

OVERALL PROJECT ESTIMATE  
ECC INCLUDING DATA CENTER

	A	B	C	D	E	F	G
1	HARD COSTS	BASIS	ECC ESTIMATE	SUB-TOTALS		DATA CENTER ESTIMATE	DATA CENTER REMARKS
2	Division 1-33 Building Costs		\$10,766,232				
3	Site Development Costs		\$1,231,799				
4	Existing Building Abatement & Recycling Costs		\$280,000				
5							
6							
7	Subtotal Direct Cost		\$12,278,031			\$1,343,938	HSW ESTIMATE 07.08.10
8							
9	Contractor Overhead & Profit	1.95%	\$239,422			\$26,207	
10	Contractor Insurance	0.75%	\$92,085			\$10,080	
11	Contractor Bond	0.66%	\$80,421			\$8,803	
12							
13	Building & Site Development Subtotal		\$12,689,959			\$1,389,027	
14							
15	Estimating Contingency	12.00%	\$1,522,795			\$166,683	
16	Construction Contingency	8.00%	\$1,137,020			\$111,122	
17	HARD COSTS TOTAL		\$15,349,774	\$15,349,774		\$1,666,833	
18	Percentage Basis Component	0.1086					
19							
20	SOFT COSTS						
21	Professional Fees						
22	A / E Fees (Base Services and Consultants)		\$1,144,687			\$124,400	LRS ESTIMATE
23	A/E Extra Services Allowance		\$100,000			\$10,000	ALLOWANCE
24	Pre-construction Contractor		\$40,000			\$6,000	ALLOWANCE
25	Project Management SOJ		\$700,000			\$41,280	SOJ ESTIMATE
26	Project Management F&PM		\$100,000			\$2,000	ALLOWANCE
27	Independent Construction Inspector		\$32,500			\$1,000	ALLOWANCE
28	Special Inspections & Testing		\$40,000			\$4,344	COST % FACTOR
29	Sub-Total Professional Fees			\$2,157,187			
30							
31	Entitlements & Permitting						
32	FIRE & LIFE SAFETY CODE / SPECIALTY CODE FEES						
33	Oregon Structural Specialty Code (Building Permit)		\$44,139			\$4,793	COST % FACTOR - based on \$11MM permit value
34	Trade Permits (Elec/Mech/Plumb/Fire, etc.)		\$0				by contractor
35	Jurisdiction Plan Review		\$28,690			\$3,115	COST % FACTOR
36	Fire Life Safety Review Fees		\$17,656			\$1,917	COST % FACTOR
37	State Surcharge		\$5,297			\$575	COST % FACTOR
38	Building Demolition Permits		\$89				
39	Certificate of Occupancy		\$50				
40	Technology Fees		\$729			\$79	COST % FACTOR
41	Miscellaneous Fee Allowance		\$2,500				
42	Sub-Total Entitlements & Permitting Fees			\$99,150			
43							
44	Development Fees						
45	Building Permit Development Fee		\$359				
46	Pre-Design Conferences (Public Facilities)		\$340				
47	Reports Review and Document Prep		\$720				
