

FAC 1724 GENERAL PURPOSE SIMULATOR FACILITY

FY22 SUC: \$5.40 / SF
Source: Calculated using R.S. Means CostWorks 2021 Qtr 3 component prices

FAC 1724 GENERAL PURPOSE SIMULATOR FACILITY

SUC \$5.40

Adjusted Occurrences are the occurrences remaining after subtracting Repair/Replacement Overlaps. Overlap reduction removes a repair when it occurs the same year as a replacement.

Release 2021 Qtr 3

UM SF

Zip Code Prefix 222

Design Life 50

Type MR

Average Size 11187.0

Description	Frequency	Qty Unit	Total In-House	Total Incl OP	Design Life/Frequency	Occurrences in Design Life	Adjusted Occurrences	Life Cost	Adjusted Cost
Replace tankless flush valve	25	13.00 Ea.	\$3,278.80	\$3,849.44	2.0000	2	2	\$7,698.87	\$7,698.87
Replace wax ring gasket for tankless water closet	5	13.00 Ea.	\$1,839.75	\$2,298.74	10.0000	10	10	\$22,987.44	\$22,987.44
Replace flush valve diaphragm for a urinal	7	4.00 Ea.	\$104.88	\$130.14	7.1429	7	7	\$911.00	\$911.00
Rebuild flush valve for a urinal	20	4.00 Ea.	\$721.74	\$869.83	2.5000	2	2	\$1,739.66	\$1,739.66
Unplug line urinal	5	4.00 Ea.	\$580.29	\$725.71	10.0000	10	10	\$7,257.12	\$7,257.12
Replace washer in spud connection lavatory, vitreous china	7	14.00 Ea.	\$230.48	\$281.12	7.1429	7	7	\$1,967.84	\$1,967.84
Replace washer in faucet lavatory, vitreous china	2	14.00 Ea.	\$180.39	\$224.73	25.0000	25	25	\$5,618.14	\$5,618.14
Replace faucets lavatory, vitreous china	10	14.00 Ea.	\$2,544.16	\$3,062.58	5.0000	5	5	\$15,312.88	\$15,312.88
Clean out strainer and P trap lavatory, vitreous china	2	14.00 Ea.	\$488.17	\$610.51	25.0000	25	25	\$15,262.77	\$15,262.77
Replace faucet washer sink, stainless steel	2	1.00 Ea.	\$12.78	\$15.92	25.0000	25	25	\$397.90	\$397.90
Clean trap sink, stainless steel	3	1.00 Ea.	\$8.57	\$10.72	16.6667	16	16	\$171.50	\$171.50
Replace faucets sink, stainless steel	10	1.00 Ea.	\$181.73	\$218.76	5.0000	5	5	\$1,093.78	\$1,093.78
Unstop sink, stainless steel	2	1.00 Ea.	\$41.82	\$52.30	25.0000	25	25	\$1,307.56	\$1,307.56
Replace sink, stainless steel	40	1.00 Ea.	\$1,125.95	\$1,319.82	1.2500	1	1	\$1,319.82	\$1,319.82
Check / minor repairs drinking fountain	1	3.00 Ea.	\$146.65	\$183.40	50.0000	50	50	\$9,169.89	\$9,169.89
Repair internal leaks drinking fountain	4	3.00 Ea.	\$135.24	\$169.13	12.5000	12	12	\$2,029.60	\$2,029.60
Correct water pressure drinking fountain	2	3.00 Ea.	\$125.46	\$156.91	25.0000	25	25	\$3,922.67	\$3,922.67
Replace refrigerant drinking fountain	2	3.00 Ea.	\$98.05	\$114.81	25.0000	25	25	\$2,870.19	\$2,870.19
Repair drain leak drinking fountain	4	3.00 Ea.	\$101.75	\$121.60	12.5000	12	10	\$1,459.25	\$1,216.04
Replace fountain drinking fountain	10	3.00 Ea.	\$3,843.47	\$4,543.68	5.0000	5	5	\$22,718.38	\$22,718.38
Unclog floor drain, PVC	20	1.00 Ea.	\$47.80	\$59.77	2.5000	2	2	\$119.55	\$119.55
General maintenance & repair drain: roof, scupper, area	1	2.00 Ea.	\$73.98	\$92.51	50.0000	50	50	\$4,625.70	\$4,625.70
Replace drain: roof, scupper, area	40	2.00 Ea.	\$1,573.86	\$1,824.72	1.2500	1	1	\$1,824.72	\$1,824.72
Repair boiler, gas, 250 MBH	7	1.00 Ea.	\$2,031.05	\$2,390.45	7.1429	7	7	\$16,733.15	\$16,733.15
Replace boiler, gas, 250 MBH	30	1.00 Ea.	\$9,398.04	\$11,210.13	1.6667	1	1	\$11,210.13	\$11,210.13
Replace roof mounted exhaust fan, 8500 CFM exhaust fan	20	1.00 Ea.	\$3,939.83	\$4,573.41	2.5000	2	2	\$9,146.83	\$9,146.83
Repair circulator pump, 1 H.P.	5	1.00 Ea.	\$98.36	\$116.02	10.0000	10	7	\$1,160.17	\$812.12
Replace circulator. pump, 1 H.P.	15	1.00 Ea.	\$5,768.48	\$6,613.79	3.3333	3	3	\$19,841.37	\$19,841.37
Repair terminal reheat, 36" x 36" coil	10	1.00 Ea.	\$162.94	\$203.78	5.0000	5	5	\$1,018.88	\$1,018.88
Replace terminal reheat, 36" x 36" coil	15	1.00 Ea.	\$3,442.47	\$4,000.25	3.3333	3	3	\$12,000.76	\$12,000.76
Repair computer room air conditioner, air cooled, 5 ton	10	1.00 Ea.	\$4,277.08	\$5,096.24	5.0000	5	5	\$25,481.19	\$25,481.19

