

SERVICE STATIONS

SECTION UIP 11

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 \$25.50 to \$27.50 per square foot.

| Siding-Stucco-Glass | | Steel-Glass or Masonry | | | | | |
|---------------------|----------|------------------------|----------|------|----------|------|----------|
| Area | Cost | Area | Cost | Area | Cost | Area | Cost |
| 25 | \$215.00 | 75 | \$130.00 | 25 | \$235.00 | 75 | \$145.00 |
| 50 | 155.00 | 100 | 120.00 | 50 | 180.00 | 100 | 130.00 |

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 | \$310.00 | 100 | \$205.00 |
| 75 | 240.00 | 125 | 185.00 |

GOOD STEEL – Good security structure with bullet proof glass and two or three commercial plumbing fixtures. For intercom system, add \$530 plus \$135 per speaker.

| | | | |
|-----|----------|-----|----------|
| 75 | \$440.00 | 150 | \$290.00 |
| 100 | 365.00 | 200 | 235.00 |

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 | \$24.95 | \$28.50 | \$34.00 | \$39.75 |
| Steel | 21.40 | 27.50 | 35.00 | 44.25 |
| Wood frame and sheathing | 18.75 | 23.75 | 28.75 | 36.75 |

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

| | | | | |
|----------------------|---------|---------|---------|---------|
| Concrete slab | \$ 7.79 | \$ 9.15 | \$10.85 | \$12.90 |
| Wood floor structure | 10.65 | 12.00 | 13.60 | 15.30 |

Add for floor covering from Section UIP 2.

ROOF – Cost per square foot of roof area.

| | | | | |
|-----------------------------|---------|---------|---------|---------|
| Steel prefab. frame/decking | \$24.55 | \$27.25 | \$31.00 | \$35.00 |
| Wood frame and sheathing | 13.45 | 14.35 | 15.25 | 16.40 |

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

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

| | Low Cost | Avg. | Good | Excellent |
|---|----------|---------|---------|-----------|
| Concrete block | \$16.95 | \$18.50 | \$20.80 | \$23.15 |
| Metal | 19.40 | 21.40 | 24.05 | 26.50 |
| Metal/glass, security | 28.75 | 36.00 | 42.50 | 51.00 |
| Wood frame, drywall (plaster, add 15% to 20%) | 12.30 | 13.80 | 15.00 | 16.40 |

Add for cabinetry from Section UIP 2.

ELECTRICAL

| | | | | |
|-----------------------|---------|---------|---------|----------|
| Base cost per station | \$7,250 | \$8,400 | \$9,700 | \$11,200 |
| Add per circuit | 520 | 575 | 680 | 780 |

WALLS – Cost per square foot of exterior wall area.

| | | | | |
|-------------------------------------|----------|----------|----------|----------|
| Steel and glass, painted | \$ 25.75 | \$ 28.50 | \$ 31.75 | \$ 35.25 |
| Steel and glass, porcelainized | 28.50 | 31.75 | 36.25 | 40.00 |
| Steel panels, masonry vener | 32.25 | 36.75 | 42.00 | 48.25 |
| Steel panels, block backup | 31.50 | 35.25 | 39.00 | 43.50 |
| Wood frame, stucco or siding | 22.85 | 24.55 | 25.75 | 27.75 |
| Wood frame, brick veneer | 27.75 | 29.75 | 32.75 | 36.25 |
| Brick masonry | 30.50 | 33.75 | 38.50 | 42.00 |
| Concrete block | 24.55 | 26.50 | 29.50 | 32.75 |
| Overhead steel or aluminum doors | 18.15 | 20.80 | 24.05 | 27.25 |
| Sectional, roll-up | 18.75 | 22.25 | 25.75 | 29.75 |
| Overhead plastic doors | 16.40 | 18.50 | 20.80 | 23.15 |
| Overhead wood doors | 15.00 | 16.95 | 18.75 | 21.40 |
| Folding steel gates | 19.65 | 22.25 | 24.95 | 27.75 |
| Add for electric door operator | 1,240.00 | 1,450.00 | 1,580.00 | 1,810.00 |

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

PLUMBING

| | | | | |
|------------------|---------|---------|---------|---------|
| Cost per fixture | \$1,840 | \$2,220 | \$2,725 | \$3,275 |
|------------------|---------|---------|---------|---------|

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 | \$ 3.20 | \$4.15 | \$ 5.35 | \$ 6.95 |
| Space heaters, suspended | 1.30 | 1.80 | 2.55 | 3.50 |
| Wall furnace | 1.55 | 1.90 | 2.30 | 2.80 |
| Package A.C. (short ductwork) | 5.90 | 7.80 | 10.25 | 13.55 |
| Heat pump system | 6.40 | 8.85 | 12.25 | 17.00 |
| Evaporative cooler | 2.75 | 3.30 | 3.95 | 4.75 |
| Individual thru-wall heat pump | 2.75 | 3.80 | 5.20 | 7.10 |

Small individual heat pumps cost \$1,600 to \$2,160 per ton of rated capacity.