48	Pre-Application Conference		\$1,525				
49	Site Design Review		\$14,358				
50	Lot Line Adjustment / Consolidation		\$1,780				
51	Traffic Report Submittal		\$2,015				
52	Signs		\$400				
53	Address Fee		\$75				
54	Construction Utility Connection Fees (by Contractor)		\$0				
55	Early Assistance Design Advice		\$500				
56	Variance (Major Type 3)		\$5,318				
57	City Project Management Fee		\$10,000				
58	Erosion Control Fees		\$1,093				
59	Sub-Total Development Fees		\$38,483	\$38,483		\$0	\$4,179 SHARE MAY BE ABSORBED BY ECC PROJECT
60							
61	Systems Development Charges						
62	Parks		\$0				
63	Stormwater (113,000 sf impervious area)		\$0				
64	Wastewater		\$79,365				
65	Water		\$65,176				
66	Transportation		\$0				
67	Water Meter / Hydrant Installation & Testing Fees		\$3,000				
68	Sub-Total Systems Development Charges		\$147,541			\$0	\$16,021 SHARE MAY BE ABSORBED BY ECC PROJECT
69							
70	Fixtures Furnishings & Equip (Allowance)			\$661,440		\$0	
71							
72	Other Owner Costs						
73	Bowling Alley / KFC Remediation & De-construction		\$0				Included in Construction Hard Costs
74	Security During Construction		\$25,000			\$0	\$2,715 MAY BE ABSORBED BY ECC PROJECT
75	Builder's Risk Insurance		\$24,000			\$0	\$2,606 MAY BE ABSORBED BY ECC PROJECT
76	Land Surveys		\$0				
77	Lot Line Adjustments		\$2,000				
78	Utility Vaults, Transformers, Installation		\$60,000				
79	Leed Certification (Administration only)		\$7,500			\$0	\$814 SHARE MAY BE ABSORBED BY ECC PROJECT
80	Telecommunications Systems		\$0				
81	Security Systems		\$0				
82	Low Voltage Systems		\$0				
83	Audio / Video Equipment		\$0				
84	Signage		\$0				
85	Percent for Art (2%)	2%	\$215,325			\$33,337	2% OF HARD COSTS - COUNTY MANDATED
86	1-1/2% Solar		\$0			\$25,002	1.5% OF HARD COSTS - COUNTY MANDATED
87	Legal (Basic assistance - no significant actions)		\$35,000			\$0	
88	M/W/ESB Compliance (AGB, Inc.)		\$114,000			\$0	
89	Sub-Total Other Owner Costs		\$482,825	\$482,825			
90							
91	SOFT COST SUB-TOTAL			\$3,439,085		\$257,843	
92							
93	SOFT COST CONTINGENCY (5%)			\$171,954		\$18,673	
94							
95	SOFT COSTS TOTAL			\$3,611,039		\$276,515	
96							
97	HARD COSTS TOTAL			\$15,349,774		\$1,666,833	
98							
99	PROJECT COSTS TOTAL			\$18,960,813		\$1,943,348	
100							