Description	Frequency	Qty Unit	Total In-House	Total Incl OP	Design Life/Frequency	Occurrences in Design Life	Adjusted Occurrences	Life Cost	Adjusted Cost
Replace computer room air conditioner, air cooled, 5 ton	20	1.00 Ea.	\$38,211.35	\$43,798.01	2.5000	2	2	\$87,596.02	\$87,596.02
Repair multi-zone rooftop unit, 40 ton	10	1.00 Ea.	\$47,791.41	\$55,294.22	5.0000	5	4	\$276,471.08	\$221,176.87
Replace multi-zone rooftop unit, 40 ton	15	1.00 Ea.	\$145,332.83	\$167,778.78	3.3333	3	3	\$503,336.34	\$503,336.34
Repair central station A.H.U., 8000 CFM	10	1.00 Ea.	\$1,302.07	\$1,515.31	5.0000	5	4	\$7,576.53	\$6,061.23
Replace central station A.H.U., 8000 CFM	15	1.00 Ea.	\$36,431.80	\$42,017.17	3.3333	3	3	\$126,051.52	\$126,051.52
Inspect sprinkler system	1	1.00 Ea.	\$34.33	\$42.93	50.0000	50	50	\$2,146.43	\$2,146.43
Replace sprinkler head	20	100.00 Ea.	\$8,552.28	\$10,518.95	2.5000	2	2	\$21,037.90	\$21,037.90
Maintenance and inspection lighting panel, indoor	3	2.00 Ea.	\$81.29	\$101.84	16.6667	16	16	\$1,629.49	\$1,629.49
Replace fluorescent light fixture ballast, 80 W	10	60.00 Ea.	\$7,480.11	\$9,074.23	5.0000	5	5	\$45,371.17	\$45,371.17
Replace lamps (2 lamps), 4', 34 W energy saver	10	60.00 Ea.	\$1,512.84	\$1,894.74	5.0000	5	5	\$9,473.68	\$9,473.68
Replace metal halide ballast, 175 W	10	10.00 Ea.	\$1,484.85	\$1,783.01	5.0000	5	5	\$8,915.05	\$8,915.05
Replace metal halide fixture lamp, 175 W	5	10.00 Ea.	\$499.87	\$611.54	10.0000	10	10	\$6,115.37	\$6,115.37
Repair smoke detector	10	25.00 Ea.	\$1,409.69	\$1,742.85	5.0000	5	4	\$8,714.26	\$6,971.41
Check operation smoke detector	1	25.00 Ea.	\$404.86	\$507.23	50.0000	50	50	\$25,361.28	\$25,361.28
Replace smoke detector	15	25.00 Ea.	\$7,105.93	\$8,486.55	3.3333	3	3	\$25,459.64	\$25,459.64
Check and repair manual pull station	10	3.00 Ea.	\$263.09	\$323.49	5.0000	5	4	\$1,617.45	\$1,293.96
Replace manual pull station	15	3.00 Ea.	\$610.40	\$734.82	3.3333	3	3	\$2,204.47	\$2,204.47
