	197,600
Bathrooms	960	GSF	65.00	62,400
Stair cores	480	GSF	35.00	16,800
MEP rooms / storage	200	GSF	15.00	3,000

<i>Building 024</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Minor cosmetic upgrades to (E) areas	22,890	GSF	5.00	114,450
				529,000

8. Function Equipment & Specialties

Bathrooms				
Stalls	10	EA	1,500.00	15,000
Vanity / mirror	24	LF	300.00	7,200
Accessories	10	SETS	800.00	8,000
Casework and cabinetry				
Lab casework, wall mounted with base cabs / counters	50	LF	700.00	35,000
Office Furniture (usually FF&E budget) (Lab area only)	8	PERS	4,000.00	32,000
Misc Equipment				
Signage, directories, FEC's, entry mats, corner guards etc. in renovated areas only	8,910	GSF	5.00	44,550
				141,750

9. Stairs & Vertical Transportation

Stairs				
(N) Lobby stairs	1	FLT	60,000.00	60,000
ADA upgrades to (E) interior and exterior stairs	2	FLTS	12,000.00	24,000
Elevator				
Allow 3,500# 2-stop hydraulic elevator (approx. 6'x8' cab)	1	EA	100,000.00	100,000
				184,000

10. Plumbing Systems

Plumbing system - complete, including replacement of existing sanitary fixtures, associated waste, vent and domestic service pipework, gas - new offices with limited shop space & small room for radio active chemical storage	9,110	GSF	15.00	136,650
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<i>Building 024</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Laboratory pipework	5,390	SF	25.00	134,750
Reclaimed water	1	LS	15,000.00	15,000
				286,400

11. Heating, Ventilation & Air Conditioning

Heat generation and chilling equipment				
Cooling				
Chillers, electric, centrifugal, water-cooled				<i>Existing</i>
Cooling towers, induced-draft, variable speed, BAC VT				<i>Existing</i>
Chemical water treatment				<i>Existing</i>
Heating				<i>Existing</i>
Thermal expansion compensation and circulation				
Expansion tanks/air separators				<i>Existing</i>
Pumps				
Chilled water, 5 hp				<i>Existing</i>
Variable speed drives				<i>Existing</i>
Vibration isolation				<i>Existing</i>
Replace - air distribution, controls and unit ventilation/exhaust	9,110	SF	30.00	273,300
Fume hood exhaust fans, controls and ductwork	1	LS	150,000.00	150,000
				423,300

12. Electrical Lighting, Power & Communication

Main service and distribution, including HV - 480/120 V switchgear, 480 V main switchboards, metering, 480-120/208 V distribution switchboards, motor control, transformers, bus duct and feeders	750	kVA	200.00	150,000
Emergency power				<i>Existing</i>
Life-safety battery back-up only				
Machine and equipment power				

Building 024	Quantity	Unit	Rate	Total
Connections and switches, including conduit and cable Including elevators, mechanical equipment, loading dock equipment, specialty equipment, fire, tele/data, audio/visual, security power and miscellaneous connections, < 225 A	1	LS	27,500.00	27,500
Convenience power				
Panelboard breakers, 120 V, TVSS	84	EA	97.50	8,190
Feeder conduit and cable	200	LF	45.00	9,000
Receptacles, including conduit and cable (1/75 SF)	125	EA	325.00	40,625
Lighting				
Panelboard breakers, 277 V (4 ea per level)	84	EA	115.00	9,660
Feeder conduit and cable	200	LF	48.50	9,700
Fixtures/switching, including conduit and cable	9,110	SF	12.00	109,320
Lighting and power specialties				
Lighting controls, including daylight harvesting at perimeters and dimming ballasts	1	LS	15,000.00	15,000
Office count	41	EA	875.00	35,875
Data Switches	1	LS	20,000.00	20,000
Audio/visual - conduit only	1	LS	2,500.00	2,500
Fire alarm system	9,110	SF	3.00	27,330
Security - conduit only	9,110	SF	0.75	6,833
Trade demolition	1	LS	15,000.00	15,000
				486,533

13. Fire Protection Systems

Fire sprinkler system - reconfigure existing	9,110	GSF	6.50	59,215
				59,215

14. Site Preparation & Building Demolition

Interior Demolition

<i>Building 024</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Selective soft demo of interior partitions / doors, finishes and MEP systems in East side of building and lab area in West side of building	9,110	SF	10.00	91,100
Hazmat abatement , including removal of finishes in areas identified above	9,110	SF	5.00	45,550
Exterior Demo			<i>no changes planned</i>	
				136,650

15. Site Paving, Structures & Landscaping

Accessible parking spaces

Replace (E) accessible parking spaces with (N) conforming parking spaces, including regrading/paving, striping and signage

