

FAC 7431 Auditorium and Theater Facility

RUC: \$167.42

Source: USACE PAX Newsletter 3.2.2 dated 20 Mar 09
CC 74010
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: \$1.99

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 requirement follows:

FAC 7431-Auditorium and Theater Facility
CostWorks 2008 Quarter 2

Design Life= 45
Average S.F= 9,275

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 painted brick wall - 1st floor	25	1 Bric	820.000	S.F.	30,676.20	37,269.00	2008 Qtr 2	1	1	\$ 37,269.00
Repair 8" concrete block wall - 1st floor	25	1 Bric	63.400	S.F.	1,271.80	1,546.96	2008 Qtr 2	1	1	\$ 1,546.96
Replace 8" concrete block wall - 1st floor	60	2 Bric	6.340	C.S.F.	6,307.48	7,592.59	2008 Qtr 2	0	0	\$ -
Repair 3' x 4' aluminum window - 1st floor	20	1 Carp	1.000	Ea.	235.03	275.14	2008 Qtr 2	2	2	\$ 550.28
Replace 3' x 4' aluminum window - 1st floor	50	1 Carp	1.000	Ea.	750.97	868.93	2008 Qtr 2	0	0	\$ -
Replace glass - 1st flr. (1% of glass)	1	1 Carp	0.210	S.F.	1.90	2.23	2008 Qtr 2	45	45	\$ 100.36
Repair aluminum storefront door	12	1 Carp	3.000	Ea.	1,241.82	1,472.04	2008 Qtr 2	3	3	\$ 4,416.12
Replace 3'-0" x 7'-0" aluminum storefront doors	50	1 Carp	3.000	Ea.	5,043.78	5,922.24	2008 Qtr 2	0	0	\$ -
Replace insulating glass - (3% of glass)	1	1 Carp	1.890	S.F.	68.93	80.76	2008 Qtr 2	45	45	\$ 3,634.19
Repair steel, painted, door	14	1 Carp	7.000	Ea.	4,077.08	4,804.52	2008 Qtr 2	3	2	\$ 9,609.04
Refinish 3'-0" x 7'-0" steel, painted, door	4	1 Pord	7.000	Ea.	230.37	282.17	2008 Qtr 2	11	11	\$ 3,103.87
Replace 3'-0" x 7'-0" steel, painted, door	45	1 Carp	7.000	Ea.	3,724.56	4,340.28	2008 Qtr 2	1	0	\$ -
Replace tempered glass - (3% of glass)	1	1 Carp	4.410	S.F.	85.11	101.25	2008 Qtr 2	45	45	\$ 4,556.41
Debris removal and visual inspection built-up roofing	1	2 Rofc	8.200	M.S.F.	240.59	289.87	2008 Qtr 2	45	45	\$ 13,044.15
Non-destructive moisture inspection built-up roofing	5	2 Rofc	8.200	M.S.F.	744.40	900.36	2008 Qtr 2	9	9	\$ 8,103.24
Total roof replacement built-up roofing	28	G1	82.000	Sq.	46,803.96	55,427.90	2008 Qtr 2	1	1	\$ 55,427.90