Minor repairs to fire alarm control panel	5	1.00 Ea.	\$149.71	\$182.27	10.0000	10	10	\$1,822.75	\$1,822.75
Maintenance and inspection fire alarm control panel	0.5	1.00 Ea.	\$43.18	\$54.10	100.0000	100	100	\$5,410.41	\$5,410.41
Replace fire alarm control panel	15	1.00 Ea.	\$1,953.46	\$2,391.92	3.3333	3	3	\$7,175.76	\$7,175.76
Replace fire alarm bell, 6"	20	2.00 Ea.	\$389.92	\$470.55	2.5000	2	2	\$941.10	\$941.10
Maintenance and repair of general wiring lightning protection system	1	1.00 M.L.F.	\$96.72	\$119.83	50.0000	50	50	\$5,991.33	\$5,991.33
Replace lightning protection general wiring system	25	1.00 M.L.F.	\$11,009.12	\$13,095.99	2.0000	2	2	\$26,191.98	\$26,191.98
Maintenance and repair lightning ground rod	1	1.00 Ea.	\$87.89	\$109.79	50.0000	50	48	\$5,489.36	\$5,269.78
Replace lightning ground rod	25	1.00 Ea.	\$226.09	\$280.29	2.0000	2	2	\$560.58	\$560.58
Maintenance and repair computer ground system	4	1.00 Ea.	\$21.59	\$27.05	12.5000	12	12	\$324.62	\$324.62
Replace computer ground system	50	1.00 M.L.F.	\$1,865.81	\$2,278.85	1.0000	1	1	\$2,278.85	\$2,278.85
Replace lamp emergency lighting fixture	2	20.00 Ea.	\$1,093.79	\$1,317.51	25.0000	25	25	\$32,937.83	\$32,937.83
Replace emergency lighting fixture	20	20.00 Ea.	\$12,047.36	\$14,195.23	2.5000	2	2	\$28,390.46	\$28,390.46
Maintenance and repair exit light	20	20.00 Ea.	\$744.03	\$920.06	2.5000	2	2	\$1,840.13	\$1,840.13
Replace lamp exit light	5	20.00 Ea.	\$336.93	\$399.27	10.0000	10	10	\$3,992.69	\$3,992.69
Replace lighting fixture exit light	20	20.00 Ea.	\$3,820.70	\$4,595.21	2.5000	2	2	\$9,190.43	\$9,190.43
Maintenance and inspection UPS battery	0.17	10.00 Ea.	\$647.77	\$811.56	294.1176	294	294	\$238,598.92	\$238,598.92
Replace motor generator UPS battery	15	10.00 Ea.	\$11,009.65	\$13,014.03	3.3333	3	3	\$39,042.09	\$39,042.09
Waterproof concrete block wall, 1st floor	10	56.00 C.S.F.	\$12,712.14	\$15,120.47	5.0000	5	5	\$75,602.34	\$75,602.34

