SERVICE STATIONS

SECTION UIP 14

SMALL SELF-SERVICE BOOTHS

Average costs per square foot, typical 8' wall height for complete booth, excluding all exterior equipment and improvements. Electrical costs are for booth lighting only; add other circuits from unit costs to the right. Canopies should be added from the table below, heat from this Section on a cost-per-ton basis or from Section UIP 3. For masonry booths, use comparable steel booth costs.

LOW COST – This is an older, open-style, uninsulated booth with minimum electrical and no plumbing. Cost range can be used to price miscellaneous storage structures. Small tire display cabinet structures will cost $19.00 to $20.75 per square foot.

Siding-Stucco-Glass				Steel-Glass or Masonry			
Area	Cost	Area	Cost	Area	Cost	Area	Cost
25	$146.00	75	$91.75	25	$162.75	75	$102.75
50	109.00	100	81.50	50	121.50	100	91.00

AVERAGE STEEL – Typical of present-day cashier booths, with good electrical and no plumbing or heat. Add 25% for bullet-proof glass or see Section UIP 5.

50	$213.25	100	$141.25
75	167.50	125	123.50

GOOD STEEL – Good security structure with bullet-proof glass and two or three commercial plumbing fixtures. For intercom system, add $395 plus $105 per speaker.

75	$303.00	150	$195.50
100	252.50	200	162.75

NOTE – For small kiosk storage buildings, use Average booth costs, less 10%. For small separate restroom buildings, use Good booth costs, less 5%.

BUILDING IMPROVEMENT UNIT COSTS

All costs are for completely installed items. They include costs of design, engineering and contractors' profit and overhead, as well as a prorated share of miscellaneous ancillary costs.

CANOPIES – Cost per square foot of covered area including light fixtures and support. Wiring costs are included in electrical costs, if all circuits are counted. Add 10% for gable or ranch style, 25% for round. Add for roof covering from Section UIP 4. Individually designed or highly ornamented canopies can cost 100% more.

	Low Cost	Avg.	Good	Excellent
Concrete tees	$17.25	$20.00	$23.25	$27.00
Steel	14.75	18.75	23.75	30.25
Wood frame and sheathing	13.00	16.25	20.25	25.00

FLOOR AND FOUNDATION – Cost per square foot of floor area.

Concrete slab	$5.30	$6.20	$7.40	$ 8.75
Wood floor structure	7.25	8.20	9.25	10.45

Add for floor covering from Section UIP 2.

ROOF – Cost per square foot of roof area.

Steel prefab. frame/decking	$16.50	$18.50	$21.00	$23.75
Wood frame/sheathing	9.00	9.50	10.25	11.25

Add for roof covering from Section UIP 4. For ceilings under gable roofs, see Section UIP 2.

BUILDING IMPROVEMENT UNIT COSTS (Cont'd.)

PARTITIONS – Cost per square foot of partition, including doors.

	Low Cost	Avg.	Good	Excellent
Concrete block	$11.50	$12.50	$14.25	$15.75
Metal	13.00	14.75	16.25	18.25
Metal/glass, security	20.00	24.25	29.00	35.00
Wood frame, drywall (plaster, add 15% to 20%)	8.50	9.25	10.00	11.25

Add for cabinetry from Section UIP 2.

ELECTRICAL –

Base cost per station	$4,900	$5,700	$6,600	$7,625
Add per circuit	350	400	450	525

WALLS – Cost per square foot of exterior wall area.

Steel and glass, painted	$17.75	$ 19.50	$ 21.75	$ 24.00
Steel and glass, porcelainized	19.50	21.75	24.50	27.25
Steel panels, masonry veneer	22.00	25.00	28.50	32.75
Steel panels, block backup	21.50	24.00	26.50	29.50
Wood frame, stucco or siding	15.50	16.50	17.75	18.75
Wood frame, brick ven.	18.75	20.50	22.25	24.50
Brick masonry	20.75	23.00	26.00	28.50
Concrete block	16.50	18.25	20.25	22.25
Overhead steel or aluminum doors	12.25	14.25	16.25	18.50
sectional, roll-up	12.75	15.25	17.75	20.50
Overhead plastic doors	11.25	12.50	14.25	15.75
Overhead wood doors	10.00	11.50	12.75	14.75
Folding steel gates	13.25	15.25	17.00	18.75
Add for electric door operator	850	950	1,100	1,225

Add for ceramic tile from Section UIP 5. See Section UIP 6 for store front entries.

PLUMBING –

Cost per fixture	$1,250	$1,525	$1,850	$2,225

Count fountains without cooling as 1/2 fixture. Hot water heaters count as one fixture.

HEATING – Average cost per square foot of heated area. For specific system costs not found below, see Section SEG 4 or UIP 3.

Forced air furnace	$2.60	$3.25	$ 4.05	$ 5.10
Space heaters, suspended	1.15	1.50	2.00	2.60
Wall furnace	1.25	1.45	1.75	2.05
Package A.C. (short circuit)	5.15	6.45	8.10	10.20
Heat-pump system	5.80	7.60	10.00	13.15
Evaporative coolers	2.20	2.55	2.95	3.40
Individual thru-wall heater	2.50	3.25	4.20	5.45

Small individual heat pumps cost $1,125 to $1,500 per ton of rated capacity.