Minor membrane repairs - (2% of roof area) built-up roofing	5	G5	1.640	Sq.	565.01	667.55	2008 Qtr 2	9	9	\$ 6,007.91
Flashing repairs - (2 S.F. per sq. repaired) built-up roofing	5	2 Rofc	3.280	S.F.	11.02	13.12	2008 Qtr 2	9	9	\$ 118.08
Minor membrane replacement - (25% of roof area) built-up roofing	20	G5	20.500	Sq.	12,185.82	14,536.14	2008 Qtr 2	2	2	\$ 29,072.28
Repair hollow core wood door interior	7	1 Carp	18.000	Ea.	3,019.50	3,566.52	2008 Qtr 2	6	6	\$ 21,399.12
Refinish 3'-0" x 7'-0" hollow core wood door interior	4	1 Pord	18.000	Ea.	759.96	935.64	2008 Qtr 2	11	11	\$ 10,292.04
Replace 3'-0" x 7'-0" hollow core wood door interior	30	1 Carp	18.000	Ea.	5,777.28	6,766.56	2008 Qtr 2	1	1	\$ 6,766.56
Refinish acoustical tile	10	1 Pord	3.700	C.S.F.	564.95	686.20	2008 Qtr 2	4	4	\$ 2,744.81
Replace acoustical tile	60	2 Carp	3.700	C.S.F.	1,686.31	2,008.77	2008 Qtr 2	0	0	\$ -
Repair acoustical tile - (2% of walls)	25	1 Carp	0.074	C.S.F.	28.80	34.09	2008 Qtr 2	1	1	\$ 34.09
Replace 2" x 2" thin set ceramic tile floor	50	1 Tilf	3.500	C.S.F.	4,703.62	5,661.53	2008 Qtr 2	0	0	\$ -
Ceramic tile floor repairs - (2% of floors)	15	1 Tilf	0.070	C.S.F.	43.26	53.89	2008 Qtr 2	3	2	\$ 107.78
Refinish concrete floor finished	25	2 Cefi	78.000	C.S.F.	27,256.32	32,813.82	2008 Qtr 2	1	1	\$ 32,813.82
Replace vinyl floor	18	1 Tilf	122.222	S.Y.	5,836.10	7,125.54	2008 Qtr 2	2	2	\$ 14,251.09
Replace acoustic tile ceiling, fire-rated	20	1 Carp	3.500	C.S.F.	1,411.03	1,676.50	2008 Qtr 2	2	2	\$ 3,353.00
Refinish plaster ceiling	10	1 Pord	161.111	S.Y.	1,777.05	2,192.72	2008 Qtr 2	4	4	\$ 8,770.88
Replace plaster ceiling	75	2 Plas	161.111	S.Y.	9,808.44	11,891.60	2008 Qtr 2	0	0	\$ -
Repair plaster ceiling - (2% of ceilings)	12	1 Plas	3.222	S.Y.	177.63	214.97	2008 Qtr 2	3	3	\$ 644.92
Check / minor repairs drinking fountain	1	1 Plum	2.000	Ea.	75.16	94.68	2008 Qtr 2	45	45	\$ 4,260.60
Repair internal leaks drinking fountain	4	1 Plum	2.000	Ea.	70.28	86.86	2008 Qtr 2	11	11	\$ 955.46
Correct water pressure drinking fountain	2	1 Plum	2.000	Ea.	64.42	81.00	2008 Qtr 2	22	22	\$ 1,782.00

