

## **FAC 1444 Miscellaneous Operations Support Building**

RUC: \$109.02 SF

Source: USACE PAX Newsletter 3.2.2 dated 20 Mar 09  
CC 14110 (Low Bay)  
Deflated to FY-09 using Appendix C  
In V12, Tri-Service and USACE PAX Newsletter values were updated while all other values were inflated only.

SUC: \$4.20 SF

Source: Cost Works model in \$FY-08, inflated to \$FY-09 using Green Book Table 5-6 (O&M less DHP)  
In V12, values were inflated only.

Model follows:

Chart: A chart showing relative annual sustainment requirements follows:

**FAC 1444-Miscellaneous Operations Support Building**

**CostWorks 2008 Quarter 2**

Design Life= 55  
Average S.F= 2,338

C.S.F=100 S.F; MSF=1000 S.F  
Sq=100 S.F; M.L.F=1000 L.F

This spreadsheet was  
exported from R.S Means  
CostWorks

Terminal Cutoff is the removal of a single task occurrence if that task occurs  
within 10% of the end of the design life and if the frequency of the task exceeds  
20% of the design life. This prevents scheduling major work near the end of the  
design life

Description	Frequency	Crew	Qty	Unit	Total In-House	Total Incl. O&P	Release	Occurrences in Design Life	Adjusted Occurrences	Terminal Cutoff
Repair brick wall - 1st floor	25	1 Bric	131.500	S.F.	4,865.50	5,912.24	2008 Qtr 2	2	1	\$ 5,912.24
Replace brick wall - 2nd floor	75	2 Bric	4.630	C.S.F.	9,471.08	11,364.75	2008 Qtr 2	0	0	\$ -
Repair 8" concrete block wall - 1st floor	25	1 Bric	69.600	S.F.	1,396.18	1,698.24	2008 Qtr 2	2	1	\$ 1,698.24
Replace 8" concrete block wall - 1st floor	60	2 Bric	6.960	C.S.F.	6,924.30	8,335.09	2008 Qtr 2	0	0	\$ -
Replace 8" concrete block wall - 2nd floor	60	2 Bric	6.450	C.S.F.	6,844.55	8,246.33	2008 Qtr 2	0	0	\$ -
Repair 2'-0" x 3'-0" aluminum window - 1st floor	20	1 Carp	3.800	Ea.	436.85	517.56	2008 Qtr 2	2	2	\$ 1,035.12
Replace 2'-0" x 3'-0" aluminum window - 1st floor	50	1 Carp	38.000	Ea.	16,666.80	19,493.62	2008 Qtr 2	1	0	\$ -
Replace glass - 1st floor (1% of glass)	1	1 Carp	2.280	S.F.	20.63	24.21	2008 Qtr 2	55	55	\$ 1,331.75
Repair 2'-0" x 3'-0" aluminum window - 2nd floor	20	1 Carp	3.000	Ea.	461.10	553.26	2008 Qtr 2	2	2	\$ 1,106.52
Replace 2'-0" x 3'-0" aluminum window - 2nd floor	50	1 Carp	30.000	Ea.	14,320.50	16,836.30	2008 Qtr 2	1	0	\$ -
Replace glass - 2nd floor (1% of glass)	1	1 Carp	1.800	S.F.	157.32	192.69	2008 Qtr 2	55	55	\$ 10,597.95
Repair 12' x 12' steel roll-up door	10	1 Carp	1.000	Ea.	832.61	964.54	2008 Qtr 2	5	5	\$ 4,822.70
Refinish 12' x 12' steel roll-up door	5	1 Pord	1.000	Ea.	168.83	205.54	2008 Qtr 2	11	11	\$ 2,260.94