SERVICE STATIONS

SECTION UIP 14

YARD IMPROVEMENTS

PAVING

Cost per square foot	LOW COST	AVG.	GOOD
Concrete islands	$ 7.75	$ 8.75	$10.00
Island pump shelters, including lighting/supports	36.50	47.75	61.75
5" – 6" concrete, approaches and drives	3.25	4.00	5.25
4" concrete, walks, etc.	2.75	3.25	4.00
Apron channel drain and grate, per linear foot	48.25	61.75	78.50
Asphalt	1.75	2.25	2.75
6" curb, per linear foot	7.00	9.00	11.25
Precast concrete bumpers, per linear foot	3.75	5.00	6.25
Wood bumpers, per lin. ft.	3.50	5.25	6.75
Metal guard rail, pipe or posts, per linear foot	17.00	22.25	30.25

YARD LIGHTING

Cost per pole, 12'	$650	$ 825	$1,025
Cost per pole, 24'	975	1,200	1,500
Add per fixture, incandescent	300	375	525
fluorescent or quartz-iodine	625	725	850
mercury vapor	650	875	1,200
high-pressure sodium or metal halide	775	1,075	1,500

SIGNS

Cost per square foot of signs includes installation, lighting and wiring, but not cost of poles or structural supports.

	COST RANGE
Illuminated plastic, add 35% for 2 sides	$60.00 – $125.25
Metal, painted two sides	39.25 – 58.75
painted one side	31.50 – 45.75
Add for porcelainized metal, per face	7.00 – 9.25
Add for neon tubing, per face	35% – 45%
Plastic interior lighting	48.00 – 70.00
Spheres, per foot of diameter, including post	550 – 800

Installation amounts to 18% to 25% of total cost.

SIGN POSTS OR POLES

Cost per linear foot of poles set in concrete and painted. For tapered poles, use the diameter at the base. For cantilevered posts, add 50% to the cost. Decorative pole covers cost $1,225 to $2,700 each.

4"	$36.00 – $47.00		10"	$72.00 –	$116.00
6"	48.00 – 71.00		12"	83.00 –	140.00
8"	61.00 – 93.00		14"	93.00 –	161.00

PIPING

Average cost: $850 to $1,125 per pump or dispenser per product, plus $575 to $725 per tank, plus $275 to $400 for each air and water well or stand. Add 50% for double wall installations.

EQUIPMENT

Miscellaneous office and garage repair and lube equipment, cash registers, safes, fume exhausters, etc., not listed below, can be found in Section UIP 15. See Section UIP 11 for Tanks.

OFFICE OR BOOTH EQUIPMENT

Electronic remote control totalizer, per hose	$1,025 – $ 1,850
Computer cabinet	1,075 – 1,425
Tank monitor console	3,075 – 5,625
Food booth shelving, gondolas, etc., per booth	2,800 – 11,225
merchandise freezer, each	3,550 – 5,050
walk-in cooler, per square foot	80 – 125

AIR COMPRESSORS

HP	COST RANGE	HP	COST RANGE	HP	COST RANGE
1/3	$ 950 – $1,100	1 1/2	$2,050 – $2,425	7 1/2	$4,225 – $4,925
1/2	1,200 – 1,425	2	2,300 – 2,700	10	4,825 – 5,700
3/4	1,475 – 1,725	3	2,700 – 3,150	15	5,875 – 6,925
1	1,725 – 1,950	5	3,300 – 3,900	20	6,750 – 7,975

If the cost without installation is desired, deduct 30% on small size; 25% on medium, 20% on large sizes.

HOISTS

Frame, lift (in-ground)	COST RANGE
auto, 8,000-lb. single post	$ 6,000 – $ 7,075
8,000-lb. double post	7,625 – 9,275
truck, 11,000-lb. double post	8,175 – 9,800
16,500-lb. double post	10,900 – 12,525
truck, 19,500-lb. double post	11,725 – 13,075
24,000-lb. double post	13,625 – 15,525
bus or heavy truck, 36,000-lb. double post	16,900 – 19,075
Drive-on (surface mount)	
auto, 7,000-lb. four post	$7,350 – $ 9,000
8,000-lb. single post	6,550 – 7,625
truck, 12,000-lb. four post	8,450 – 10,075

Large commercial-type grease pits with air and electric outlets cost $8.25 to $11.75 per cubic foot. Installation cost of hoists is approximately 20% to 30% of the total cost.

PUMPS AND DISPENSERS

Mechanical dispenser including vapor recovery, exclusive of submerged pump			
single	$2,825	–	$3,650
twin	4,200	–	5,350
Electronic dispenser including vapor recovery, exclusive of submerged pumps			
single	4,800	–	6,425
twin	6,425	–	8,725
three hose	9,000	–	13,200
Add for double- (two-) sided operation	3,375	–	3,925
Add to all multiple types for mixed products, per hose	250	–	400
Add for point of purchase, per acceptor	2,225	–	2,825
Add to all types for integral suction pump, per dispenser	350	–	525
Submerged pumps, one pump may serve several dispensers			
1/3 horsepower	1,000	–	1,225
3/4 horsepower	1,200	–	1,525
1-1/2 horsepower	1,500	–	1,850
Industrial or Commercial pumps	2,025	–	2,525
Add for ticket printer and counter	375	–	550
Consumer pumps, electric	800	–	1,575
Utility pumps, electric, farm and ranch type	535	–	810
Hand pumps, farm and ranch type	260	–	390

Costs include 10% installation cost on aboveground items, 20% for submerged pumps.