SERVICE STATIONS

SECTION UIP 11

YARD IMPROVEMENTS

PAVING

| | LOW COST | AVG. | GOOD |
|---|----------|---------|----------|
| Cost per square foot | | | |
| Concrete islands | \$10.55 | \$12.30 | \$ 14.35 |
| Island pump shelters, including lighting/supports | 53.00 | 69.00 | 90.00 |
| 5" - 6" concrete, approaches and drives | 4.45 | 5.92 | 7.39 |
| 4" concrete, walks, etc. | 3.70 | 4.81 | 5.92 |
| Apron channel drain and grate, per linear foot | 69.00 | 90.00 | 115.00 |
| Asphalt | 2.28 | 3.39 | 4.11 |
| 6" curb, per linear foot | 10.30 | 12.95 | 16.35 |
| Precast concrete bumpers, per linear foot | 5.56 | 7.09 | 9.26 |
| Wood bumpers, per linear foot | 5.16 | 7.39 | 10.05 |
| Metal guard rail, pipe or posts, per linear foot | 24.55 | 32.50 | 44.00 |

YARD LIGHTING

| | | | |
|--------------------------------------|--------|---------|---------|
| Cost per pole, 12' | \$ 970 | \$1,190 | \$1,520 |
| Cost per pole, 24' | 1,470 | 1,760 | 2,200 |
| Add per fixture, incandescent | 450 | 550 | 745 |
| Fluorescent or quartz iodine | 850 | 1,020 | 1,190 |
| Mercury vapor | 940 | 1,240 | 1,730 |
| High pressure sodium or metal halide | 1,060 | 1,520 | 2,140 |

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 | \$87.00 - \$185.00 |
| Metal, painted two sides | 58.00 - 86.00 |
| Painted one side | 45.75 - 67.00 |
| Add for porcelainized metal, per face | 10.25 - 13.45 |
| Add for neon tubing, per face | 35% - 45% |
| Plastic interior lighting | 70.00 - 100.00 |
| Spheres, per foot of diameter, including post | 760 - 1,140 |

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 \$1,490 to \$3,325 each.

| | | | |
|----|-------------------|-----|---------------------|
| 4" | \$52.00 - \$69.00 | 10" | \$105.00 - \$170.00 |
| 6" | 70.00 - 105.00 | 12" | 120.00 - 205.00 |
| 8" | 89.00 - 135.00 | 14" | 135.00 - 235.00 |

PIPING

Average cost: \$1,240 to \$1,630 per pump or dispenser per product, plus \$800 to \$1,070 per tank, plus \$425 to \$550 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 | \$1,520 - \$ 2,725 |
| Computer cabinet | 1,550 - 2,070 |
| Tank monitor console | 4,500 - 8,150 |
| Food booth shelving, gondolas, etc., per booth | 4,050 - 16,200 |
| Merchandise freezer, each | 5,100 - 7,350 |
| Walk in cooler, per square foot | 115 - 190 |

AIR COMPRESSORS

| HP | COST RANGE | HP | COST RANGE | HP | COST RANGE |
|-----|-------------------|----|-------------------|----|--------------------|
| 1/3 | \$1,370 - \$1,630 | 1½ | \$2,950 - \$3,625 | 7½ | \$6,200 - \$ 7,300 |
| 1/2 | 1,760 - 2,120 | 2 | 3,300 - 4,000 | 10 | 6,950 - 8,400 |
| 3/4 | 2,140 - 2,525 | 3 | 3,925 - 4,625 | 15 | 8,600 - 10,200 |
| 1 | 2,480 - 2,850 | 5 | 4,800 - 5,700 | 20 | 9,800 - 11,700 |

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 | \$ 8,700 - \$10,300 |
| 8,000 lb. double post | 11,800 - 14,400 |
| Truck, 11,000 lb. double post | 17,100 - 19,100 |
| 16,500 lb. double post | 11,100 - 13,500 |
| Truck, 19,500 lb. double post | 15,800 - 18,200 |
| 24,000 lb. double post | 19,800 - 22,500 |
| Bus or heavy truck, 36,000 lb. double post | 24,500 - 27,800 |
| Drive-on (surface mount) | |
| Auto, 7,000 lb. four post | \$10,700 - \$13,100 |
| 8,000 lb. single post | 12,400 - 14,700 |
| Truck, 12,000 lb. four post | 9,550 - 11,100 |