Description	Frequency	Qty Unit	Total In-House	Total Incl OP	Design Life/Frequency	Occurrences in Design Life	Adjusted Occurrences	Life Cost	Adjusted Cost
Waterproof concrete block wall, 2nd floor	10	56.00 C.S.F.	\$42,914.96	\$51,200.77	5.0000	5	5	\$256,003.86	\$256,003.86
Repair clay brick wall, 1st floor	25	100.00 S.F.	\$4,297.66	\$5,274.45	2.0000	2	2	\$10,548.89	\$10,548.89
Replace glass - 1st floor (1% of glass) - alum. window fixed	1	17.50 S.F.	\$211.01	\$248.00	50.0000	50	50	\$12,400.16	\$12,400.16
Repair 2'-0" x 3'-0" aluminum window - 1st floor	20	30.00 Ea.	\$4,342.10	\$5,178.27	2.5000	2	2	\$10,356.54	\$10,356.54
Replace 2'-0" x 3'-0" aluminum window - 1st floor	50	30.00 Ea.	\$14,643.95	\$17,355.73	1.0000	1	1	\$17,355.73	\$17,355.73
Replace glass - 2nd floor (1% of glass) - alum. window fixed	1	9.70 S.F.	\$1,030.08	\$1,271.38	50.0000	50	50	\$63,569.23	\$63,569.23
Repair 2'-0" x 3'-0" aluminum window - 2nd floor	20	30.00 Ea.	\$5,739.58	\$6,913.68	2.5000	2	2	\$13,827.35	\$13,827.35
Replace 2'-0" x 3'-0" aluminum window - 2nd floor	50	30.00 Ea.	\$16,041.43	\$19,091.13	1.0000	1	1	\$19,091.13	\$19,091.13
Repair aluminum storefront door	12	2.00 Ea.	\$926.84	\$1,109.03	4.1667	4	4	\$4,436.12	\$4,436.12
Replace 3'-0" x 7'-0" aluminum storefront doors	50	2.00 Ea.	\$4,091.53	\$4,838.20	1.0000	1	1	\$4,838.20	\$4,838.20
Repair steel, painted, door	14	4.00 Ea.	\$2,500.30	\$2,976.02	3.5714	3	3	\$8,928.07	\$8,928.07
Refinish 3'-0" x 7'-0" steel, painted, door	4	4.00 Ea.	\$165.60	\$203.46	12.5000	12	12	\$2,441.58	\$2,441.58
Replace 3'-0" x 7'-0" steel, painted, door	45	4.00 Ea.	\$2,820.26	\$3,278.92	1.1111	1	1	\$3,278.92	\$3,278.92
Repair 12' x 12' steel roll-up door	10	1.00 Ea.	\$675.90	\$802.22	5.0000	5	5	\$4,011.08	\$4,011.08
Refinish 12' x 12' steel roll-up door	5	1.00 Ea.	\$203.45	\$249.19	10.0000	10	10	\$2,491.89	\$2,491.89
Replace 12' x 12' steel roll-up door	35	1.00 Ea.	\$2,703.58	\$3,208.87	1.4286	1	1	\$3,208.87	\$3,208.87
Debris removal, by hand and visual inspection, metal panel roofing	1	9.50 M.S.F.	\$216.45	\$264.00	50.0000	50	50	\$13,200.14	\$13,200.14
Minor metal roof finish repairs, 2% of roof area, metal panel roofing	5	190.00 S.F.	\$663.69	\$796.28	10.0000	10	10	\$7,962.83	\$7,962.83
Metal roof flashing replacement, 2 SF/sq repaired, metal panel roofing	1	8.60 S.F.	\$157.38	\$190.68	50.0000	50	50	\$9,534.16	\$9,534.16
Minor metal roof panel replacement, 2.5% of roof area	20	238.00 S.F.	\$2,719.77	\$3,230.15	2.5000	2	2	\$6,460.31	\$6,460.31
Total metal roof panel replacement	30	95.00 Sq.	\$80,288.93	\$95,096.54	1.6667	1	1	\$95,096.54	\$95,096.54
Repair 8" concrete block wall - (2% of walls) painted	25	2.50 C.S.F.	\$2,724.14	\$3,270.89	2.0000	2	2	\$6,541.78	\$6,541.78
Refinish concrete block wall painted	4	96.40 C.S.F.	\$9,728.56	\$11,846.42	12.5000	12	12	\$142,157.06	\$142,157.06
Repair steel painted interior door	14	3.00 Ea.	\$880.36	\$1,024.69	3.5714	3	3	\$3,074.08	\$3,074.08
Refinish 3'-0" x 7'-0" steel painted interior door	4	3.00 Ea.	\$157.76	\$194.36	12.5000	12	12	\$2,332.31	\$2,332.31
Replace 3'-0" x 7'-0" steel painted interior door	60	3.00 Ea.	\$3,654.10	\$4,236.25	0.8333	0	0	\$0.00	\$0.00
Repair solid core wood door, interior	11	10.00 Ea.	\$2,934.52	\$3,415.64	4.5455	4	4	\$13,662.56	\$13,662.56
Refinish 3'-0" x 7'-0" solid core wood door, interior	4	10.00 Ea.	\$433.65	\$532.50	12.5000	12	11	\$6,389.96	\$5,857.46
Replace 3'-0" x 7'-0" solid core wood door, interior	40	10.00 Ea.	\$4,894.27	\$5,658.10	1.2500	1	1	\$5,658.10	\$5,658.10
Office painting, 10' x 12', 10' high walls	5	10.00 Ea.	\$2,209.86	\$2,710.63	10.0000	10	10	\$27,106.31	\$27,106.31
Replace vinyl tile flooring	18	28.70 S.Y.	\$1,417.88	\$1,741.23	2.7778	2	2	\$3,482.46	\$3,482.46