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Terminal Cutoff is the removal of a single task occurrence if that task occurs
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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 refrigerant drinking fountain	2	1 Plum	2.000	Ea.	31.68	37.72	2008 Qtr 2	22	22	\$ 829.84
Repair drain leak drinking fountain	4	1 Plum	2.000	Ea.	45.26	54.06	2008 Qtr 2	11	11	\$ 594.66
Replace fountain drinking fountain	10	2 Plum	2.000	Ea.	2,011.68	2,387.14	2008 Qtr 2	4	4	\$ 9,548.56
Unplug clogged line flush-tank water closet	5	1 Plum	7.000	Ea.	1,177.82	1,471.26	2008 Qtr 2	9	9	\$ 13,241.34
Replace washer / diaphragm in ball cock flush-tank water closet	5	1 Plum	7.000	Ea.	98.49	121.80	2008 Qtr 2	9	9	\$ 1,096.20
Replace valve and ball cock assembly flush-tank water closet	15	1 Plum	7.000	Ea.	524.58	648.76	2008 Qtr 2	3	2	\$ 1,297.52
Install gasket between tank and bowl flush-tank water closet	20	1 Plum	7.000	Ea.	215.81	269.71	2008 Qtr 2	2	2	\$ 539.42
Replace two piece water closet flush-tank	35	2 Plum	7.000	Ea.	2,921.45	3,474.52	2008 Qtr 2	1	1	\$ 3,474.52
Replace one piece water closet flush-tank	35	2 Plum	7.000	Ea.	4,627.91	5,395.11	2008 Qtr 2	1	1	\$ 5,395.11
Replace washer in spud connection lavatory, vitreous china	7	1 Plum	7.000	Ea.	168.07	198.31	2008 Qtr 2	6	6	\$ 1,189.86
Replace washer in faucet lavatory, vitreous china	2	1 Plum	7.000	Ea.	68.95	86.03	2008 Qtr 2	22	22	\$ 1,892.66
Replace faucets lavatory, vitreous china	10	1 Plum	7.000	Ea.	864.43	1,043.42	2008 Qtr 2	4	4	\$ 4,173.68
Clean out strainer and P trap lavatory, vitreous china	2	1 Plum	7.000	Ea.	189.28	234.99	2008 Qtr 2	22	22	\$ 5,169.78
Replace lavatory, vitreous china	35	2 Plum	7.000	Ea.	3,711.33	4,449.90	2008 Qtr 2	1	1	\$ 4,449.90
Replace faucet washer sink, iron enamel	2	1 Plum	1.000	Ea.	9.79	12.19	2008 Qtr 2	22	22	\$ 268.18
Clean trap sink, iron enamel	3	1 Plum	1.000	Ea.	6.60	8.25	2008 Qtr 2	15	15	\$ 123.75
Replace faucets sink, iron enamel	10	1 Plum	1.000	Ea.	123.49	149.06	2008 Qtr 2	4	4	\$ 596.24
Unstop sink sink, iron enamel	2	1 Plum	1.000	Ea.	32.21	40.50	2008 Qtr 2	22	22	\$ 891.00
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
Inspect / clean shower head fiberglass	3	1 Plum	1.000	Ea.	37.80	47.44	2008 Qtr 2	15	15	\$ 711.60
Replace mixing valve barrel shower, fiberglass	2	1 Plum	1.000	Ea.	148.15	176.32	2008 Qtr 2	22	22	\$ 3,879.04
Replace mixing valve shower, fiberglass	10	1 Plum	1.000	Ea.	274.68	329.00	2008 Qtr 2	4	4	\$ 1,316.00
Replace shower and fittings, fiberglass	20	2 Plum	1.000	Ea.	976.65	1,151.58	2008 Qtr 2	2	2	\$ 2,303.16
Replace flush valve diaphragm urinal	7	1 Plum	2.000	Ea.	141.48	166.12	2008 Qtr 2	6	6	\$ 996.72
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	9	9	\$ 2,518.38
Replace wall-hung urinal	35	2 Plum	2.000	Ea.	1,683.26	2,013.14	2008 Qtr 2	1	1	\$ 2,013.14
Resolder joint pipe & fittings, copper	10	1 Plum	2.000	Ea.	65.70	80.90	2008 Qtr 2	4	4	\$ 323.60
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
Replace pipe and fittings, copper 2"	25	2 Plum	16.000	L.F.	652.96	785.76	2008 Qtr 2	1	1	\$ 785.76
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	2	\$ 273.28
Remove old insulation & replace with new, pipe 1-1/2", wall 1"	15	1 Plum	16.000	L.F.	123.36	150.08	2008 Qtr 2	3	2	\$ 300.16
Drain and flush water heater, electric, 120 gallon	7	1 Plum	1.000	Ea.	226.43	283.04	2008 Qtr 2	6	6	\$ 1,698.24
Check operation water heater, electric, 120 gallon	3	1 Plum	1.000	Ea.	1.98	2.48	2008 Qtr 2	15	15	\$ 37.20
Replace water heater, electric, 120 gallon	15	2 Plum	1.000	Ea.	9,192.45	10,543.79	2008 Qtr 2	3	2	\$ 21,087.58
Unclog main drain pipe & fittings, cast iron	10	1 Plum	1.000	Ea.	35.62	44.41	2008 Qtr 2	4	4	\$ 177.64