(DRAFT) OVERALL PROJECT ESTIMATE  
DATA CENTER @ MC EAST

	A	B	C	D	E
1	HARD COSTS	BASIS	ESTIMATE	SUB-TOTALS	REMARKS
2	Division 1-33 Building Costs		\$1,223,866		HSW est. July 8,2010
3	General Conditions	6.00%	\$73,432		
4					
5	Subtotal Direct Cost		\$1,297,298		
6					
7	Contractor Overhead & Profit	5.00%	\$64,865		
8	Contractor Insurance	1.00%	\$12,973		
9	Contractor Bond	0.75%	\$9,730		
10					
11	Building & Site Development Subtotal		\$1,384,866		
12					
13	Estimating Contingency	12.00%	\$166,184		
14	Construction Contingency	8.00%	\$124,084		
15	HARD COSTS TOTAL		\$1,675,133	\$1,675,133	
16					
17					
18	SOFT COSTS				
19	Professional Fees				
20	A / E Fees (Base Services and Consultants)	10%	\$167,513		LRS ESTIMATE
21	A/E Extra Services Allowance		\$10,000		ALLOWANCE
22	Project Management F&PM	10%	\$167,513		F&PM ESTIMATE
23	Independent Construction Inspector		\$0		ALLOWANCE
24	Special Inspections & Testing		\$5,000		ALLOWANCE
25	Sub-Total Professional Fees			\$350,027	
26					
27	Entitlements & Permitting				
28	FIRE & LIFE SAFETY CODE / SPECIALTY CODE FEES				
29	Oregon Structural Specialty Code (Building Permit)		\$15,297		C OF GRESHAM, BASED ON \$1.675MM VALUE
30	Trade Permits (Elec/Mech/Plumb/Fire, etc.)		\$4,200		ESTIMATE
31	Jurisdiction Plan Review		\$0		
32	Fire Life Safety Review Fees		\$0		
33	State Surcharge		\$0		
34	Building Demolition Permits		\$89		
35	Certificate of Occupancy		\$50		
36	Technology Fees		\$50		
37	Miscellaneous Fee Allowance		\$400		
38	Sub-Total Entitlements & Permitting Fees			\$20,086	
39					
40	Development Fees				
41	Building Permit Development Fee		\$0		
42	Pre-Design Conferences (Public Facilities)		\$0		
43	Reports Review and Document Prep		\$0		
44	Pre-Application Conference		\$0		
45	Site Design Review		\$0		
46	Lot Line Adjustment / Consolidation		\$0		
47	Traffic Report Submittal		\$0		
48	Signs		\$0		
49	Address Fee		\$0		
50	Construction Utility Connection Fees (by Contractor)		\$0		
51	Early Assistance Design Advice		\$0		
52	Variance (Major Type 3)		\$0		
53	City Project Management Fee		\$0		
54	Erosion Control Fees		\$0		
55	Sub-Total Development Fees		\$0	\$0	
56					
57	Systems Development Charges				
58	Parks		\$0		
59	Stormwater (113,000 sf impervious area)		\$0		
60	Wastewater		\$0		
61	Water		\$0		
62	Transportation		\$0		
63	Water Meter / Hydrant Installation & Testing Fees		\$0		
64	Sub-Total Systems Development Charges		\$0		
65					
66	Fixtures Furnishings & Equip (Allowance)		\$0	\$0	
67					
68	Other Owner Costs				
69	Bowling Alley / KFC Remediation & De-construction		\$0		
70	Security During Construction		\$0		
71	Builder's Risk Insurance		\$0		
72	Land Surveys		\$0		
73	Lot Line Adjustments		\$0		
74	Utility Vaults, Transformers, Installation		\$0		
75	Leed Certification (Administration only)		\$0		
76	Telecommunications Systems		\$5,000		ALLOWANCE
77	Security Systems		\$2,500		ALLOWANCE
78	Low Voltage Systems		\$0		
79	Audio / Video Equipment		\$0		
80	Signage		\$0		
81	Percent for Art (2%)	2%	\$24,477		MANDATE
82	1-1/2% Solar		\$0		
83	Legal (Basic assistance - no significant actions)		\$5,000		ALLOWANCE
84	M/W/ESB Compliance (AGB, Inc.)		\$0		
85	Sub-Total Other Owner Costs		\$36,977	\$36,977	
86					
87	SOFT COST SUB-TOTAL			\$407,090	
88					
89	SOFT COST CONTINGENCY (5%)			\$20,354	
90					
91	SOFT COSTS TOTAL			\$427,444	
92					
93	HARD COSTS TOTAL			\$1,675,133	
94					
95	PROJECT COSTS TOTAL			\$2,102,578	

## Data Center Cost Premium

Project:	East County Courts	Estimate No.:	2.1
Location:	Portland, OR	Date:	7-Jul-10
Owner:	Multnomah County	Estimator:	Jensen / drp
Architect	LRS		

Description	Area	UOM	Unit Price	Price	Comments
<b>ECC BASEMENT</b>					
Bldg Structure and Finishes	2,426	sf	\$ 116.65	\$ 282,994	
Bldg Mechanical, Elect, Plmbg	2,426	sf	\$ 437.32	\$ 1,060,944	
<b>Subtotal</b>				<b>\$ 1,343,938</b>	
Mark-ups				\$201,591	
Total				\$ 1,545,529	
<b>MC East Bldg</b>					
Bldg Structure and Finishes	1,870	sf	\$ 70.73	\$ 132,273	
Bldg Mechanical, Elect, Plmbg	1,870	sf	\$ 583.74	\$ 1,091,593	
<b>Subtotal</b>				<b>\$ 1,223,866</b>	
Mark-ups				\$183,580	
Total				\$ 1,407,446	



## ECC Data Center in Basement

Project: **East County Courts**  
Location: Portland, OR  
Owner: Multnomah County  
Architect: LRS