2	SPC	2,500.00	5,000
			5,000

16. Utilities on Site

Allowance for site utilities / connections

1	LS	30,000.00	30,000
			30,000

BUILDING 041 COMPONENT SUMMARY

	Gross Area: 48,515 SF	\$/SF	\$x1,000
1. Foundations		0.31	15
2. Vertical Structure		1.46	71
3. Floor & Roof Structures		2.47	120
4. Exterior Cladding		12.63	613
5. Roofing, Waterproofing & Skylights		7.82	379
Shell (1-5)		24.69	1,198
6. Interior Partitions, Doors & Glazing		32.55	1,579
7. Floor, Wall & Ceiling Finishes		30.21	1,466
Interiors (6-7)		62.76	3,045
8. Function Equipment & Specialties		28.86	1,400
9. Stairs & Vertical Transportation		3.55	172
Equipment & Vertical Transportation (8-9)		32.41	1,572
10. Plumbing Systems		7.20	349
11. Heating, Ventilating & Air Conditioning		42.89	2,081
12. Electric Lighting, Power & Communications		36.10	1,752
13. Fire Protection Systems		6.50	315
Mechanical & Electrical (10-13)		92.69	4,497
Total Building Construction (1-13)		212.55	10,312
14. Site Preparation & Demolition		14.73	715
15. Site Paving, Structures & Landscaping		3.56	173
16. Utilities on Site		0.62	30
Total Site Construction (14-16)		18.91	917
TOTAL BUILDING & SITE (1-16)		231.46	11,229
General Conditions	15.00%	34.71	1,684
Contractor's Overhead & Profit or Fee	10.00%	26.61	1,291
PLANNED CONSTRUCTION COST	May 2009	292.78	14,204
Contingency for Development of Design	10.00%	29.27	1,420
Escalation to Midpoint (September 2013)	18.00%	57.96	2,812
RECOMMENDED BUDGET	September 2013	380.01	18,436

<i>Building 043</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
<u>1. Foundations</u>				
Elevator				
Elevator pit, complete	1	EA	15,000.00	15,000
				15,000
<u>2. Vertical Structure</u>				
Structural Allowance	1	LS	50,000.00	50,000
Elevator shaft structural steel, allowance	6	TONS	3,500.00	21,000
				71,000
<u>3. Floor and Roof Structure</u>				
Structural Allowance	1	LS	50,000.00	50,000
Floor Structure				
Modify (E) floor / roof structure at (N) elevator locations, allowance	2	LOC	10,000.00	20,000
Roof Structure				
Allowance for (N) openings thru' roof deck for MEP services	1	LS	20,000.00	20,000
Equipment pads / curbs / framing on roof for (N) MEP equipment, allowance	1	LS	30,000.00	30,000
				120,000
<u>4. Exterior Cladding</u>				
New perimeter wall / glazing				
Curtain wall - frameless glass system				
Exterior elevations	2,400	SF	150.00	360,000
Courtyard elevations	1,200	SF	150.00	180,000
Wall backing (30% of gross)	1,080	SF	20.00	21,600

<i>Building 043</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Elevator penthouse / over-run, allowance	1	LS	20,000.00	20,000
Exterior doors				
Doors - entry	4	EA	5,000.00	20,000
Doors - service, allowance	2	EA	2,500.00	5,000
Misc. trim etc.	2,400	SF	2.50	6,000
				612,600

5. Roofing, Waterproofing & Skylights

Roofing				
Single-ply / membrane, including insulation flashing sheet / metal	25,123	SF	12.00	301,476
Waterproofing				
Caulking / sealing	48,515	GSF	1.50	72,773
Waterproofing to elevator pit	1	LS	5,000.00	5,000
Skylights				<i>None included</i>
				379,249

6. Interior Partitions, Doors & Glazing

Partitions				
Standard - unrated	58,500	SF	13.00	760,500
Rated shaftwall	9,120	SF	14.00	127,680
Pipe chase	384	SF	16.00	6,144
Guardrail at atrium / lobby	15	LF	450.00	6,750
Doors				
SC wood doors, including HM frames, hardware and finishing	202	EA	1,550.00	313,100
Glass doors at conference rooms / library	7	EA	2,000.00	14,000

Building 043	Quantity	Unit	Rate	Total
Interior Glazing				
Interior glazed partitions	1,272	SF	60.00	76,320
Clerestory glazing at perimeter offices	3,000	SF	60.00	180,000
Door sidelights - typical at offices	158	EA	600.00	94,800
				1,579,294