Replace 12' x 12' steel roll-up door	35	2 Carp	1.000	Ea.	3,325.27	3,849.55	2008 Qtr 2	1	1	\$ 3,849.55
Repair steel, painted, door	14	1 Carp	1.000	Ea.	582.44	686.36	2008 Qtr 2	3	3	\$ 2,059.08
Refinish 3'-0" x 7'-0" steel, painted, door	4	1 Pord	1.000	Ea.	32.91	40.31	2008 Qtr 2	13	13	\$ 524.03
Replace 3'-0" x 7'-0" steel, painted, door	45	1 Carp	1.000	Ea.	532.08	620.04	2008 Qtr 2	1	1	\$ 620.04
Debris removal and visual inspection built-up roofing	1	2 Rofc	1.403	M.S.F.	41.16	49.60	2008 Qtr 2	55	55	\$ 2,727.78
Non-destructive moisture inspection built-up roofing	5	2 Rofc	1.403	M.S.F.	127.36	154.05	2008 Qtr 2	11	11	\$ 1,694.54
Total roof replacement built-up roofing	28	G1	14.030	Sq.	8,008.04	9,483.58	2008 Qtr 2	1	1	\$ 9,483.58
Minor membrane replacement - (25% of roof area) built-up roofing	20	G5	3.510	Sq.	2,086.45	2,488.87	2008 Qtr 2	2	2	\$ 4,977.74
Minor membrane repairs - (2% of roof area) built-up roofing	5	G5	0.280	Sq.	96.47	113.97	2008 Qtr 2	11	11	\$ 1,253.68
Flashing repairs - (2 S.F. per sq. repaired) built-up roofing	5	2 Rofc	0.560	S.F.	1.88	2.24	2008 Qtr 2	11	11	\$ 24.64
Debris removal by hand & visual inspection,modified bitum/thermoplstc	1	2 Rofc	0.468	M.S.F.	13.73	16.54	2008 Qtr 2	55	55	\$ 909.91
Non-destructive moisture inspection,modified bitum/thermoplastic	5	2 Rofc	0.468	M.S.F.	42.49	51.39	2008 Qtr 2	11	11	\$ 565.25
Total roof replacement,modified bituminous / thermoplastic	25	G1	4.680	Sq.	2,278.41	2,693.39	2008 Qtr 2	2	1	\$ 2,693.39
Membrane replacement-(25% of roof area),modified bitum/thermoplastic	20	G5	1.170	Sq.	745.00	883.23	2008 Qtr 2	2	2	\$ 1,766.47
Minor membrane repairs-(2% of roof area),modified bitum/thermoplastic	5	G5	0.090	Sq.	24.01	28.33	2008 Qtr 2	11	11	\$ 311.59
Flashing repairs-(2 S.F. per sq. repaired),modified bitum/thermoplstc	5	2 Rofc	0.180	S.F.	0.60	0.70	2008 Qtr 2	11	11	\$ 7.74
Repair steel painted interior door	14	1 Carp	2.000	Ea.	335.50	396.28	2008 Qtr 2	3	3	\$ 1,188.84
Refinish 3'-0" x 7'-0" steel painted interior door	4	1 Pord	2.000	Ea.	98.80	121.64	2008 Qtr 2	13	13	\$ 1,581.32
Replace 3'-0" x 7'-0" steel painted interior door	60	1 Carp	2.000	Ea.	1,875.08	2,179.92	2008 Qtr 2	0	0	\$ -
Repair solid core wood door interior	11	1 Carp	1.400	Ea.	234.85	277.40	2008 Qtr 2	5	5	\$ 1,386.98
Refinish 3'-0" x 7'-0" solid core wood door interior	4	1 Pord	14.000	Ea.	591.08	727.72	2008 Qtr 2	13	13	\$ 9,460.36
Replace 3'-0" x 7'-0" solid core wood door interior	40	1 Carp	14.000	Ea.	5,133.80	5,951.68	2008 Qtr 2	1	1	\$ 5,951.68