Estimate No.: 2.1  
Date: 7-Jul-10  
Estimator: Jensen/drp  
Area: 2,426

Description	Baseline	Data Center	Delta	UOM	Unit Price	Price	Comments
<b>Division 3 - Concrete</b>							
Concrete Work							
Wall Footings	22	29	7	cy	\$450.00	\$3,150	
Basement Walls, 12" thick	3,796	5,198	1,402	sf	\$27.60	\$38,695	
Exterior Stairwell Walls, 10" thick	0	598	598	sf	\$25.30	\$15,129	
SOG Steps	0	68	68	lf	\$34.50	\$2,346	
Slab-On-Metal Deck	5,870	8,292	2,422	sf	\$4.00	\$9,688	
Stairs-On-Grade	0	144	144	lf-riser	\$45.00	\$6,480	
Reinforcing Steel							
Wall Footings	1,540	2,030	490	lbs	\$0.60	\$294	70 lbs/cy
Basement Walls	22,776	31,188	8,412	lbs	\$0.60	\$5,047	6.00 lbs/sf
Exterior Stairwell Walls	0	2,392	2,392	lbs	\$0.60	\$1,435	4.00 lbs/sf
Slab-On-Metal Deck - Mesh	68	95	27	sqs	\$50.00	\$1,350	
Slab-On-Metal Deck - Rebar	1,468	2,073	606	lbs	\$0.60	\$363	0.25 lbs/sf
<b>Subtotal</b>						<b>\$83,977</b>	
<b>Division 5 - Metals</b>							
Structural Steel Fabrication	70,440	99,552	29,112	lbs	\$0.90	\$26,201	12 lbs/sf
3" Metal Deck Materials	5,870	8,296	2,426	sf	\$2.50	\$6,065	
Shear Studs at SOMD	881	1,244	363	ea	\$5.00	\$1,815	0.15 studs/sf
Steel Erection	5,870	8,296	2,426	sf	\$5.50	\$13,343	
Miscellaneous Metals	5,870	8,296	2,426	sf	\$1.00	\$2,426	
<b>Subtotal</b>						<b>\$49,850</b>	
<b>Division 7 - Thermal &amp; Moisture Protection</b>							
Basement Wall Waterproofing	3,796	5,198	1,402	sf	\$4.50	\$6,309	
<b>Subtotal</b>						<b>\$6,309</b>	
<b>Division 8 - Openings</b>							
Exterior Double	0	1	1	opng	\$1,500.00	\$1,500	
Interior Single	6	10	4	opng	\$1,200.00	\$4,800	
Interior Double	0	2	2	opng	\$1,800.00	\$3,600	
<b>Subtotal</b>						<b>\$9,900</b>	
<b>Division 9 - Finishes</b>							
Drywall/Acoustical							
Stair Shafts	290	552	262	sf	\$10.00	\$2,616	
Elevator & Mechanical Shafts	1,032	432	(600)	sf	\$10.00	(\$6,000)	
Standard Partitions	2,592	4,728	2,136	sf	\$6.50	\$13,884	
Furr Basement Walls	1,272	3,000	1,728	sf	\$3.50	\$6,048	
Acoustical Ceilings	0	2,048	2,048	sf	\$4.50	\$9,216	
Flooring							
Rubber Base	854	1,328	474	lf	\$2.50	\$1,184	
Resilient Sheet	0	1,035	1,035	sf	\$8.50	\$8,798	Storage, Toilet, Staff
Concrete Sealer	5,870	7,257	1,387	sf	\$6.50	\$9,016	
Access Flooring							
Access Flooring w/ Anti-Static Rubber	0	1,013	1,013	sf	\$32.50	\$32,923	
Clean & Seal Floor Below	0	1,013	1,013	sf	\$0.80	\$810	
Access Floor Bracing & Equipment Restraints	0	1,013	1,013	sf	\$5.00	\$5,065	
Painting							
Paint Walls	7,714	14,292	6,578	sf	\$0.40	\$2,631	
Paint Doors & Frames	8	16	8	leaf	\$100.00	\$802	
<b>Subtotal</b>						<b>\$86,993</b>	
<b>Division 21 - Fire Suppression</b>							
Fire Protection	5,870	7,279	1,409	sf	\$3.25	\$4,579	
Comp Rm - Preaction/Ansul Sapphire/Alarm	0	1,013	1,013	sf	\$32.00	\$32,416	
<b>Subtotal</b>						<b>\$36,995</b>	
<b>Division 22 - Plumbing</b>							
Plumbing				1	ls	\$25,000.00	\$25,000
<b>Subtotal</b>						<b>\$25,000</b>	
<b>Division 23 - HVAC</b>							
Base System - (2) 20-Ton Lieberts, etc.				1	ls	\$215,238.00	\$215,238
Redundancy - (1) 20-Ton Liebert				1	ls	\$106,849.00	\$106,849
Non-data area				1	ls	\$66,183.99	\$66,184
Misc Dampers, FLS, etc.				1	ls	\$30,000.00	\$30,000
<b>Subtotal</b>						<b>\$418,271</b>	American Heating budget