AIR AND WATER SERVICE

Cost per unit	LOW COST	AVG.	GOOD
Air and water wells, disappearing hose	$425	$ 550	$ 650
Automatic tire inflater	975	1,150	1,375
Single swing-arm stand	325	400	500
Water or air hydrant	300	350	400

CAR WASHES

SECTION UIP 14

DRIVE-THRU CAR WASHES

Small single car drive-thru roll-over-robot type automated car washes cost $61,750 to $146,000 including equipment and building shell. Add yard improvements from Page 2.

SELF-SERVE CAR WASHES

Small coin-operated washes, for self-serve user operation typically cost $33,750 to $56,750 per stall including equipment and building. An open 8-bay facility may go as low as $26,000 per stall. Costs do not include yard improvements which may run 15% to 25% of stall costs.

DRIVE-THRU CAR WASHES

CLASS	TYPE	COST/ SQ.FT.	EXTERIOR WALLS	INTERIOR	LIGHTING & PLUMBING	HEAT
C	Good	$76.23	Decorative block or brick, tunnel doors, good roof and trim	Unfinished, concrete floor, good drains and sump	Good lighting and outlets, adequate water	Space heaters
	Average	63.69	Open ends, block or low-cost brick, average roof cover, little trim	Unfinished, concrete floor, drains, sump	Adequate electrical and water service and outlets	None
	Low cost	54.40	Side walls only, concrete block, shed or flat roof, very plain	Unfinished, concrete floor, adequate drains	Adequate electrical and water service and outlets	None
D	Good	73.02	Good stucco, siding or brick veneer, tunnel doors, good roof	Unfinished, concrete floor, good drains and sump	Good lighting and outlets, adequate water	Space heaters
	Average	60.82	Open ends, stucco or siding, average roof cover	Unfinished, concrete floor, drains, sump	Adequate electrical and water service and outlets	None
	Low cost	51.85	Side walls only, low-cost siding or stucco, shed or flat roof	Unfinished, concrete floor, adequate drains	Adequate electrical and water service and outlets	None
S	Good	73.48	Good metal and steel frame, tunnel doors, good roof and trim	Unfinished, concrete floor, good drains and sump	Good lighting and outlets, adequate water	Space heaters
	Average	60.24	Open ends, enameled siding on light frame, little trim	Unfinished, concrete floor, drains, sump	Adequate electrical and water service and outlets	None
	Low cost	50.54	Side walls only, low-cost siding on steel frame, shed or flat roof	Unfinished, concrete floor, adequate drains	Adequate electrical and water service and outlets	None

SELF-SERVE CAR WASHES

C	Good	$64.36	Decorative block or brick, bay doors, good roof	Unfinished, concrete floor, good drains and sump, equipment room	Good lighting and outlets, adequate water	Space heaters
	Average	49.83	End and bay walls only, block or low-cost brick, average roof cover, trim	Unfinished, concrete floor, adequate drains and sump, equipment room	Adequate electrical and water service and outlets	None
	Low cost	39.62	End and half-bay walls only, concrete block, shed or flat roof	Unfinished, concrete floor, adequate drains, sump, equipment room	Adequate electrical and water service and outlets	None
D	Good	61.13	Good stucco, siding or brick veneer, bay doors, good roof	Unfinished, concrete floor, good drains and sump, equipment room	Good lighting and outlets, adequate water	Space heaters
	Average	46.95	End and bay walls only, stucco or siding, average roof and trim	Unfinished, concrete floor, adequate drains and sump, equipment room	Adequate electrical and water service and outlets	None
	Low cost	37.05	End and half-bay walls only, low-cost siding or stucco	Unfinished, concrete floor, adequate drains, sump, equipment room	Adequate electrical and water service and outlets	None
S	Good	61.26	Good metal and steel frame, bay doors, good roof	Unfinished, concrete floor, good drains and sump, equipment room	Good lighting and outlets, adequate water	Space heaters
	Average	45.98	End and bay walls only, enameled siding on light frame	Unfinished, concrete floor, adequate drains and sump, equipment room	Adequate electrical and water service and outlets	None
	Low cost	35.48	End and half-bay walls only, low-cost siding on steel frame	Unfinished, concrete floor, adequate drains, sump, equipment room	Adequate electrical and water service and outlets	None

The base wall height is 12 feet (3.66 meters), excluding gables; add or deduct 2% for each foot (.305 meter) of deviation. Adjust for size and shape from page 5 and heat from tables on Page 1. For equipment costs, see Page 5. For floor heat, add $4.45 to $11.25 per square foot of heated area ($47.90 to $121.10 per square meter). For automatic door operators, add $850 to $1,175 each.

CAR WASHES

SECTION UIP 14

AUTOMATIC CAR WASHES

Full-service or tunnel car wash service buildings include finished office/sales area, locker and rest rooms and basic equipment room. Canopies and ornamental pylons are priced separately. Add heat from Page 1.