Large commercial-type grease pits with air and electric outlets cost \$12.00 to \$17.30 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 | \$4,075 - \$ 5,300 |
| Twin | 6,150 - 7,750 |
| Electronic dispenser including vapor recovery, exclusive of submerged pumps | |
| Single | 6,900 - 9,400 |
| Twin | 9,400 - 12,700 |
| Three hose | 13,100 - 19,200 |
| Add for double (two) sided operation | 4,925 - 5,700 |
| Add to all multiple types for mixed products, per hose | 355 - 575 |
| Add for point of purchase, per acceptor | 3,250 - 4,075 |
| Add to all types for integral suction pump, per dispenser | 520 - 745 |
| Submerged pumps, one pump may serve several dispensers | |
| 1/3 horsepower | 1,500 - 1,780 |
| 3/4 horsepower | 1,760 - 2,220 |
| 1 1/2 horsepower | 2,200 - 2,725 |
| Industrial or Commercial pumps | 2,875 - 3,725 |
| Add for ticket printer and counter | 550 - 780 |
| Consumer pumps, electric | 1,140 - 2,280 |
| Utility pumps, electric, farm and ranch type | 780 - 1,170 |
| Hand pumps, farm and ranch type | 370 - 565 |

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 | \$ 620 | \$ 780 | \$ 975 |
| Automatic tire inflater | 1,470 | 1,700 | 2,020 |
| Single swing arm stand | 480 | 575 | 720 |
| Water or air hydrant | 450 | 520 | 575 |

CAR WASHES

SECTION UIP 11



DRIVE THRU CAR WASHES

Small single car drive thru roll over robot type automated car washes cost \$107,000 to \$219,000 including equipment and building shell. Large commercial truck and municipal fleet washes cost \$339,000 to \$662,000 per bay. Add yard improvements from Page 2.



SELF SERVE CAR WASHES

Small coin operated washes, for self serve user operation typically cost \$49,100 to \$82,500 per stall including equipment and building. An open 8 bay facility may go as low as \$38,000 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 | Excellent | \$132.06 | Best block or concrete, masonry trim, good tunnel doors, roof and trim | Good finish, drains and sump, small storage, office and/or waiting area | Good electrical, good commercial fixtures and outlets | Space heaters |
| | Good | 112.60 | 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 | 92.37 | 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 | 78.42 | 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 | 106.98 | 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 | 87.43 | Open ends, stucco or siding, average roof cover | Unfinished, concrete floor, drains, sump | Adequate electrical and water service and outlets | None |
| | Low cost | 74.07 | 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 | Excellent | 133.57 | Best steel, masonry trim, good tunnel doors, roof and trim | Good finish, drains and sump, small storage, office and/or waiting area | Good electrical, good commercial fixtures and outlets | Space heaters |
| | Good | 111.92 | 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 | 90.15 | Open ends, enameled siding on light frame, little trim | Unfinished, concrete floor, drains, sump | Adequate electrical and water service and outlets | None |
| | Low cost | 75.18 | 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 |
| | Cheap | 62.41 | Light pre-engineered metal bldg. | Unfinished, concrete floor, drains | Minimum electrical and water service | None |

SELF-SERVE CAR WASHES

| | | | | | | |
|----------|-----------|----------|---|--|---|---------------|
| C | Excellent | \$116.54 | Best block or brick, masonry or EIFS trim, good tiled bays and roof | Unfinished, concrete floor, good drains and sump, equipment room | Good electrical, good commercial fixtures | Space heaters |
| | Good | 93.34 | 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 | 71.18 | 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 | 56.58 | 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 | 87.96 | 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 | 66.44 | 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 | 52.45 | 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 | 91.61 | 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 | 67.76 | 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 | 52.29 | 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 |

NOTE: For refinement notes, see bottom of page 4

CAR WASHES

SECTION UIP 11

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 | \$210.33 | 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 | 160.91 | 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 | 117.60 | 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 | 86.98 | 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 | 201.83 | 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 | 153.99 | 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 | 112.01 | 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 | 82.47 | 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 | 209.16 | 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 | 158.39 | 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 | 114.49 | 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 | 83.73 | 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 | \$88.85 | Good tunnel walls and doors, concrete, built up or steel roof, concrete floor, lighting, drains, sump, no heat |
| | Very good | 72.46 | Good tunnel walls and roof structure, open ends, concrete floor, good electrical and drains, sump, no heat |
| | Good | 59.16 | Some tunnel knee walls or column ornamentation, good roof and supports, electrical, concrete floor, drains |
| | Average | 39.49 | No walls, entrance, service canopy, metal or wood frame, finished soffit, lighting, concrete floor |
| | Fair | 26.24 | No walls, average canopy, decorative columns, adequate lighting, concrete floor |
| | Low cost | 17.41 | No walls, shade, patio cover, metal or wood, minimum electrical, concrete paving |
| | Cheap | 11.57 | 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 (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 \$6.44 to \$16.30 per square foot of heated area. For automatic door operators, add \$115 to \$1,730 each.