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Description	Frequency	Crew	Qty	Unit	Total In-House	Total Incl. O&P	Release	Occurrences in Design Life	Adjusted Occurrences	Terminal Cutoff
Repair concrete steps	15	1 Cefi	0.700	S.F.	11.89	13.85	2008 Qtr 2	3	3	\$ 41.54
Replace concrete steps	100	2 Cefi	7.000	S.F.	346.57	420.63	2008 Qtr 2	0	0	\$ -
Replace metal stair railing interior	45	2 Sswk	14.000	L.F.	502.18	580.16	2008 Qtr 2	1	1	\$ 580.16
Repair fabric wall finish fabric interior	9	1 Pord	99.100	S.Y.	2,496.33	3,023.54	2008 Qtr 2	6	6	\$ 18,141.25
Replace fabric wall finish fabric interior	50	1 Pord	99.100	S.Y.	13,926.52	16,991.69	2008 Qtr 2	1	0	\$ -
Refinish drywall	12	1 Pord	5,433.000	S.F.	3,259.80	4,020.42	2008 Qtr 2	4	4	\$ 16,081.68
Replace 5/8" drywall	75	2 Carp	5,433.000	S.F.	12,115.59	14,614.77	2008 Qtr 2	0	0	\$ -
Repair 5/8" drywall - (2% of walls)	20	1 Carp	108.660	S.F.	172.77	207.54	2008 Qtr 2	2	2	\$ 415.08
Replace carpet	12	2 Tilf	91.100	S.Y.	4,111.34	4,749.95	2008 Qtr 2	4	4	\$ 18,999.82
Refinish concrete floor finished	25	2 Cefi	13.150	C.S.F.	4,595.14	5,532.07	2008 Qtr 2	2	1	\$ 5,532.07
Replace terrazzo floor	75	2 Mstz	1.260	C.S.F.	1,814.32	2,148.64	2008 Qtr 2	0	0	\$ -
Terrazzo floor repairs - (2% of floors)	15	1 Mstz	2.520	S.F.	37.85	45.21	2008 Qtr 2	3	3	\$ 135.63
Replace vinyl floor	18	1 Tilf	0.086	S.Y.	4.11	5.01	2008 Qtr 2	3	2	\$ 10.03
Replace acoustic tile ceiling, fire-rated	20	1 Carp	9.970	C.S.F.	4,019.41	4,775.63	2008 Qtr 2	2	2	\$ 9,551.26
Check / minor repairs drinking fountain	1	1 Plum	1.000	Ea.	37.58	47.34	2008 Qtr 2	55	55	\$ 2,603.70
Repair internal leaks drinking fountain	4	1 Plum	1.000	Ea.	35.14	43.43	2008 Qtr 2	13	13	\$ 564.59
Correct water pressure drinking fountain	2	1 Plum	1.000	Ea.	32.21	40.50	2008 Qtr 2	27	27	\$ 1,093.50
Replace refrigerant drinking fountain	2	1 Plum	1.000	Ea.	15.84	18.86	2008 Qtr 2	27	27	\$ 509.22
Repair drain leak drinking fountain	4	1 Plum	1.000	Ea.	22.63	27.03	2008 Qtr 2	13	13	\$ 351.39
Replace fountain drinking fountain	10	2 Plum	1.000	Ea.	1,005.84	1,193.57	2008 Qtr 2	5	5	\$ 5,967.85
Replace washer in spud connection lavatory, vitreous china	7	1 Plum	6.000	Ea.	144.06	169.98	2008 Qtr 2	7	7	\$ 1,189.86
Replace washer in faucet lavatory, vitreous china	2	1 Plum	6.000	Ea.	59.10	73.74	2008 Qtr 2	27	27	\$ 1,990.98
Replace faucets lavatory, vitreous china	10	1 Plum	6.000	Ea.	740.94	894.36	2008 Qtr 2	5	5	\$ 4,471.80
Clean out strainer and P trap lavatory, vitreous china	2	1 Plum	6.000	Ea.	162.24	201.42	2008 Qtr 2	27	27	\$ 5,438.34
Replace lavatory, vitreous china	35	2 Plum	6.000	Ea.	3,181.14	3,814.20	2008 Qtr 2	1	1	\$ 3,814.20
Replace faucet washer sink, iron enamel	2	1 Plum	1.000	Ea.	9.79	12.19	2008 Qtr 2	27	27	\$ 329.13
Clean trap sink, iron enamel	3	1 Plum	1.000	Ea.	6.60	8.25	2008 Qtr 2	18	18	\$ 148.50
Replace faucets sink, iron enamel	10	1 Plum	1.000	Ea.	123.49	149.06	2008 Qtr 2	5	5	\$ 745.30
Unstop sink sink, iron enamel	2	1 Plum	1.000	Ea.	32.21	40.50	2008 Qtr 2	27	27	\$ 1,093.50
Replace sink, P.E.C.I. sink, iron enamel	35	2 Plum	1.000	Ea.	552.72	657.69	2008 Qtr 2	1	1	\$ 657.69
Replace flush valve diaphragm tankless water closet	10	1 Plum	5.000	Ea.	353.70	415.30	2008 Qtr 2	5	5	\$ 2,076.50
Rebuild flush valve tankless water closet	20	1 Plum	5.000	Ea.	659.90	800.05	2008 Qtr 2	2	2	\$ 1,600.10
Unplug clogged line tankless water closet	5	1 Plum	5.000	Ea.	841.30	1,050.90	2008 Qtr 2	11	11	\$ 11,559.90
Replace tankless water closet	35	2 Plum	5.000	Ea.	2,740.00	3,241.80	2008 Qtr 2	1	1	\$ 3,241.80
Replace tankless flush valve	25	1 Plum	5.000	Ea.	1,047.50	1,226.85	2008 Qtr 2	2	1	\$ 1,226.85