CLASS	TYPE	COST/ SQ. FT.	EXTERIOR WALLS	INTERIOR	LIGHTING & PLUMBING	HEAT
C	Excellent	$140.29	Best stone or brick, masonry trim, good fenestration, ornamentation	Good finish, best workmanship, many built-in features, waiting area	Good electrical, good commercial plumbing fixtures	Package A.C.
	Good	107.25	Good block or brick, good storefront and trim	Good office and retail space, tiled floors, restrooms, glazed view area	Average commercial fixtures, adequate interior circuits	Package A.C.
	Average	79.48	Average block or brick, little trim, small storefront	Small office, storage, restrooms, locker room, vinyl and carpet	Adequate commercial plumbing fixtures, standard electrical	Forced air
	Low cost	59.37	Concrete block, inexpensive sash and doors	Minimum finishes, vinyl composition tile, few built-in items	Minimum interior electrical and plumbing fixtures	Space heaters
D	Excellent	135.65	Best stucco, EIFS or masonry veneer, good fenestration, ornament.	Good finish, best workmanship, many built-in features, waiting area	Good electrical, good commercial plumbing fixtures	Package A.C.
	Good	103.39	Good stucco or brick veneer, good storefront and trim	Good office and retail space, tiled floors, restrooms, glazed view area	Average commercial fixtures, adequate interior circuits	Package A.C.
	Average	76.28	Average stucco or siding, little trim, small storefront	Small office, storage, restrooms, locker room, vinyl and carpet	Adequate commercial plumbing fixtures, standard electrical	Forced air
	Low cost	56.75	Stucco or siding, inexpensive sash and doors	Minimum finishes, vinyl composition tile, few built-in items	Minimum interior electrical and plumbing fixtures	Space heaters
S	Excellent	135.38	Best steel, masonry trim, good fenestration and ornamentation	Good finish, best workmanship, many built-in features, waiting area	Good electrical, good commercial plumbing fixtures	Package A.C.
	Good	102.45	Good steel, good storefront and trim	Good office and retail space, tiled floors, restrooms, glazed view area	Average commercial fixtures, adequate interior circuits	Package A.C.
	Average	75.04	Average painted steel, little trim, small storefront	Small office, storage, restrooms, locker room, vinyl and carpet	Adequate commercial plumbing fixtures, standard electrical	Forced air
	Low cost	55.40	Painted steel, inexpensive sash and doors	Minimum finishes, vinyl composition tile, few built-in items	Minimum interior electrical and plumbing fixtures	Space heaters

CARWASH CANOPIES

CLASS	TYPE	COST/ SQ. FT.	DESCRIPTION
CDS	Excellent	$61.64	Good tunnel walls and doors, concrete, built-up or steel roof, concrete floor, lighting, drains, sump, no heat
	Very good	50.34	Good tunnel walls and roof structure, open ends, concrete floor, good electrical and drains, sump, no heat
	Good	41.14	Some tunnel knee walls or column ornamentation, good roof and supports, electrical, concrete floor, drains
	Average	27.53	No walls, entrance, service canopy, metal or wood frame, finished soffit, lighting, concrete floor
	Fair	18.33	No walls, average canopy, decorative columns, adequate lighting, concrete floor
	Low cost	12.20	No walls, shade, patio cover, metal or wood, minimum electrical, concrete paving
	Cheap	8.13	No walls, light steel, fiberglass or shade netting roof on low-cost pipe, asphalt, minimum electrical, auto detail area

The base wall height is 12 feet, excluding gables; add or deduct 2% for each foot of deviation. Adjust for size and shape from tables on Page 5, and heat from page 1. Do not use shape table for canopies without walls, but the height adjustment will apply. For equipment costs, see Page 5.

CAR WASHES

SECTION UIP 14

EQUIPMENT COSTS

Equipment costs cover all equipment for standard tunnel-type car washes, but do not include building improvements, service station equipment, paving, signs, etc. Number of cars washed per hour is a function of the length of the wash line and the quantity and quality of the equipment. Low Cost classification is for the semi-automatic wash, while the Good car wash is fully automated with personnel only for interior cleaning and before and after service commensurate with the capacity (length) of the line. For a detailed breakdown of the equipment costs, see table below. The 30' to 50' cost range includes self-wash tunnels.

LENGTH OF LINE	LOW COST	AVERAGE	GOOD
30' (incl. self-console control)	$ 48,500	$ 68,500	$ 96,500
50'	96,250	121,000	153,250
75'	134,000	162,500	198,000
100'	160,750	192,500	230,250
125'	181,500	215,000	254,750
150'	198,750	233,750	275,000

UNIT COSTS	COST RANGE
Vacuum station, complete	$ 8,750 – $15,250
Conveyor 30'	12,500 – 19,500
Conveyor 50'	17,000 – 26,250
Conveyor 75'	21,250 – 33,000
Conveyor 100'	25,250 – 38,750
Conveyor 125'	29,000 – 43,750
Conveyor 150'	32,500 – 48,250
Tire brush washer	7,025 – 9,000
Tire solution applicator, inc. pump	2,825 – 3,375
Prep. hand gun	3,925 – 6,750
Undercarriage flush	1,700 – 2,350
Applicator arch (pre-final rinse or wax), each	2,500 – 3,925
Rinse and wax deluxe arch combo	7,075 – 9,275
Polish and wax arch combo	10,750 – 16,500
Mitting curtains	15,750 – 21,750
Brushes side panel	7,625 – 11,450
side and top combo	25,250 – 29,000
Hydraulic power PAC, each	3,650 – 6,150
Motor control	9,275 – 16,850
computer console	5,075 – 10,075
Solution feed, pump	4,475 – 7,025
Water reclamation/filtration	27,000 – 47,750
Air-dry blower	17,000 – 32,500
Washing machine, extractor	4,475 – 8,450
Mitting trough, hand wash, each	575 – 1,125