CAR WASHES

SECTION UIP 11

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) | \$ 70,750 | \$ 99,500 | \$140,000 |
| 50' | 139,000 | 176,000 | 222,000 |
| 75' | 195,000 | 237,000 | 288,000 |
| 100' | 234,000 | 280,000 | 334,000 |
| 125' | 264,000 | 312,000 | 371,000 |
| 150' | 289,000 | 339,000 | 400,000 |

| UNIT COSTS | COST RANGE |
|--|---------------------|
| Vacuum station, complete | \$12,900 – \$22,200 |
| Conveyor 30' | 18,100 – 28,400 |
| Conveyor 50' | 24,600 – 38,400 |
| Conveyor 75' | 30,800 – 47,800 |
| Conveyor 100' | 37,200 – 56,500 |
| Conveyor 125' | 41,900 – 64,000 |
| Conveyor 150' | 46,800 – 70,000 |
| Tire brush washer | 10,200 – 13,100 |
| Tire solution applicator, inc. pump | 3,925 – 4,925 |
| Prep. hand gun | 5,700 – 9,800 |
| Undercarriage flush | 2,460 – 3,400 |
| Applicator arch (pre-final rinse or wax), each | 3,650 – 5,700 |
| Rinse and wax deluxe arch combo | 10,300 – 13,500 |
| Polish and wax arch combo | 15,500 – 24,000 |
| Mitting curtains | 22,800 – 31,600 |
| Brushes side panel | 10,800 – 16,800 |
| Side and top combo | 37,200 – 41,900 |
| Hydraulic power PAC, each | 5,300 – 8,950 |
| Motor control | 13,500 – 24,500 |
| Computer console | 7,400 – 14,700 |
| Solution feed, pump | 6,500 – 10,200 |
| Water reclamation/filtration | 39,300 – 69,250 |
| Air dry blower | 24,600 – 46,800 |
| Washing machine, extractor | 6,500 – 12,400 |
| Mitting trough, hand wash, each | 810 – 1,630 |

SELF SERVE WASH AND DRIVE THRU

| | |
|---|----------------------|
| Self wash assembly equipment base, including hot water | \$10,700 – \$ 29,300 |
| Add per bay (including basic soap, wax, rinses) | 6,400 – 12,400 |
| Degreaser-foam brush cleaner, extra waxes, base cost each | 2,775 – 3,600 |
| add per bay | 940 – 2,070 |
| Roll over robot, self drive thru, equipment base | 51,750 – 81,250 |
| Deluxe, including brushless (touch free) system | 89,750 – 131,000 |
| Add arch applicators from table above | |
| Pay entry, computerized communication system and signage | 6,550 – 13,700 |
| Heat freeze protection | 1,630 – 4,925 |
| Air dry blower | 21,200 – 37,500 |
| Water softener | 3,250 – 9,750 |
| Water reclamation/filtration | 8,150 – 44,700 |
| Vacuum, per exterior station (interior installations, less 25%) | 1,940 – 4,425 |
| Change machine/automated pay station | 3,800 – 8,150 |
| Towel vending machine | 630 – 920 |

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 | 8,000 | .775 |

PREFABRICATED METAL BUILDINGS

SECTION UIP 11

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%. 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' | \$23.00 | ---- | ---- | ---- |
| 36' | 21.90 | ---- | ---- | ---- |
| 48' | 20.45 | \$18.75 | ---- | ---- |
| 60' | 19.35 | 17.60 | \$16.80 | ---- |
| 72' | 18.55 | 16.85 | 16.10 | \$15.45 |
| 84' | 17.85 | 16.25 | 15.40 | 14.95 |
| 96' | 17.20 | 15.70 | 14.95 | 14.35 |
| 108' | 16.70 | 15.30 | 14.40 | 14.00 |
| 120' | 16.25 | 14.90 | 14.05 | 13.55 |
| 160' | 15.20 | 13.85 | 13.05 | 12.65 |
| 200' | ---- | 13.05 | 12.30 | 12.00 |
| 240' | ---- | 12.45 | 11.85 | 11.55 |



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' | \$19.55 | \$18.60 | \$17.85 | \$16.80 | \$16.20 | \$15.70 | |
| 30' | 12' | 16.70 | 16.05 | 15.45 | 14.85 | 14.30 | 13.90 | |
| 40' | 14' | 16.85 | 15.85 | 15.20 | 14.30 | 13.60 | 13.25 | |
| 50' | 14' | 15.05 | 14.40 | 14.15 | 13.60 | 13.30 | 13.05 | |
| 60' | 14' | 13.75 | 13.40 | 13.10 | 12.85 | 12.45 | 12.25 | |
| 80' | 16' | 14.00 | 13.50 | 13.30 | 12.90 | 12.55 | 12.30 | |
| 100' | 16' | 13.75 | 13.25 | 12.90 | 12.25 | 11.90 | 11.65 | |
| 140' | 16' | 12.25 | 11.90 | 11.60 | 11.20 | 11.00 | 10.70 | |
| 160' | 18' | 12.10 | 11.70 | 11.55 | 11.15 | 10.75 | 10.65 | |
| 200' | 18' | 11.55 | 11.20 | 11.00 | 10.70 | 10.50 | 10.25 | |

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 60%. aluminum skin: Add 15%.
 Enameled steel: Add 5%. Slant wall buildings: Deduct 10%.
 Wood pole framed buildings : Deduct 20%.
 Buildings constructed of composite plastics (FRP): Add 75%.