Description	Frequency	Qty Unit	Total In-House	Total Incl OP	Design Life/Frequency	Occurrences in Design Life	Adjusted Occurrences	Life Cost	Adjusted Cost	
Replace flush valve diaphragm tankless water closet	10	13.00 Ea.	\$340.86	\$422.97	5.0000	5	5	\$2,114.83	\$2,114.83	
Rebuild flush valve tankless water closet	20	13.00 Ea.	\$2,345.64	\$2,826.94	2.5000	2	2	\$5,653.89	\$5,653.89	
Unplug clogged line tankless water closet	5	13.00 Ea.	\$2,839.14	\$3,550.65	10.0000	10	10	\$35,506.49	\$35,506.49	
			\$625,284.05	\$734,958.83				MR Subtotal	\$2,635,740.26	
									MR Per Year	\$52,667.00
									PM Total	\$7,694.31
									Subtotal	\$60,361.31
									Total Per Unit	\$5.40

FAC 1724 GENERAL PURPOSE SIMULATOR FACILITY

SUC \$5.40

Release 2021 Qtr 3

UM SF

Zip Code Prefix 222

Design Life 50

Type PM

Average Size 11187.0

Description	Qty	Labor Hours	Bare Mat	Bare Labor	Bare Equip	Bare Total	Total In-House	Total Incl OP
Door, emergency egress, swinging, annualized	6.00	1.56	\$87.55	\$64.50	\$0.00	\$152.05	\$180.15	\$212.63
Door, overhead, electric, roll up, to 24' high x 25' wide, annualized	2.00	8.14	\$81.92	\$337.62	\$0.00	\$419.54	\$529.02	\$642.60
Fire doors, swinging, annualized	2.00	0.78	\$28.64	\$29.12	\$0.00	\$57.76	\$69.36	\$82.39
Urinals, annualized	4.00	0.91	\$25.27	\$45.81	\$0.00	\$71.09	\$87.36	\$104.89
Toilet (vacuum breaker type), annualized	13.00	2.30	\$109.74	\$115.68	\$0.00	\$225.42	\$271.10	\$322.26
Lavatories, annualized	14.00	4.87	\$83.51	\$289.85	\$0.00	\$373.36	\$468.66	\$568.14
Drink fountain, annualized	3.00	1.86	\$62.18	\$93.83	\$0.00	\$156.00	\$190.37	\$227.84
Boiler, hot water, oil, gas, or comb. fired, 120 - 500 MBH, annualized	1.00	15.88	\$77.34	\$947.08	\$0.00	\$1,024.42	\$1,316.27	\$1,612.00
Air handling unit, 25 thru 50 tons, annualized	2.00	3.88	\$758.25	\$195.58	\$0.00	\$953.83	\$1,088.33	\$1,260.74
Package unit, air cooled, 25 thru 50 ton, annualized	2.00	6.50	\$353.85	\$391.16	\$0.00	\$745.01	\$897.75	\$1,068.17