SELF-SERVE WASH AND DRIVE-THRU

Self-wash assembly equipment base, including hot water	$ 7,350 – $20,175
add per bay (including basic soap, wax, rinses)	4,350 – 8,450
degreaser-foam brush cleaner, extra waxes, base cost each	1,900 – 2,450
add per bay	625 – 1,425
Roll-over-robot, self-drive-thru, equipment base	36,000 – 50,500
add arch applicators from table above	
deluxe, including brushless (touch-free) system	61,750 – 90,000
Pay entry, computerized communication system and signage	4,500 – 9,000
Heat freeze protection	1,125 – 3,375
Air-dry blower	14,500 – 25,500
Water softener	2,225 – 6,725
Water reclamation/filtration	5,625 – 30,800
Vacuum, per exterior station (interior installations, less 25%)	1,325 – 2,225
Change machine/automated pay station	2,600 – 5,625
Towel vending machine	425 – 625

FLOOR AREA/SHAPE MULTIPLIERS

AREA PER UNIT Sq. Ft.	MULTIPLIER Carwashes	AREA PER UNIT Sq. Ft.	MULTIPLIER Carwashes
400	1.118	**2,600**	.891
600	1.064	**2,800**	.883
800	1.027	**3,200**	.869
1,000	1.000	**3,600**	.856
1,200	.978	**4,000**	.846
1,400	.960	**4,400**	.836
1,600	.945	**4,800**	.827
1,800	.932	**5,200**	.819
2,000	.920	**5,600**	.812
2,200	.909	**6,000**	.805
2,400	.900	**7,000**	.790

PREFABRICATED METAL BUILDINGS

SECTION UIP 14

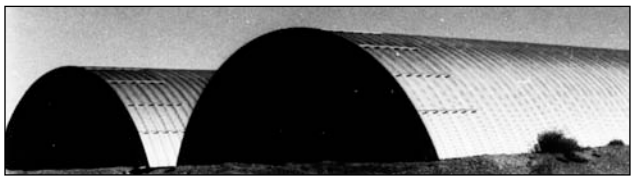
SQUARE FOOT COSTS

Costs are for standard galvanized steel buildings engineered for a 20-lb. live load with minimum fenestration, erected on concrete footings, without floors, lights or heat. The normal cost range is from 70% (rural) to 150% (commercial) of the listed costs depending on type of frame, skin and fenestration. For buildings modified for grain storage, add 15% to 25%. Refinements are given below. All costs are based on professional labor supervised by a contractor. For amateur workmanship or work done by farm or ranch help, costs should be decreased by 15% to 30%.

QUONSET BUILDINGS

(Base Height = 20' Center of Arch)

LENGTH (feet)	WIDTH 30'	40'	60'	70'
30'	$16.30	-----	-----	-----
36'	15.60	-----	-----	-----
48'	14.50	$13.30	-----	-----
60'	13.75	12.55	$11.95	-----
72'	13.15	12.00	11.40	$11.00
84'	12.70	11.55	10.95	10.65
96'	12.20	11.15	10.65	10.25
108'	11.90	10.85	10.30	9.90
120'	11.55	10.55	9.95	9.65
160'	10.80	9.80	9.25	9.00
200'	-----	9.25	8.75	8.55
240'	-----	8.90	8.40	8.20



PRE-ENGINEERED STEEL BUILDINGS

WIDTH (feet)	HEIGHT (to eaves)	LENGTH/WIDTH RATIO 1.0	1.5	2.0	3.0	4.0	5.0
20'	**10'**	$13.90	$13.20	$12.70	$11.95	$11.50	$11.15
30'	**12'**	11.90	11.35	11.00	10.50	10.20	9.85
40'	**14'**	12.00	11.30	10.80	10.20	9.70	9.35
50'	**14'**	10.70	10.30	10.05	9.70	9.45	9.25
60'	**14'**	9.75	9.50	9.30	9.05	8.90	8.70
80'	**16'**	9.90	9.60	9.45	9.10	8.95	8.75
100'	**16'**	9.75	9.35	9.10	8.70	8.45	8.30
140'	**16'**	8.70	8.45	8.25	7.95	7.75	7.60
160'	**18'**	8.60	8.35	8.20	7.90	7.65	7.50
200'	**18'**	8.20	7.95	7.75	7.60	7.40	7.30

HEIGHT: Add or deduct 2% for each foot of deviation from base.

LIGHT: 12 lb. LIVE LOAD: Deduct 10%. HEAVY LOAD: 30 lb., add 10%; 40lb., add 25%.

SANDWICH PANELS: Add 50% to 70%. ALUMINUM SKIN: Add 10% to 15%.

ENAMELED STEEL: Add 5%. SLANT-WALL BUILDINGS: Deduct 5% to 15%.

WOOD-POLE FRAMED BUILDINGS: Deduct 10% to 25%.

BUILDINGS CONSTRUCTED OF COMPOSITE PLASTICS (FRP): Add 65% to 85%.

BUILDING IMPROVEMENT UNIT COSTS

FOUNDATIONS – Concrete column footings – Apply to total number of columns. For perimeter footings and floors or other interior components see Section SEG 3 or SEG 4 or Unit-in-Place Cost sections.

FOUNDATIONS (Cont'd.)	Low Cost	Avg.	Good	Excl.
Steel columns, light pre-engineered frame	$27.75	$37.25	$49.50	$66.50
Wood columns, light pole frame	21.25	30.25	43.00	61.00

Add or deduct 2% for each foot of deviation from 14' base height.

FRAME – Apply to total floor area.