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, SEG 4 or SEG 7 Unit-in-Place Cost sections.

| FOUNDATIONS | Low Cost | Avg. | Good | Excl. |
|--------------------------------|----------|---------|---------|---------|
| Steel columns, | | | | |
| light pre-engineered frame | \$39.50 | \$53.00 | \$70.00 | \$94.00 |
| Wood columns, light pole frame | 30.00 | 43.00 | 62.00 | 87.00 |

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

FRAME – Apply to total floor area.

| | Low Cost | Avg. | Good | Excl. |
|-----------------------------|----------|--------|---------|---------|
| Steel, pre-eng. open web | | | | |
| tapered truss | \$ 2.99 | \$3.26 | \$ 3.59 | \$ 3.87 |
| Post and open web truss | 3.10 | 3.32 | 3.71 | 4.20 |
| Post and beam | 3.15 | 3.49 | 3.87 | 4.32 |
| Tapered plate, | | | | |
| Post/beam end walls | 3.59 | 4.20 | 4.98 | 5.71 |
| Tapered plate | 3.98 | 4.65 | 5.53 | 6.47 |
| Plastic, fiber reinforced | 11.85 | 12.95 | 14.15 | 15.55 |
| Wood, pole frame, untreated | 1.85 | 2.34 | 3.23 | 4.37 |
| Treated wood | 1.91 | 2.39 | 3.34 | 4.48 |

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 | \$1.11 | \$1.49 | \$2.32 | \$3.26 |
| Lighting, fluorescent | 1.33 | 1.94 | 2.60 | 3.65 |

WALL COVER AND SUPPORTS – Apply to total wall area.

| | | | | |
|-------------------------------|------|------|------|------|
| Wall girts, steel | 1.01 | 1.33 | 1.83 | 2.39 |
| Wood | .45 | .64 | .96 | 1.35 |
| Plastic, fiber reinforced | 1.44 | 2.04 | 2.87 | 3.71 |
| Aluminum, light | | | | |
| (.0175" to .024" thick) | 2.38 | 2.66 | 3.10 | 3.32 |
| heavy (.032" to .050" thick) | 3.98 | 4.37 | 5.15 | 5.71 |
| Steel, light (30 to 26 gauge) | 1.83 | 2.22 | 2.49 | 3.15 |
| Heavy (24 to 18 gauge) | 3.38 | 3.98 | 4.65 | 5.53 |
| Plastic (FRP 8 oz. to 16 oz.) | 3.26 | 4.54 | 6.19 | 8.63 |

Add for fenestration, per sq. ft. of opening (wood frame, deduct 25% – 50%).

| | | | | |
|---|---------|---------|---------|---------|
| Doors, sliding | \$11.30 | \$14.80 | \$18.85 | \$25.50 |
| Overhead | 16.95 | 20.70 | 24.85 | 29.50 |
| Pedestrian | 32.75 | 42.75 | 56.00 | 72.00 |
| Windows or louvers | 30.00 | 38.25 | 49.00 | 62.00 |
| Add for canopies, per sq. ft. of canopy area | 14.80 | 18.55 | 23.55 | 30.00 |
| Add for enameled paint | .26 | .37 | .50 | .87 |
| Add for sandwich panel | 4.75 | 6.53 | 10.20 | 14.50 |
| Add for insulation | .63 | .82 | 1.01 | 1.25 |
| Add for exterior sheathing | 1.11 | 1.33 | 1.44 | 1.71 |
| Add for interior sheathing or liner, finished | 1.88 | 2.22 | 2.49 | 3.10 |

ROOF COVER AND SUPPORTS – Apply to roof area.