Backflow prevention device, up to 4", annualized	1.00	0.33	\$13.40	\$19.82	\$0.00	\$33.22	\$40.50	\$48.46
Extinguishing system, dry pipe, annualized	1.00	13.02	\$122.33	\$775.28	\$0.00	\$897.61	\$1,142.43	\$1,393.36
Panelboard, 225 A and above, annualized	2.00	0.88	\$46.39	\$58.02	\$0.00	\$104.41	\$126.46	\$150.82
						\$5,213.72	\$6,407.76	\$7,694.31

FAC 1724 GENERAL PURPOSE SIMULATOR FACILITY

Modeled Component List CostWorks Release 2021 Qtr 3

D20 Plumbing	
Sink, Stainless Steel	1.0 Ea.
Drinking Fountain	3.0 Ea.
Drain: Roof, Scupper, Area	2.0 Ea.
D30 HVAC	
Boiler, Gas, 250 MBH	1.0 Ea.
Exhaust Fan, roof mounted exhaust fan, 8500 CFM exhaust	1.0 Ea.
Circulator Pump, 1 H.P.	1.0 Ea.
Terminal Reheat Coil, 36" x 36"	1.0 Ea.
Computer Room A/C Units, Air Cooled, 5 ton	1.0 Ea.
Rooftop Unit, Multi-Zone, 40 ton	1.0 Ea.
Central Station Air Conditioning Air Handling Unit, 8000 CFM	1.0 Ea.
D40 Fire Protection	
Sprinkler System, Fire Suppression, sprinkler head	100.0 Ea.
Extinguishing system, dry pipe, annualized	1.0 Each
D50 Electrical	
Load Center, 100 A, maintenance & inspection	2.0 Ea.
Smoke Detector	25.0 Ea.
Manual Pull Station	3.0 Ea.
Fire Alarm Control Panel	1.0 Ea.
Fire Alarm Bell	2.0 Ea.
Lightning Protection System	1.0 M.L.F.
Lightning Ground Rod	1.0 Ea.
Computer Ground System	1.0 M.L.F.
Emergency Lighting Fixture	20.0 Ea.
Exit Light	20.0 Ea.
UPS Battery, maintenance & inspection	10.0 Ea.
UPS Battery, replace motor	10.0 Ea.
B20 Exterior Enclosure	
Aluminum Window, Fixed, 1st floor	30.0 Ea.
Aluminum Window, Fixed, 2nd floor	30.0 Ea.
Glazed Aluminum	2.0 Ea.
Steel, Painted	4.0 Ea.
Steel Single, Roll-Up	1.0 Ea.
B30 Roofing	
Metal Steep Roofing	95.0 Sq.
C10 Interior Construction	
Concrete Block, Painted	96.4 C.S.F.
Steel Painted Interior Doors	3.0 Ea.
Solid Core Interior Doors	10.0 Ea.
Fire Doors, Swinging, annualized	2.0 Each
C30 Interior Finishes	
Vinyl	28.7 S.Y.

FAC 1724 GENERAL PURPOSE SIMULATOR FACILITY
Sustainment by Year
CostWorks Release 2021 Qtr 3