7. Floor, Wall & Ceiling Finishes

Office / General / Circ	37,430	GSF	25.00	935,750
Conference rooms	2,810	GSF	40.00	112,400
Lobby	2,665	GSF	95.00	253,175
Bathrooms	1,350	GSF	65.00	87,750
Stair cores	400	GSF	35.00	14,000
Kitchen / breakroom	460	GSF	30.00	13,800
MEP rooms / storage	3,255	GSF	15.00	48,825
				1,465,700

8. Function Equipment & Specialties

Bathrooms				
Stalls	10	EA	1,500.00	15,000
Vanity / mirror	24	LF	300.00	7,200
Accessories	10	SETS	800.00	8,000
Stalls, shower	4	EA	2,500.00	10,000
Shower accessories	4	SETS	1,500.00	6,000
Lockers, allowance	8	SETS	350.00	2,800
Casework and cabinetry				
Kitchenette / breakroom	16	LF	700.00	11,200
Office Furniture (usually FF&E budget)	196	PERS	5,600.00	1,097,600
<i>Includes individual office furniture and common areas</i>				

Building 043	Quantity	Unit	Rate	Total
Misc Equipment Signage, directories, FEC's, entry mats, corner guards etc.	48,515	GSF	5.00	242,575
				1,400,375

9. Stairs & Vertical Transportation

Stairs				
(N) main lobby stair	1	FLT	60,000.00	60,000
ADA upgrades to (E) stairs	1	FLTS	12,000.00	12,000
Elevator				
Allow 3,500# 2-stop hydraulic elevator (approx. 6'x8' cab)	1	EA	100,000.00	100,000
				172,000

10. Plumbing Systems

Sanitary fixtures and local connection pipework - including motion activated faucets and flushing valves (allow)	30	EA	1,875.00	56,250
Sanitary waste, vent and service pipework				
Floor drains and sinks, < = 6", trap primers, including waste, vent and cold water pipework systems - (allow)				<i>Existing</i>
Hose bibs, 1/2" (allow)	1	LS	10,000.00	10,000
Rough-in sanitary fixtures, including waste, vent, domestic hot and cold water systems	30	EA	3,500.00	105,000
Reclaimed water	1	LS	57,500.00	57,500
Water treatment, storage and circulation				
Including gas-fired domestic hot water heating equipment, pumps and storage	1	LS	10,000.00	10,000
Roof drainage - repair (E)	1	LS	50,000.00	50,000
Gas, pipework, fittings, seismic shut-off				
Including pipework, fittings, valves, specialties and seismic requirements	1	LS	25,500.00	25,500
Trade demolition	1	LS	35,000.00	35,000
				349,250

<i>Building 043</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
11. Heating, Ventilation & Air Conditioning				
Heat generation and chilling equipment				<i>Existing</i>
Thermal expansion compensation and circulation				<i>Existing</i>
Piping, fitting, valves and insulation				
Connections to new multi-zone units and reheat coils	48,370	SF	4.00	193,480
Air handling equipment				
Air handling units, (IDEC), insulated, cooling and heating, supply and return fans, economizer mixing boxes, variable volume, pre and final-filter, sound attenuation (reduced capacity)	76,000	CFM	8.50	646,000
24/7 cooling to server, tele/data rooms etc.	2	EA	7,500.00	15,000
Duct-mounted reheat coils	45	EA	750.00	33,750
Air distribution and return				
Galvanized sheetmetal ductwork	45,000	LB	9.00	405,000
Flexible ductwork	2,000	LF	15.00	30,000
Dampers				
Volume	400	EA	125.00	50,000
Fire/smoke	1	LS	35,000.00	35,000
Insulation	25,000	SF	4.50	112,500
Diffusers, registers and grilles				
Thermafusers	48,370	SF	2.50	120,925
Controls and instrumentation, DDC, CO2 monitoring	48,370	SF	6.00	290,220
Testing and balancing	500	HR	105.00	52,500
LEED commissioning interface	250	HR	105.00	26,250
Unit ventilation				
Toilet exhaust	1	LS	5,000.00	5,000
Trade demolition	1	LS	65,000.00	65,000
				2,080,625