| | | | | |
|--|--------|--------|--------|--------|
| Roof purlins, steel | \$1.16 | \$1.44 | \$1.99 | \$2.49 |
| Wood | .66 | .90 | 1.31 | 1.61 |
| Plastic, fiber reinforced | 1.88 | 2.38 | 3.21 | 4.15 |
| Aluminum, light | | | | |
| (.0175" to .024" thick) | 2.27 | 2.43 | 2.87 | 3.15 |
| Heavy (.032" to .050" thick) | 3.77 | 4.26 | 4.88 | 5.53 |
| Steel, light (30 to 26 gauge) | 1.49 | 1.99 | 2.38 | 2.94 |
| Heavy (24 to 18 gauge) | 3.26 | 3.77 | 4.37 | 5.26 |
| Plastic (FRP 8 oz. to 16 oz.) | 3.10 | 4.15 | 5.64 | 7.64 |
| Add for enameled paint | .26 | .37 | .50 | .87 |
| Add for sandwich panel | 3.15 | 4.60 | 6.92 | 10.25 |
| Add for insulation | .87 | 1.01 | 1.25 | 1.45 |
| Add for interior metal liner | 1.77 | 1.94 | 2.27 | 2.60 |
| Add for overhang soffit, per sq. ft. of soffit | 4.15 | 4.98 | 5.76 | 6.92 |

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 11

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 | \$64.00 – \$97.00 | \$ 260.00 – \$ 355.00 | \$62.00 –\$105.00 |
| 100 | 53.00 – 85.00 | 560.00 – 745.00 | 51.00 – 86.00 |
| 150 | 49.50– 78.00 | 560.00 – 745.00 | 46.00 – 78.00 |
| 200 | 46.00 – 72.00 | 725.00 – 920.00 | 43.25 – 71.00 |
| 250 | 44.00 – 69.00 | 725.00 – 920.00 | 40.25 – 67.00 |
| 300 | 42.50 – 66.00 | 725.00 – 920.00 | 39.00 – 64.00 |
| 400 | 40.00 – 62.00 | 905.00 – 1,260.00 | 36.25 – 59.00 |
| 600 | 36.50 – 58.00 | 905.00 – 1,260.00 | 32.25 – 52.00 |
| 800 | 34.50 – 53.00 | 905.00 – 1,260.00 | 29.50 – 49.00 |
| 1,000 | 32.50 – 51.00 | 1,130.00 – 1,600.00 | ----- - ----- |

For gable end doors, add \$650 to \$1,490 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%. For insulated glass, add 60%.

Heaters – \$720 to \$1,170; Humidifiers – \$565 to \$1,630;
 Coolers – \$1,140 to \$1,810; Ventilating fans – \$355 to \$810;
 Partitions, glazed, per square foot of partition – \$12.00 to \$16.40.
 Planting benches, per square foot of bench:
 Plastic grid, \$3.50 to \$5.55; wood slat, \$5.50 to \$6.25
 Steel mesh, \$5.55 to \$9.40

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 | \$115.00 – \$310.00 | 300 | \$72.00 – \$200.00 |
| 100 | 95.00 – 255.00 | 400 | 68.00 – 185.00 |
| 150 | 87.00 – 230.00 | 600 | 62.00 – 170.00 |
| 200 | 81.00 – 220.00 | 800 | 58.00 – 150.00 |
| 250 | 78.00 – 205.00 | 1,000 | 53.00 – 145.00 |

For gable end and door adjustments, see Residential Greenhouses. Extra tall bays, add 15%. For laminated wood framing, add 10%. Straight eaves, deduct 7%.

For corner hips and valleys, add \$31.00 to \$52.00 per square foot to corner area.

For decorative lights incorporated into frame members, add \$20.20 to \$29.75 per linear foot.

For built in shades, add \$13.80 to \$28.75 per square foot of covered area. For motorized operation, add \$955 to \$2,170 per operator.

PREFABRICATED BUILDINGS

SECTION UIP 11

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, \$12.15 to \$46.25 each.
- Perimeter wall, \$16.30 to \$51.00 lin. ft.
- Concrete slab, \$5.08 per sq. ft.
- Plumbing, \$560.00 per fixture.
- Steps, \$115.00 per step.
- Landing, \$29.25 per sq. ft.

| AREA (SQ. FT.) | LOW COST | AVERAGE | HIGH COST |
|----------------|----------|---------|-----------|
| 100 | \$49.00 | ---- | ---- |
| 200 | 39.75 | \$55.00 | \$72.00 |
| 300 | 35.75 | 49.75 | 64.00 |
| 400 | 32.75 | 45.50 | 59.00 |
| 500 | 30.50 | 42.75 | 55.00 |
| 600 | 29.00 | 40.75 | 52.00 |
| 800 | 26.75 | 37.50 | 48.50 |
| 1,000 | ---- | 35.25 | 45.25 |
| 1,500 | ---- | 31.00 | 40.25 |
| 2,000 | ---- | 28.75 | 37.00 |

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 | \$81.00 | 300 | \$40.25 |
| 100 | 62.00 | 400 | 36.00 |
| 150 | 52.00 | 600 | 30.50 |
| 200 | 47.00 | 800 | 27.50 |
| 250 | 43.00 | 1,000 | 25.00 |