## ECC Data Center in Basement

Project: **East County Courts**  
Location: Portland, OR  
Owner: Multnomah County  
Architect: LRS

Estimate No.: 2.1  
Date: 7-Jul-10  
Estimator: Jensen/drp  
Area: 2,426

Description	Baseline	Data Center	Delta	UOM	Unit Price	Price	Comments
<b>Division 26 - Electrical</b>							
Electrical			1	ls	\$1,178,353.00	\$1,178,353	EC Company budget
Racks by Owner						(\$168,150)	
Cable tray by Owner						(\$5,775)	
UPS by Owner						(\$127,500)	
2nd UPS by Owner						(\$75,000)	
Battery Monitoring by Owner						(\$63,750)	
UPS IDC by Owner						(\$37,500)	
Correct Mechanical Hook-up (\$180K to \$60K)						(\$120,000)	
<b>Subtotal</b>						<b>\$580,678</b>	
<b>Division 31 - Earthwork</b>							
Basement Excavation/Disposal	3,777	5,767	1,990	cy	\$15.00	\$29,850	
Basement Perimeter Backfill	1,304	1,713	409	cy	\$35.00	\$14,315	
Basement Foundation Drains	292	392	100	lf	\$18.00	\$1,800	
<b>Subtotal</b>						<b>\$45,965</b>	
					<b>Subtotal</b>	<b>\$1,343,938</b>	
					Contingency/Markups	\$201,591	
					Cost Premium	\$1,545,529	

<b>COST RECAP</b>							
Bldg Structure and Finishes			2,426	sf	\$ 116.65	\$ 282,994	
Bldg Mechanical, Elect, Plmbg			2,426	sf	\$ 437.32	\$ 1,060,944	
					<b>Subtotal</b>	<b>1,343,938</b>	
					Contingency/Markups	\$201,591	
					Cost Premium	\$1,545,529	

## Data Center MC East

Project:	East County Courts	Estimate No.:	2.1
Location:	Portland, OR	Date:	7-Jul-10
Owner:	Multnomah County	Estimator:	Jensen/drp
Architect	LRS	Area:	1,870