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Description	Frequency	Crew	Qty	Unit	Total In-House	Total Incl. O&P	Release	Occurrences in Design Life	Adjusted Occurrences	Terminal Cutoff
Replace wax ring gasket tankless water closet	5	1 Plum	5.000	Ea.	547.85	686.00	2008 Qtr 2	11	11	\$ 7,546.00
Replace flush valve diaphragm urinal	7	1 Plum	2.000	Ea.	141.48	166.12	2008 Qtr 2	7	7	\$ 1,162.84
Rebuild flush valve urinal	20	1 Plum	2.000	Ea.	263.96	320.02	2008 Qtr 2	2	2	\$ 640.04
Unplug line urinal	5	1 Plum	2.000	Ea.	224.28	279.82	2008 Qtr 2	11	11	\$ 3,078.02
Replace wall-hung urinal	35	2 Plum	2.000	Ea.	1,683.26	2,013.14	2008 Qtr 2	1	1	\$ 2,013.14
Inspect / check pump / motor operation, lub. circulation pump, 1/12 HP	0.5	1 Plum	1.000	Ea.	6.19	7.72	2008 Qtr 2	110	110	\$ 849.20
Replace pump / motor assembly circulation pump, 1/12 HP	10	2 Plum	1.000	Ea.	736.33	863.29	2008 Qtr 2	5	5	\$ 4,316.45
Resolder joint pipe & fittings, copper	10	1 Plum	2.000	Ea.	65.70	80.90	2008 Qtr 2	5	5	\$ 404.50
Replace pipe and fittings, copper 3/4"	20	2 Plum	16.000	L.F.	283.52	343.68	2008 Qtr 2	2	2	\$ 687.36
Remove old insulation & replace with new, pipe 3/4", wall 1"	15	1 Plum	16.000	L.F.	112.16	136.64	2008 Qtr 2	3	3	\$ 409.92
Drain and flush water heater, electric, 120 gallon	7	1 Plum	1.500	Ea.	339.65	424.56	2008 Qtr 2	7	7	\$ 2,971.92
Check operation water heater, electric, 120 gallon	3	1 Plum	0.500	Ea.	0.99	1.24	2008 Qtr 2	18	18	\$ 22.32
Replace water heater, electric, 120 gallon	15	2 Plum	0.500	Ea.	4,596.23	5,271.90	2008 Qtr 2	3	3	\$ 15,815.69
Unclog main drain pipe & fittings, cast iron	10	1 Plum	1.000	Ea.	35.62	44.41	2008 Qtr 2	5	5	\$ 222.05
Replace pipe & fittings, cast iron	40	2 Plum	8.000	L.F.	335.20	405.60	2008 Qtr 2	1	1	\$ 405.60
Unclog floor drain, PVC	20	1 Plum	1.000	Ea.	37.09	45.87	2008 Qtr 2	2	2	\$ 91.74
Repair joint pipe and fittings, PVC	10	1 Plum	1.000	Ea.	115.94	144.14	2008 Qtr 2	5	5	\$ 720.70
Replace pipe, 4" pipe and fittings, PVC	30	2 Plum	8.000	L.F.	473.60	585.52	2008 Qtr 2	1	1	\$ 585.52
General maintenance & repair drain: roof, scupper, area	1	1 Plum	1.000	Ea.	28.35	35.67	2008 Qtr 2	55	55	\$ 1,961.85
Replace drain: roof, scupper, area	40	1 Plum	1.000	Ea.	398.34	468.14	2008 Qtr 2	1	1	\$ 468.14
Replace sprinkler head	20	1 Plum	16.000	Ea.	1,018.88	1,255.36	2008 Qtr 2	2	2	\$ 2,510.72
Inspect sprinkler system	1	1 Plum	1.000	Ea.	26.55	32.89	2008 Qtr 2	55	55	\$ 1,808.95
Rebuild double check 3" backflow preventer sprinkler system	5	1 Plum	1.000	Ea.	598.06	715.83	2008 Qtr 2	11	11	\$ 7,874.13
Replace fire alarm bell, 6"	20	1 Elec	1.000	Ea.	142.28	171.51	2008 Qtr 2	2	2	\$ 343.02
Maintenance and repair motor starter, up to 600 V	5	1 Elec	2.000	Ea.	341.50	415.00	2008 Qtr 2	11	11	\$ 4,565.00
Maintenance and inspection motor starter, up to 600 V	0.5	1 Elec	2.000	Ea.	76.34	95.70	2008 Qtr 2	110	110	\$ 10,527.00
Replace starter motor starter, up to 600 V	18	1 Elec	2.000	Ea.	1,056.36	1,260.82	2008 Qtr 2	3	2	\$ 2,521.64
Replace fluor. ballast for fluorescent lighting fixture, 80 W	10	1 Elec	28.000	Ea.	2,788.24	3,362.24	2008 Qtr 2	5	5	\$ 16,811.20
Replace lamps (2 lamps) fluorescent lighting fixture, 80 W	10	1 Elec	28.000	Ea.	712.32	873.04	2008 Qtr 2	5	5	\$ 4,365.20
Maintenance and repair incandescent lighting fixtures	10	1 Elec	2.000	Ea.	94.56	112.78	2008 Qtr 2	5	5	\$ 563.90
Replace lamp incandescent lighting fixtures	5	1 Elec	2.000	Ea.	13.96	17.04	2008 Qtr 2	11	11	\$ 187.44
Maintenance and repair receptacles and plugs	20	1 Elec	141.000	Ea.	4,383.69	5,460.93	2008 Qtr 2	2	2	\$ 10,921.86
Replace receptacle/plug receptacles and plugs	20	1 Elec	141.000	Ea.	7,439.16	9,083.22	2008 Qtr 2	2	2	\$ 18,166.44
Maintenance and repair wiring devices, switches	10	1 Elec	52.000	Ea.	1,616.68	2,013.96	2008 Qtr 2	5	5	\$ 10,069.80
Replace switch wiring devices, switches	15	1 Elec	52.000	Ea.	2,662.92	3,242.20	2008 Qtr 2	3	3	\$ 9,726.60