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 | \$21.95 | \$19.25 | \$15.95 | \$14.40 |
| Average reinforced vinyl fabric | 14.90 | 13.55 | 11.75 | 10.95 |
| Low cost, woven polyethylene | 12.35 | 10.90 | 9.08 | 8.19 |
| TYPE | 20,000 | 30,000 | 50,000 | 70,000 |
| Good vinyl polyester or Tedlar fabric | \$13.35 | \$12.05 | \$10.55 | \$9.57 |
| Average reinforced vinyl fabric | 10.25 | 9.50 | 8.68 | 8.13 |
| Low cost, woven polyethylene | 7.71 | 6.87 | 6.05 | 5.62 |

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 | \$62.00 | 500 | \$37.25 |
| 200 | 49.50 | 600 | 35.00 |
| 300 | 43.75 | 800 | 32.00 |
| 400 | 40.25 | 1,000 | 30.25 |

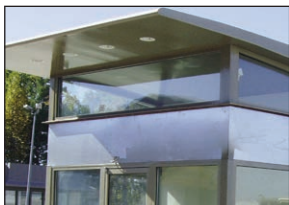
Stair landings cost \$85.00 to \$110.00 per square foot of platform area.

PREFABRICATED BUILDINGS AND BULK OIL FACILITIES

SECTION UIP 11

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.) | \$47,100 – \$58,500 |
| 2 ATM's (approximately 240 sq. ft.) | 58,500 – 66,000 |
| Drive-up/walk-up ATM structures: | |
| 1 ATM (approximately 50 sq. ft.) | 35,000 – 39,300 |
| 2 ATM's (approximately 100 sq. ft.) | 39,300 – 44,600 |
| Air conditioning/heating: | |
| Enclosed equipment areas only (all structures): | |
| 1 ATM | 2,975 – 3,300 |
| 2 ATM's | 4,300 – 4,850 |
| add for lobby area | 1,830 – 2,160 |

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 | \$255.00 – \$310.00 | 80 | \$145.00 – \$175.00 |
| 30 | 200.00 – 250.00 | 90 | 140.00 – 165.00 |
| 40 | 185.00 – 230.00 | 100 | 130.00 – 155.00 |
| 50 | 175.00 – 210.00 | 120 | 120.00 – 145.00 |
| 60 | 165.00 – 195.00 | 200 | 89.00 – 110.00 |
| 70 | 155.00 – 190.00 | 400 | 62.00 – 76.00 |

For bullet resistant models, add per square foot:

| | |
|--------------------------------------|---------------------|
| Level 1 (small-caliber pistol rated) | \$175.00 – \$340.00 |
| Level 4 (high-power rifle rated) | 375.00 – 595.00 |

BULK OIL PLANTS



Small bulk oil plants for truck or tank car operation cost \$67,750 to \$110,000 for a two rack arm assembly and \$108,000 to \$179,000 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 | \$ 185 – \$ 240 |
| Double sided | 225 – 325 |
| Add for roof | 7.53 – 21.35 |
| Add for stairway, each | 915 – 2,160 |
| For explosion resistive const., add | 4,775 – 5,600 |

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

For platforms with adjustable height operation, add 125%, adjustable gangways only, add 75%.

Loading rack equipment, per arm assembly (includes rack arm, nozzle and hose, closing throttle, gate valves, direct read meters and pumps) \$20,700 – \$34,600

Equipment at tanks, per tank assembly (includes miscellaneous valves and line strainers) 720 – 1,750

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 | \$150 – \$285 | \$180 – \$310 |
| Galvanized steel | 190 – 330 | 235 – 400 |

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 | \$105.00 – \$150.00 | 500 | \$56.00 – \$76.00 |
| 150 | 88.00 – 125.00 | 750 | 48.75 – 63.00 |
| 200 | 80.00 – 115.00 | 1,000 | 43.75 – 56.00 |
| 300 | 68.00 – 93.00 | 1,500 | 37.25 – 47.50 |

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EQUIPMENT COSTS

SECTION UIP 12

EXPLANATION

Providing extensive equipment costs is not within the scope of this manual, but the following tables list some common pieces of equipment with replacement cost ranges. Prices are on a cost each basis unless otherwise noted. The Low Cost and Good prices listed are not the lowest or highest costs to be found but are indicative of typical cost ranges. For built-in cabinets and fixtures, see Section UIP 2.

Janitorial items and cash registers, which are found in many business establishments, are listed separately, followed by major groupings of equipment. If certain pieces of equipment are not found under the type of business being appraised, they may be found under another type using similar equipment.

The quoted price ranges are, of necessity, very rough. For more accuracy, purchase prices, subcontractors' costs, installers' costs or manufacturers' prices should be obtained, where possible, by make and model.