Steel, pre-eng. open web tapered truss	$2.05	$2.30	$2.50	$2.75
post and open web truss	2.15	2.35	2.60	2.95
post and beam	2.20	2.45	2.75	3.05
tapered plate, post/beam end walls	2.50	2.95	3.50	4.05
tapered plate	2.80	3.25	3.85	4.50
Plastic, fiber reinforced	8.30	9.05	9.90	10.90
Wood, pole frame, untreated	1.20	1.60	2.20	3.05
treated wood	1.25	1.65	2.30	3.15

Add or deduct 4% for each foot of deviation from 14' base height.

Add 4% for high profile (4:12 roof slope) buildings.

FLOORS: See Section SEG 3 or SEG 4.

ELECTRICAL – Apply to total floor area. For rural utility lighting, deduct 50% to 80%.

Lighting, incandescent	$ .75	$ 1.10	$ 1.65	$ 2.30
Lighting, fluorescent	.95	1.35	1.85	2.55

WALL COVER AND SUPPORTS – Apply to total wall area.

Wall girts, steel	$ .70	$ .95	$ 1.25	$ 1.70
wood	.35	.45	.65	.95
plastic, fiber reinforced	1.05	1.45	1.95	2.60
Aluminum, light (.0175" to .024" thick)	1.70	1.90	2.15	2.35
heavy (.032" to .050" thick)	2.80	3.10	3.60	4.05
Steel, light (30 to 26 gauge)	1.25	1.55	1.80	2.20
heavy (24 to 18 gauge)	2.40	2.80	3.25	3.85
Plastic (FRP) 8 oz. to 16 oz.	2.30	3.15	4.35	6.05
Add for fenestration, per sq. ft. of opening (wood frame, deduct 25% – 50%).				
doors, sliding	$ 8.00	$10.25	$13.25	$17.75
overhead	12.00	14.50	17.50	20.75
pedestrian	23.00	30.00	39.25	51.00
windows or louvers	21.25	27.00	34.25	43.50
Add for canopies, per sq. ft. of canopy area	10.25	13.00	16.50	21.25
Add for enameled paint	.15	.25	.40	.60
Add for sandwich panel	3.25	4.75	7.00	10.00
Add for insulation	.45	.55	.70	.85
Add for exterior sheathing	.80	.90	1.00	1.15
Add for interior sheathing or liner, finished	1.30	1.55	1.80	2.15

ROOF COVER AND SUPPORTS – Apply to roof area.

Roof purlins, steel	$ .80	$ 1.05	$ 1.40	$ 1.80
wood	.45	.60	.90	1.15
plastic, fiber reinforced	1.30	1.70	2.25	2.90
Aluminum, light (.0175" to .024" thick)	1.60	1.75	1.95	2.20
heavy (.032" to.050" thick)	2.65	3.00	3.45	3.85
Steel, light (30 to 26 gauge)	1.10	1.40	1.70	2.00
heavy (24 to 18 gauge)	2.30	2.65	3.10	3.70
Plastic (FRP 8 oz. to 16 oz.)	2.15	2.90	4.00	5.40
Add for enameled paint	.15	.25	.40	.60
Add for sandwich panel	2.20	3.20	4.85	7.25
Add for insulation	.60	.70	.85	1.05
Add for interior metal liner	1.20	1.35	1.60	1.85
Add for overhang soffit, per sq. ft. of soffit	2.90	3.50	4.10	4.85

Add 6% for high profile (4:12 roof slope) buildings. Add for ventilators, fiberglass light panels or skylights from Section UIP 4.

GREENHOUSES

SECTION UIP 14

RESIDENTIAL GREENHOUSES

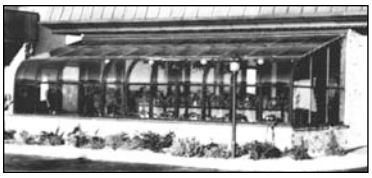
The following are average costs per square foot for stock residential greenhouses with standard glazing of double strength glass with one end wall door. Foundations and vents are included but no floor, heat, electrical, plumbing or watering devices. Costs are based on professional labor. For amateur workmanship, decrease costs by 15% to 25%. The low end of the cost range represents wood or cheap aluminum greenhouses with plain stem walls while the high end is a weatherproofed, concealed connection, tubular framed structure. The high end good colored frame may be full length or set on a high cost masonry stem wall. Custom designed installations can run 25% higher. Cheap pipe frame structures can run 25% lower. For polyethylene covers, deduct 15% to 25%.

AREA SQ. FT.	EVEN SPAN COST RANGE		PLAIN GABLE END WALL DEDUCTION		LEAN-TO COST RANGE	
50	$43.25 –	$67.75	$180.00 –	$ 245.00	$42.75 –	$72.00
100	37.00 –	58.00	385.00 –	505.00	35.75 –	59.25
150	34.00 –	53.25	385.00 –	505.00	32.00 –	53.25
200	32.00 –	49.75	495.00 –	640.00	29.50 –	49.00
250	30.25 –	47.50	495.00 –	640.00	27.75 –	46.00
300	29.25 –	45.50	495.00 –	640.00	26.75 –	43.75
400	27.50 –	42.75	620.00 –	860.00	24.75 –	40.25
600	25.00 –	39.00	620.00 –	860.00	22.00 –	36.25
800	23.75 –	36.50	620.00 –	860.00	20.50 –	33.50
1,000	22.25 –	35.00	775.00 –	1,105.00	----- –	-----