Description	Quantity	UOM	Unit Price	Price	Comments
<b>Division 2 - Existing Conditions</b>					
Interior Demolition	1,870	sf	\$7.50	\$14,025	
<b>Subtotal</b>				<b>\$14,025</b>	
<b>Division 3 - Concrete</b>					
Emergency Generator Pad	250	sf	\$40.00	\$10,000	
<b>Subtotal</b>				<b>\$10,000</b>	
<b>Division 8 - Openings</b>					
Interior Single	3	opng	\$1,200.00	\$3,600	
Interior Double	2	opng	\$1,800.00	\$3,600	
Relight	20	sf	\$35.00	\$700	
<b>Subtotal</b>				<b>\$7,900</b>	
<b>Division 9 - Finishes</b>					
Drywall/Acoustical					
Stairwell Exit	450	sf	\$10.00	\$4,500	
Corridor	525	sf	\$10.00	\$5,250	
Standard Partitions	1,740	sf	\$6.50	\$11,310	
Acoustical Ceilings	1,870	sf	\$4.50	\$8,415	
Flooring					
Rubber Base	472	lf	\$2.50	\$1,180	
Resilient Sheet	420	sf	\$8.50	\$3,570	Storage, Toilet, Staff
Access Flooring					
Access Flooring w/ Anti-Static Rubber	1,450	sf	\$32.50	\$47,125	incl. UPS/ATS/Storage
Ramp & Handrails	1	ls	\$3,000.00	\$3,000	
Clean & Seal Floor Below	1,450	sf	\$0.80	\$1,160	
Access Floor Bracing & Equipment Restraints	1,450	sf	\$5.00	\$7,250	
Painting					
Paint Walls	4,720	sf	\$0.40	\$1,888	
Paint Doors & Frames	7	leaf	\$100.00	\$700	
<b>Subtotal</b>				<b>\$95,348</b>	
<b>Division 21 - Fire Supression</b>					
Fire Protection	870	sf	\$3.25	\$2,828	
Comp Rm - Preaction/Ansul Sapphire/Alarm	1,000	sf	\$32.00	\$32,000	
<b>Subtotal</b>				<b>\$34,828</b>	
<b>Division 22 - Plumbing</b>					
Plumbing	1	ls	\$10,000.00	\$10,000	
<b>Subtotal</b>				<b>\$10,000</b>	
<b>Division 23 - HVAC</b>					
Base System - (2) 20-Ton Lieberts, etc.	1	ls	\$215,238.00	\$215,238	American Heating budget
Redundancy - (1) 20-Ton Liebert	1	ls	\$106,849.00	\$106,849	
Non-data area	1	ls	\$35,000.00	\$35,000	
Misc Dampers, FLS, etc.	1	ls	\$25,000.00	\$25,000	
<b>Subtotal</b>				<b>\$382,087</b>	
<b>Division 26 - Electrical</b>					
Electrical	1	ls	\$1,178,353.00	\$1,178,353	EC Company budget
Premium for E-Gen Feeder	1	ls	\$84,000.00	\$84,000	
Racks by Owner				(\$168,150)	
Cable tray by Owner				(\$5,775)	
UPS by Owner				(\$127,500)	
2nd UPS by Owner				(\$75,000)	
Battery Monitoring by Owner				(\$63,750)	
UPS IDC by Owner				(\$37,500)	
Correct Mechanical Hook-up (\$180K to \$60K)				(\$120,000)	
<b>Subtotal</b>				<b>\$664,678</b>	
<b>Division 32 - Exterior Improvements</b>					
Patch Landscape/Hardscape at E-Gen Feed	1	ls	\$5,000.00	\$5,000	
<b>Subtotal</b>				<b>\$5,000</b>	
<b>Subtotal</b>				<b>\$1,223,866</b>	
Contingency/Markups				\$183,580	
Cost Premium				\$1,407,446	

## Data Center MC East

Project: **East County Courts**  
 Location: Portland, OR  
 Owner: Multnomah County  
 Architect: LRS

Estimate No.: 2.1  
 Date: 7-Jul-10  
 Estimator: Jensen/drp  
 Area: 1,870

Description	Quantity	UOM	Unit Price	Price	Comments
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COST RECAP					
Bldg Structure and Finishes	1,870	sf	\$ 70.73	\$	132,273
Bldg Mechanical, Elect, Plmbg	1,870	sf	\$ 583.74	\$	1,091,593
<b>Subtotal</b>					<b>1,223,866</b>
Contingency/Markups					\$183,580
Cost Premium					\$1,407,446



Electrical Construction Company, Oregon and Washington  
E C Power Systems, Oregon, Washington, Utah, Idaho and Colorado

June 8, 2010

Dan Pelissier  
Howard S Wright Constructors  
425 NE 10th, Suite 200  
Portland OR, 97209

Project: Multnomah County

Subject: New Portland Data Center Budget Proposal – Rev. 0

EC Company is pleased to offer our Budget Cost Proposal for the above noted project based on spreadsheet received via e-mail on June 8, 2010 and information contained in the associated e-mail, and the following:

#### **POWER DISTRIBUTION AND UTILITIES**

1. We have anticipated that the new data center loads will be fed from the existing building service at this time. (Please see alternate pricing for new service)
2. We have included a budget to install (1) data/com vault and (2) 4" conduits from the vault to the MDF closet.