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Replace pipe & fittings, cast iron	40	2 Plum	16.000	L.F.	670.40	811.20	2008 Qtr 2	1	1	\$ 811.20
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	4	4	\$ 576.56
Replace pipe, 4" pipe and fittings, PVC	30	2 Plum	16.000	L.F.	947.20	1,171.04	2008 Qtr 2	1	1	\$ 1,171.04
General maintenance & repair drain: roof, scupper, area	1	1 Plum	2.000	Ea.	56.70	71.34	2008 Qtr 2	45	45	\$ 3,210.30
Replace drain: roof, scupper, area	40	1 Plum	2.000	Ea.	796.68	936.28	2008 Qtr 2	1	1	\$ 936.28
Repair furnace, electric, 85 MBH residential	10	Q20	1.000	Ea.	2,910.18	3,329.38	2008 Qtr 2	4	4	\$ 13,317.52
Replace furnace, electric, 85 MBH residential	15	Q20	1.000	Ea.	1,383.12	1,632.51	2008 Qtr 2	3	2	\$ 3,265.02
Repair single zone rooftop unit, 25 ton	10	Q6	0.500	Ea.	12,910.55	14,961.45	2008 Qtr 2	4	4	\$ 59,845.78
Replace single zone rooftop unit, 25 ton	15	Q7	1.000	Ea.	34,098.40	39,677.60	2008 Qtr 2	3	2	\$ 79,355.20
Minor repairs to fire alarm control panel	5	1 Elec	1.000	Ea.	107.84	130.97	2008 Qtr 2	9	9	\$ 1,178.73
Maintenance and inspection fire alarm control panel	0.5	1 Elec	1.000	Ea.	30.54	38.17	2008 Qtr 2	90	90	\$ 3,435.30
Replace fire alarm control panel	15	1 Elec	1.000	Ea.	2,615.62	3,107.84	2008 Qtr 2	3	2	\$ 6,215.68
Replace sprinkler head	20	1 Plum	117.000	Ea.	7,450.56	9,179.82	2008 Qtr 2	2	2	\$ 18,359.64
Inspect sprinkler system	1	1 Plum	1.000	Ea.	26.55	32.89	2008 Qtr 2	45	45	\$ 1,480.05
Rebuild double check 3" backflow preventer sprinkler system	5	1 Plum	1.000	Ea.	598.06	715.83	2008 Qtr 2	9	9	\$ 6,442.47
Replace fire alarm bell, 6"	20	1 Elec	2.000	Ea.	284.56	343.02	2008 Qtr 2	2	2	\$ 686.04
Maintenance and repair safety switch gen., 2 pole	8	1 Elec	3.000	Ea.	85.50	106.89	2008 Qtr 2	5	5	\$ 534.45
Maintenance and inspection safety switch, 2 pole	1	1 Elec	3.000	Ea.	85.50	106.89	2008 Qtr 2	45	45	\$ 4,810.05
Replace safety switch 240 V, 2 pole	25	2 Elec	3.000	Ea.	1,061.94	1,264.14	2008 Qtr 2	1	1	\$ 1,264.14
Repair switchgear 1200 A mainframe	5	1 Elec	1.000	Ea.	1,694.09	1,975.10	2008 Qtr 2	9	9	\$ 17,775.90
Maintenance and inspection switchgear, mainframe	1	1 Elec	1.000	Ea.	45.81	57.01	2008 Qtr 2	45	45	\$ 2,565.45
Replace switchgear 1200 A mainframe	20	3 Elec	1.000	Ea.	4,052.28	4,808.24	2008 Qtr 2	2	2	\$ 9,616.48
Replace lamp emergency lighting fixture	2	1 Elec	8.000	Ea.	432.00	513.12	2008 Qtr 2	22	22	\$ 11,288.64
Replace emergency lighting fixture	20	1 Elec	8.000	Ea.	6,746.00	7,772.80	2008 Qtr 2	2	2	\$ 15,545.60
Maintenance and repair exit light	20	1 Elec	4.000	Ea.	131.32	159.48	2008 Qtr 2	2	2	\$ 318.96
Replace lamp exit light	5	1 Elec	4.000	Ea.	49.40	58.48	2008 Qtr 2	9	9	\$ 526.32
Replace fluor. ballast for fluorescent lighting fixture, 80 W	10	1 Elec	28.000	Ea.	2,788.24	3,362.24	2008 Qtr 2	4	4	\$ 13,448.96
Replace lamps (2 lamps) fluorescent lighting fixture, 80 W	10	1 Elec	28.000	Ea.	712.32	873.04	2008 Qtr 2	4	4	\$ 3,492.16
Maintenance and repair incandescent lighting fixtures	10	1 Elec	50.000	Ea.	2,364.00	2,819.50	2008 Qtr 2	4	4	\$ 11,278.00
Replace lamp incandescent lighting fixtures	5	1 Elec	50.000	Ea.	349.00	426.00	2008 Qtr 2	9	9	\$ 3,834.00
Maintenance and repair receptacles and plugs	20	1 Elec	20.000	Ea.	621.80	774.60	2008 Qtr 2	2	2	\$ 1,549.20
Replace receptacle/plug receptacles and plugs	20	1 Elec	20.000	Ea.	1,055.20	1,288.40	2008 Qtr 2	2	2	\$ 2,576.80
Maintenance and repair wiring devices, switches	10	1 Elec	40.000	Ea.	1,243.60	1,549.20	2008 Qtr 2	4	4	\$ 6,196.80
Replace switch wiring devices, switches	15	1 Elec	40.000	Ea.	2,048.40	2,494.00	2008 Qtr 2	3	2	\$ 4,988.00
Check and repair manual pull station	10	1 Elec	4.000	Ea.	276.84	339.48	2008 Qtr 2	4	4	\$ 1,357.92