For gable end doors, add or deduct $445 to $1,000 each. For commercial doors, add 25%.
For tempered or laminated safety glass or structural polycarbonate, add 25%.
For tinted or heat reflective glass, add 15% to 20%. For insulated glass, add 40% to 80%.
Heaters – $490 to $810; Humidifiers – $390 to $1,125; Coolers – $785 to $1,225; Ventilating fans – $245 to $560;
Partitions, glazed, per square foot of partition – $8.25 to $11.25.
Planting benches, per square foot of bench:
Plastic grid, $2.40 to $3.80; wood slat, $3.75 to $4.35
Steel mesh, $3.80 to $6.60

SOLAR ROOMS

The following are average costs per square foot for three-sided lean-to glass solar rooms with curved eaves attached to a permanent structure used for living space or commercial applications. Costs include one end wall door, foundations and vents or windows. Floor, heat, electrical and plumbing are not included. The low end of the cost range represents tempered glazing in a good metal tubular frame while the high end has insulated, coated and tinted safety glass. Custom designed installations can run up to 50% higher depending on the quality of finish work.



AREA SQ. FT.	COST RANGE		AREA SQ. FT.	COST RANGE	
50	$78.25 –	$211.25	**300**	$49.75 –	$135.25
100	66.00 –	177.75	**400**	46.50 –	126.00
150	59.50 –	160.75	**600**	42.25 –	114.00
200	55.25 –	149.50	**800**	39.25 –	106.00
250	52.50 –	141.75	**1,000**	37.00 –	100.50

For gable end and door adjustments, see table above including glazing additives.
Extra tall bays, add 15%. For laminated wood framing, add 10%. Straight eaves, deduct 7%.
For corner hips and valleys, add $21.25 to $36.25 per square foot to corner area.
For decorative lights incorporated into frame members, add $13.75 to $20.75 per linear foot.
For built-in shades, add $9.50 to $20.25 per square foot of covered area. For motorized operation, add $655 to $1,500 per operator.

PREFABRICATED BUILDINGS

SECTION UIP 14

OFFICE STRUCTURES

The following are average costs per square foot for prefabricated office structures. The low quality prices represent “mobile” type offices like those found at construction sites. Minimum fenestration, electrical and very basic finishes (paneling) are included, but plumbing is not. The average costs represent “mobile” type offices also, but of a more permanent nature, like temporary office headquarters or remote branch offices. Average exterior and interior finishes, average fenestration, suspended ceilings and one bathroom (two fixtures) are included. The high quality costs represent good modular offices or commercial structures. Good exterior and interior finishes, better than average fenestration and average restrooms (five fixtures) are included. Foundation costs, heating, ventilating or air conditioning and utility hookups are not included in any of the costs.

ADJUSTMENTS

Foundation, piers,
$8.75 to $32.50 each.

Perimeter wall,
$11.50 to $36.25 lin. ft.

Concrete slab,
$3.50 per sq. ft.

Plumbing,
$390.00 per fixture.

Steps, $76.25 per step.
Landing, $20.75 per sq. ft.

AREA (SQ. FT.)	LOW COST	AVERAGE	HIGH COST
100	$34.35	-----	-----
200	28.05	$39.15	$50.60
300	24.90	34.85	44.95
400	22.90	32.00	41.40
500	21.45	30.05	38.80
600	20.35	28.50	36.80
800	18.70	26.20	33.90
1,000	-----	24.60	31.75
1,500	-----	21.85	28.30
2,000	-----	20.10	26.05

For H.V.A.C., see Section UIP 3.

INTERIOR MODULAR OFFICES

The following are average installed costs per square foot for four-walled prefabricated modular in-plant offices. Included in costs are vinyl wall covering, suspended acoustical ceiling, fluorescent lighting, required doors, windows and electrical switches and outlets. Floor structure, covering, plumbing and heating, ventilating or air conditioning are not included. Add 5% for 50 lbs. per sq. ft. storage capacity on top of offices. For two-story units with structural floor, add 15%. For three-walled units, deduct 17%. For two-walled units, deduct 30%. For fire-sound rated panels, add 5% to 10%. For each foot of height over an 8' base, add 8%.

FLOOR AREA (SQ. FT.)	COST	FLOOR AREA (SQ. FT.)	COST
50	$56.70	**300**	$28.20
100	43.20	**400**	25.20
150	36.95	**600**	21.55
200	33.05	**800**	19.25
250	30.25	**1,000**	17.60

For environmental machine enclosures, add 125% to 150% to all costs above.

AIR-SUPPORTED STRUCTURES

The following are average installed costs per square foot for standard air-supported storage structures with minimum doors, including anchoring supports, primary fans and back-up inflation units. Add for perimeter grade beam, flooring, lighting, heat and other interior features from Section SEG 4 or Unit-in-Place costs. For interior thermal liners, add 10% to 20%.

Fabric shell lives can range widely depending on the membrane material, the method of installation and appropriate maintenance. The lives listed represent averages under standard applications. A replacement membrane generally may cost 35% to 50% of the initial cost of the structure.

TYPICAL STRUCTURE LIVES

TYPE	YEARS
Good (welded seams)	10 – 14
Average	5 – 8
Low cost (sewn seams)	3 – 5

QUALITY AND TYPE	AREA IN SQUARE FEET 3,000	5,000	10,000	15,000
Good vinyl-polyester or Tedlar fabric	$15.15	$13.20	$11.05	$9.90
Average reinforced vinyl fabric	10.30	9.35	8.15	7.55
Low cost, woven polyethylene	8.55	7.50	6.25	5.65
TYPE	**20,000**	**30,000**	**50,000**	**70,000**
Good vinyl-polyester or Tedlar fabric	$9.20	$8.30	$7.25	$6.65
Average reinforced vinyl fabric	7.10	6.60	5.95	5.60
Low cost, woven polyethylene	5.30	4.75	4.20	3.85

For recreational (tennis/golf) structures, see Section UIP 17. Roof structures, see Section UIP 4.