#### **STANDBY POWER SYSTEMS**

1. We will provide the following standby power systems.
  - a. (1) 300 KW 277/480 volt diesel generator.
  - b. (1) 160 KVA UPS system with 15 minutes of batteries and battery monitoring.
  - c. (1) 160 KVA 277/480 volt to 120/208 volt IDC Cabinet

#### **RAISED FLOOR**

1. We have included a allowance to provide grounding of the raised floor.

#### **WIRING DEVICES**

1. Miscellaneous 120 volt convenience receptacles and switches will be provided.

#### **LIGHTING**

1. Light levels for the building will conform to the Illuminating Engineers Society standards and the state of Oregon Energy Code. Fluorescent T-8 lamps will be used throughout the new space.

#### **LIGHTING CONTROLS**

1. Lighting controls will consist of occupancy sensors and switches.

#### **FIRE ALARM**

1. Provide fire alarm system to meet code. New devices will include fire alarm call stations and smoke detectors.
2. Audible devices will be chimes equipped with strobe lights. Strobe lights will be placed as dictated by ADA and IFC regulations.
3. We have also included an allowance for a VESDA system in the data center.

*Single Source Electrical Solutions...*





*Electrical Construction Company, Oregon and Washington  
E C Power Systems, Oregon, Washington, Utah, Idaho and Colorado*

### **HVAC AND EQUIPMENT CONNECTIONS**

1. We have included a budget for circuitry and connection for the following new HVAC equipment:
  - a. (1) 40 ton 480 volt 3 phase CRAC unit.
  - b. (1) 50 ton 480 volt 3 phase chiller.
  - c. (2) 20 ton 480 volt 3 phase RTU's.
  - d. (1) Water Source heat pump.

### **SECURITY ROUGH-IN AND EQUIPMENT**

1. Furnish and install door access control at (3) doors and (1) CCTV camera and associated head end equipment.

### **INTERNAL TELECOMMUNICATIONS DISTRIBUTION**

1. Furnish and install cable tray
2. Furnish and install (38) racks with power strips and (24) 4 pair Category 6E cables to each cabinet.
3. Provide grounding of each cabinet.
4. Provide one central MDF in the building.

### **ELECTRICAL AND LOW VOLTAGE PERMITS AND FEES.**

#### **Qualifications:**

- Open plenum rated fire alarm cable will be installed.
- All work to be completed during normal working hours.
- This proposal is good for 30 days from the date it is received.

#### **Exclusions:**

- Magnetic door hold opens.
- Concrete and Blacktop Cutting and Patching.
- Street Crossings.
- Utility Fees.
- Sheetrock / plaster cutting and patching.
- House Keeping pads.
- HVAC DDC controls and cabling.
- Trash removal from site.

Should you have any questions regarding this Cost Proposal, please contact me at 503-220-5372 at your earliest convenience.