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Replace manual pull station	15	1 Elec	4.000	Ea.	502.96	607.56	2008 Qtr 2	3	2	\$ 1,215.12
Repair smoke detector	10	1 Elec	20.000	Ea.	763.80	940.00	2008 Qtr 2	4	4	\$ 3,760.00
Check operation smoke detector	1	1 Elec	20.000	Ea.	228.00	286.00	2008 Qtr 2	45	45	\$ 12,870.00
Replace smoke detector	15	1 Elec	20.000	Ea.	3,791.00	4,539.80	2008 Qtr 2	3	2	\$ 9,079.60
					\$305,320.90	\$363,329.91				
									MR Subtotal	\$ 720,185.87
									MR Per Year	\$ 16,004.13
									PM Per Year	\$ 2,964.94
									Subtotal	\$ 18,969.07
									Total Per Unit	\$ 2.05

CostWorks 2009 Quarter 1 - FAC 7431-Auditorium and Theater Facility

Qty	Assembly Number	Description	Total In-House	Total Incl. O&P	Zip Code Prefix	Type	Release
10.000	B2035 225 1950	Door, emergency egress, swinging, annualized	495.10	575.10	200	FMR	2008 Qtr 2
18.000	C1025 110 1950	Fire doors, swinging, annualized	448.02	537.48	200	FMR	2008 Qtr 2
2.000	D2015 100 1950	Urinals, annualized	25.86	32.30	200	FMR	2008 Qtr 2
7.000	D2015 100 3950	Toilet (tank type), annualized	153.72	191.31	200	FMR	2008 Qtr 2
7.000	D2015 100 4950	Lavatories, annualized	172.76	210.56	200	FMR	2008 Qtr 2
1.000	D2015 100 5950	Showers, annualized	19.85	23.80	200	FMR	2008 Qtr 2
2.000	D2015 800 1950	Drink fountain, annualized	99.00	118.72	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
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	D5095 250 1950	Light, emergency, hardwired system, annualized	14.25	17.87	200	FMR	2008 Qtr 2
			\$2,461.95	\$2,964.94			

FAC 7431 Sustainment by Year - Terminal Cutoff Applied