PREFABRICATED MEZZANINES

The following costs are average per-square-foot costs for prefabricated steel mezzanines for inside use, not to exceed a design load of 150 pounds per square foot. The costs include all structural supports, stairs and flooring for the mezzanine level. The costs do not include any footing or foundations. For mezzanines constructed of wood deduct 7%.

AREA (SQ. FT.)	COST	AREA (SQ. FT.)	COST
100	$43.50	**500**	$26.50
200	35.25	**600**	25.00
300	31.00	**800**	23.00
400	28.50	**1,000**	21.50

Stair landings cost $60.00 to $75.25 per square foot of platform area.

PREFABRICATED BUILDINGS AND BULK OIL FACILITIES

SECTION UIP 14

ATM STRUCTURES

The following are average costs for free-standing Automatic Teller Machine (ATM) structures. Costs include steel frame construction, membrane roof, welded glass and appropriate floor and ceiling finishes. Foundations, air conditioning, signs and ATM machines are not included.

Enclosed ATM Structures with lobby:	COST RANGE
1 ATM (approximately 140 sq. ft.)	$33,500 – $41,500
2 ATMs (approximately 240 sq. ft.)	41,500 – 46,750
Drive-up/walk-up ATM structures:	
1 ATM (approximately 50 sq. ft.)	25,000 – 27,750
2 ATMs (approximately 100 sq. ft.)	27,750 – 32,000
Air conditioning/heating:	
Enclosed equipment areas only (all structures):	
1 ATM	2,125 – 2,350
2 ATMs	3,050 – 3,425
add for lobby area	1,300 – 1,525

For automated teller machines, see Section UIP 2.

GUARD HOUSES AND TOLL BOOTHS

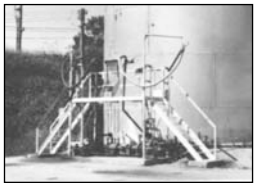
The following are square foot costs for small, free-standing, portable exterior buildings that are normally used for guard, gate and pump houses, toll booths, etc. Costs include standard aluminum frame, insulated walls and ceiling, flooring, windows and door with hardware. Foundations, heating and air conditioning are not included. Add 10% to 15% for a 24" overhang. See Unit-in-Place Section UIP 3 for air conditioning costs. For all-steel construction, add 25% to 50%. For interior non-weatherized use, deduct 20% to 40%.

AREA	COST RANGE	AREA	COST RANGE
15	$178.75 – $217.75	**80**	$102.75 – $123.00
30	143.25 – 174.50	**90**	96.50 – 115.50
40	131.00 – 158.75	**100**	91.00 – 109.50
50	122.00 – 148.00	**120**	82.50 – 99.50
60	115.00 – 139.75	**200**	63.00 – 76.25
70	109.50 – 133.00	**400**	43.25 – 53.25

For bullet-resistant models, add per square foot:

Level 1 (small-caliber pistol rated)	$120.00 – $240.00
Level 4 (high-power rifle rated)	260.00 – 420.00

BULK OIL PLANTS



Small bulk oil plants for truck or tank car operation cost $47,500 to $77,000 for a two-rack arm assembly and $75,750 to $125,500 for a four-arm assembly including rack, all equipment and an average amount of piping, but excluding tanks and spill containment.

UNIT COSTS	COST RANGE
Loading rack platform, per square foot installed.	
single-sided	$ 130 – $ 170
double-sided	175 – 225
add for roof	10 – 20
add for stairway, each	625 – 1,525
for explosion resistive const., add	3,350 – 3,900

For each foot of height above 10 feet, increase costs by 3%.

For platforms with adjustable height operation, add 100% to 150%, adjustable gangways only, add 50% to 100%.

Loading rack equipment, per arm assembly (includes rack arm, nozzle and hose, closing throttle, gate valves, direct read meters and pumps)	$14,500 – $24,250
Equipment at tanks, per tank assembly (includes miscellaneous valves and line strainers)	525 – 1,225

See Section UIP 11 for Tanks – Section UIP 12 for Pipe.

SPILL CONTAINMENT SYSTEMS

The following are average costs per square foot for installed above-ground spill containment systems and include platform ramps, top grating, collector pans, support pans and leakproof drain connectors to a central collection system. Cost of piping to the central collection point or tanks is not included.

GRATING TYPE	TRUCK	RAIL
Fiberglass	$110 – $195	$125 – $215
Galvanized steel	135 – 235	165 – 280

PRECAST CONCRETE BUILDINGS

The following are average square foot costs for small prefabricated concrete modular buildings for weather- and vandal-resistant equipment storage. Costs include all concrete wall, roof and floor panels, steel wall vents and entry door, and minimum electrical. Foundations, air conditioning and equipment power panel and wiring are not included.

AREA	COST RANGE	AREA	COST RANGE
100	$72.75 – $103.25	**500**	$39.75 – $52.75
150	62.50 – 87.25	**750**	34.00 – 44.50
200	55.75 – 77.50	**1,000**	30.50 – 39.50
300	48.00 – 65.50	**1,500**	26.25 – 33.25