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Check and repair manual pull station	10	1 Elec	1.000	Ea.	69.21	84.87	2008 Qtr 2	5	5	\$ 424.35
Replace manual pull station	15	1 Elec	1.000	Ea.	125.74	151.89	2008 Qtr 2	3	3	\$ 455.67
Repair smoke detector	10	1 Elec	6.000	Ea.	229.14	282.00	2008 Qtr 2	5	5	\$ 1,410.00
Check operation smoke detector	1	1 Elec	6.000	Ea.	68.40	85.80	2008 Qtr 2	55	55	\$ 4,719.00
Replace smoke detector	15	1 Elec	6.000	Ea.	1,137.30	1,361.94	2008 Qtr 2	3	3	\$ 4,085.82
Replace single zone rt. unit, 5 ton	15	Q5	1.000	Ea.	7,276.88	8,588.60	2008 Qtr 2	3	3	\$ 25,765.80
Repair single zone rt. unit, 5 ton	10	2 Stpi	0.500	Ea.	964.86	1,157.28	2008 Qtr 2	5	5	\$ 5,786.40
Refinish sheetrock ceiling	20	1 Pord	1.100	C.S.F.	138.24	170.82	2008 Qtr 2	2	2	\$ 341.64
Replace sheetrock ceiling	40	2 Carp	1.100	C.S.F.	394.16	481.26	2008 Qtr 2	1	1	\$ 481.26
Repair sheetrock ceiling - (2% of ceilings)	20	1 Carp	0.022	C.S.F.	7.68	9.38	2008 Qtr 2	2	2	\$ 18.76
					\$191,800.24	\$229,228.02				
									MR Subtotal	\$390,791.45
									MR Per Year	\$ 7,105.30
									PM Per Year	\$ 3,042.89
									Subtotal	\$ 10,148.19
									Total Per Unit	\$ 4.34