<i>Building 043</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
<u>12. Electrical Lighting, Power & Communication</u>				
Main service and distribution, including HV - 480/120 V switchgear, 480 V main switchboards, metering, 480-120/208 V distribution switchboards, motor control, transformers, bus duct and feeders	500	kVA	200.00	100,000
Emergency power Life-safety battery back-up only				
Machine and equipment power Connections and switches, including conduit and cable Including elevators, mechanical equipment, loading dock equipment, specialty equipment, fire, tele/data, audio/visual, security power and miscellaneous connections, < 225 A	1	LS	75,000.00	75,000
Convenience power Panelboard breakers, 120 V, TVSS	336	EA	97.50	32,760
Feeder conduit and cable	800	LF	45.00	36,000
Receptacles, including conduit and cable (1/75 SF)	650	EA	325.00	211,250
Lighting Panelboard breakers, 277 V (4 ea per level)	252	EA	115.00	28,980
Feeder conduit and cable	600	LF	48.50	29,100
Fixtures/switching, including conduit and cable	48,370	SF	12.00	580,440
Lighting and power specialties Lighting controls, including daylight harvesting at perimeters and dimming ballasts	1	LS	75,000.00	75,000
Cable tray				n/a
IDF/MDF rough-in	2	EA	15,500.00	31,000
Communications conduit only, < = 4"	1	LS	35,000.00	35,000
Copper/fiber 'back-bone'	1	LS	37,500.00	37,500
Office count	196	EA	875.00	171,500
Data Switches	1	LS	20,000.00	20,000
Audio/visual - conduit only	1	LS	25,000.00	25,000

<i>Building 043</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Fire alarm system	48,370	SF	3.50	169,295
Security - conduit only	48,370	SF	0.75	36,278
Trade demolition	1	LS	57,500.00	57,500
				1,751,603

13. Fire Protection Systems

Fire sprinkler system - reconfigure existing	48,515	GSF	6.50	315,348
				315,348

14. Site Preparation & Building Demolition

Interior Demolition

Soft demo of all interior partitions / doors, finishes and MEP systems	48,515	SF	7.00	339,605
Hazmat abatement	48,515	SF	5.00	242,575
Cut openings in floor / roof slabs for elevator	3	LOC	5,000.00	15,000

Exterior Demo

Remove (E) roof finishes	24,465	SF	3.00	73,395
Remove (E) exterior wall/glazing in areas of new curtain wall	2,400	SF	10.00	24,000
Demo (E) stairs and landings at East entrance	1	LS	20,000.00	20,000
				714,575

15. Site Paving, Structures & Landscaping

Accessible parking spaces

Replace (E) accessible parking spaces with (N) conforming parking spaces, including regrading/paving, striping and signage	2	SPC	2,500.00	5,000
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<i>Building 043</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
Landscape and paving				
Courtyard landscape upgrades	5,184	SF	15.00	77,760
Entry paving at main entrance	1,400	SF	50.00	70,000
Site Amenities				
Allowance for site furniture - seating, bike racks etc.	1	LS	20,000.00	20,000
				172,760

16. Utilities on Site

<i>Allowance for site utilities / connections</i>	1	LS	30,000.00	30,000
				30,000

<i>Alternates</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
<u>Alternate 1: (RSB) In-slab radiant in combination with displacement ventilation</u>				
In-slab radiant heating and chilling in combination with displacement ventilation	66,490	SF	(7.50)	(498,675)
Markups	44.78	%	(498,675.00)	(223,288)
				(721,963)
<u>Alternate 1A: (RSB) Dedicated on-site water cooled chiller in lieu of campus provided chilled water</u>				
DDT				
Pipework, fittings, preinsulated connections to (E) campus-loop, < = 8" (allow)	(400)	LF	187.50	(75,000)
Valves and specialties	(1)	LS	27,500.00	(27,500)
ADD				
Water cooled chiller and associated pipework, controls	65	ton	1,500.00	97,500
Markups	44.78	%	(5,000.00)	(2,239)
				(7,239)
<u>Alternate 2: (RSB) In-slab radiant to open offices & atrium spaces only</u>				
In-slab radiant to open offices and atrium only	66,490	SF	(3.50)	(232,715)
Markups	44.78	%	(232,715.00)	(104,201)
				(336,916)
<u>Alternate 3: (Building 041) displacement ventilation with radiant ceiling panels</u>				
Displacement ventilation with radiant ceiling panels	48,515	SF	7.50	363,863
Markups	64.18	%	363,862.50	233,526
				597,389

<i>Alternates</i>	<i>Quantity</i>	<i>Unit</i>	<i>Rate</i>	<i>Total</i>
<u>Alternate 3A: (Building 041) displacement ventilation with chilled beams</u>				
Displacement ventilation with chilled beams for	48,515	SF	5.00	242,575
Markups	64.18	%	242,575.00	155,684
				398,259
<u>Alternate 4: (Building 024) additional laboratory area redeveloped</u>				
Interior construction	1,000	SF	30.00	30,000
Equipment and specialties	1,000	SF	8.50	8,500
MEP systems	1,000	SF	30.50	30,500
Demolition	1,000	SF	12.00	12,000
Markups	64.20	%	81,000.00	52,005
				133,005