Thank you,

Todd Coffman  
Market Manager  
Commercial and Design / Build

*Single Source Electrical Solutions...*



**PROJECT NAME: Multnomah County Data Center** June 8, 2010  
Rev. 0

DESCRIPTION	\$/SF	SF	Budget	Price Per Each
Separate Service for building if required	\$42.00	2,400.00	\$ 100,800.00	
Network Access (1) vault and (2) 4" pvc conduits	\$6.50	2,400.00	\$ 15,600.00	
Dedicated Distribution Panel	\$12.50	2,400.00	\$ 30,000.00	
Grounding of raised floor	\$3.50	1,500.00	\$ 5,250.00	
Branch Power to (38) racks (4) dedicated circuits per rack	\$17.50	1,500.00	\$ 26,250.00	\$ 172.70
(38) Racks with power strips and (24) Cat 6E cabling	\$112.10	1,500.00	\$ 168,150.00	\$ 4,425.00
MDF Closet Build-out	\$9.75	1,500.00	\$ 14,625.00	
Cable Tray	\$3.85	1,500.00	\$ 5,775.00	
Fixtures	\$4.50	2,400.00	\$ 10,800.00	
Mechanical	\$75.00	2,400.00	\$ 180,000.00	
Convenience Outlets	\$3.00	2,400.00	\$ 7,200.00	
General Tele / Data Rough-in	\$1.00	2,400.00	\$ 2,400.00	
General Tele / Data - Cabling	\$2.25	2,400.00	\$ 5,400.00	
Fire Alarm Devices	\$3.00	2,400.00	\$ 7,200.00	
Vesda	\$5.00	1,500.00	\$ 7,500.00	
Security Rough-in	\$1.00	1,500.00	\$ 1,500.00	
Security Equipment and Install Budget	\$6.04	2,400.00	\$ 14,500.00	
(1) 300 KWGenerator	\$77.63	2,400.00	\$ 186,300.00	
400 Amp ATS	\$6.15	2,400.00	\$ 14,753.00	
Generator Fuel Tank	\$12.50	2,400.00	\$ 30,000.00	
Generator Fuel at \$5.00 per gallon	\$10.42	2,400.00	\$ 25,000.00	
(1) 144 KW UPS with 15 minutes of Battery	\$85.00	1,500.00	\$ 127,500.00	
(1) 160 KVA IDC Cabinet	\$25.00	1,500.00	\$ 37,500.00	
2nd Ups for redundancy	\$50.00	1,500.00	\$ 75,000.00	
Battery monitoring per UPS	\$42.50	1,500.00	\$ 63,750.00	\$ 31,875.00
Commissioning and start-up	\$5.00	2,400.00	\$ 12,000.00	
Seismic Allowance	\$1.00	2,400.00	\$ 2,400.00	
Fire Stopping	\$0.50	2,400.00	\$ 1,200.00	
<b>Subtotal</b>	<b>\$490.98</b>	<b>2,400.00</b>	<b>\$ 1,178,353.00</b>	



## American Heating, Inc.

TO: Howard S. Wright Constructors  
ATTN: Dan Pelissier  
FROM: Brian Shea / Travis Young  
DATE: July 6, 2010  
SUBJECT: East County Data Center

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### **HVAC BUDGET TO FURNISH AND INSTALL THE FOLLOWING:**

- 2 20-ton Liebert downflow units with humidity control and standalone factory control system
- 2 Roof mounted dry coolers
- 2 Pumps
- 2 Compression tanks
- 2 Isolation dampers for individual system operation
- Hydronic condenser loop piping and associated insulation where exposed on roof
- Chemical treatment of condenser loops
- Seismic restraints, fire stopping and identification for our scope of work
- Low voltage thermostat / sensor control wiring
- Crane lift and rigging of new HVAC units
- Certified air and hydronic water balancing and reports
- Commissioning assistance inform of journey sheet metal, service technician and air balancer
- HVAC permits
- Start-up, test, and check of HVAC equipment

**BUDGET PER NARRATIVE.....\$ 215,238.00**

### **OPTIONS:**

- 1. ADD for overhead ducted system.....\$ 25,192.00**
- 2. ADD for (1) additional 20-ton Liebert system.....\$ 106,849.00**

**ADD for overhead ducted system.....\$ 11,982.00**

### **NOTES:**

- 1. Line voltage wiring, controls and accessories unless mentioned above by others.
- 2. Insulation, leveling, flashing, counter flashing, concrete curbs/tubs, roofing by others.
- 3. Fire alarm wiring and wiring of smoke detectors is required by Div. 16.
- 4. Power and control wiring of fire smoke dampers by others.
- 5. Mechanical screens if required are by others.
- 6. All cutting, patching, hole coring, painting, structural and framing by others.
- 7. Cutting, hole coring, patching, roofing, structural, framing and painting by others.
- 8. Structural calculations are not included.
- 9. Off-hours work is not included.
- 10. Temporary heating, cooling, exhaust and air filtration is not included.
- 11. Housekeeping pads/bases by others.
- 12. All platforms, blocking, supports, insulation, sheet rock and leveling of roof mounted equipment is by others.
- 13. Installation and or cutting of all floor tiles are by others.