**CostWorks 2009 Quarter 1 - FAC 1444-Miscellaneous Operations Support Building**

Qty	Assembly Number	Description	Total In-House	Total Incl. O&P	Zip Code Prefix	Type	Release
1.000	B2035 410 1950	Door, overhead, electric, roll up, to 24' high x 25' w	240.16	290.12	200	FMR	2008 Qtr 2
15.000	B2035 225 1950	Door, emergency egress, swinging, annualized	742.65	862.65	200	FMR	2008 Qtr 2
2.000	C1025 110 1950	Fire doors, swinging, annualized	49.78	59.72	200	FMR	2008 Qtr 2
1.000	D2015 800 1950	Drink fountain, annualized	49.50	59.36	200	FMR	2008 Qtr 2
2.000	D2015 100 1950	Urinals, annualized	25.86	32.30	200	FMR	2008 Qtr 2
5.000	D2015 100 2950	Toilet (vacuum breaker type), annualized	64.65	80.75	200	FMR	2008 Qtr 2
6.000	D2015 100 4950	Lavatories, annualized	148.08	180.48	200	FMR	2008 Qtr 2
1.000	D3055 210 1950	Package unit, air cooled, 3 thru 24 ton, annualized	207.71	251.03	200	FMR	2008 Qtr 2
2.000	D3045 160 1950	VAV Boxes, annualized	122.62	152.00	200	FMR	2008 Qtr 2
1.000	D4015 100 1950	Backflow prevention device, up to 4", annualized	18.89	23.42	200	FMR	2008 Qtr 2
1.000	D4015 150 1950	Extinguishing system, wet pipe, annualized	806.79	983.35	200	FMR	2008 Qtr 2
1.000	D5015 260 1950	Panelboard, 225 A and above, annualized	56.96	67.71	200	FMR	2008 Qtr 2
			<b>\$2,533.65</b>	<b>\$3,042.89</b>			

FAC 1444 Sustainment by Year - Terminal Cutoff Applied