CASH REGISTERS

| | LOW COST | AVERAGE | GOOD |
|--------------------------------|----------|---------|----------|
| Electronic, small | \$ 295 | \$ 910 | \$ 2,220 |
| medium | 640 | 1,070 | 1,330 |
| large | 1,330 | 1,620 | 1,820 |
| Terminals, programmable, | | | |
| small | 5,050 | 6,000 | 7,300 |
| large | 6,700 | 8,750 | 11,100 |
| add for data collection | | | |
| (cassette, etc.) | 1,150 | 1,960 | 3,275 |
| add for stand alone LCD screen | 2,250 | 4,050 | 6,950 |
| add for scanner | 1,300 | 1,880 | 2,750 |
| Terminal processor system | 16,300 | 77,500 | 188,000 |
| Check reader | 365 | 625 | 995 |
| Hand scanner | 135 | 485 | 1,750 |
| Magnetic card reader | 160 | 190 | 235 |

SECURITY EQUIPMENT

| | COST RANGE | |
|-------------------------------------|------------|----------|
| Walk through metal detector | \$ 2,900 – | \$ 9,800 |
| handheld wand | 215 – | 435 |
| Conveyorized x-ray scanners | 40,100 – | 59,250 |
| tabletop | 26,300 – | 43,800 |
| fluoroscopic letter/parcel scanners | 4,925 – | 12,200 |

JANITORIAL

| | | |
|--|-----------|---------|
| Buffing machines | \$1,290 – | \$2,140 |
| Cleaning carts | 150 – | 410 |
| Floor scrubbers, electric | 1,070 – | 6,450 |
| High pressure washers, electric | 560 – | 1,600 |
| Ladders, extension, 16' to 28', aluminum | 230 – | 425 |
| fiberglass | 345 – | 640 |
| step, 4' to 12', aluminum | 115 – | 145 |
| fiberglass | 120 – | 170 |
| step, 8' to 12', aluminum | 200 – | 335 |
| fiberglass | 210 – | 460 |
| dual access, 4' to 12', aluminum | 140 – | 260 |
| fiberglass | 215 – | 270 |
| dual access, 8' to 12', aluminum | 355 – | 465 |
| fiberglass | 365 – | 560 |
| Lobby pans | 12 – | 53 |
| Misc., mops, push brooms, squeegees | 15 – | 38 |
| Mop buckets | 42 – | 125 |
| Mop bucket/wringer combo | 69 – | 215 |
| Traffic control posts | 160 – | 345 |
| chain or rope, per linear foot | 9 – | 15 |
| signs, post mounted | 190 – | 300 |
| Vacuum cleaners, upright, 12" wide | 325 – | 565 |
| 16" wide | 425 – | 800 |
| wet/dry | 240 – | 1,140 |
| heavy duty, indoor/outdoor | 305 – | 725 |
| outdoor, gas powered, manually propelled | 900 – | 3,225 |
| self propelled | 1,300 – | 3,975 |
| Water brooms | 31.25 – | 78.00 |
| "Wet Floor" signs | 19.60 – | 45.00 |
| Window washers, telescopic | 280 – | 460 |
| Wringers | 60 – | 100 |

NOTE: For window washing platform lifts, see Section UIP 7.

CHECKROOM EQUIPMENT

| | COST RANGE | |
|--|------------|--------|
| Coat and hat racks, stationary, | | |
| wall mounted, 3' to 5' long | \$ 155 – | \$ 300 |
| portable, single face | 240 – | 465 |
| double face | 415 – | 810 |
| electric, no hat shelf, 144 coat capacity | 3,075 – | 5,450 |
| 180 | 3,475 – | 6,150 |
| 240 | 3,650 – | 6,350 |
| 300 | 3,725 – | 6,650 |
| 360 | 3,925 – | 6,800 |
| 420 | 4,250 – | 7,400 |
| 480 | 4,575 – | 8,100 |
| 540 | 5,000 – | 8,750 |
| 600 | 5,350 – | 9,250 |
| electric, one hat shelf, 144 coat capacity | 4,175 – | 7,250 |
| 180 | 4,350 – | 7,550 |
| 240 | 4,625 – | 8,150 |
| 300 | 5,000 – | 8,750 |
| 360 | 5,350 – | 9,250 |
| 420 | 5,900 – | 10,400 |
| 480 | 6,550 – | 11,400 |
| 540 | 7,000 – | 12,300 |
| 600 | 7,550 – | 13,300 |
| electric, two hat shelves, 144 coat capacity | 4,450 – | 7,750 |
| 180 | 4,800 – | 8,550 |
| 240 | 5,350 – | 9,200 |
| 300 | 5,900 – | 10,400 |
| 360 | 6,450 – | 11,200 |
| 420 | 7,300 – | 12,800 |
| 480 | 7,900 – | 13,900 |
| 540 | 8,600 – | 15,000 |
| 600 | 9,350 – | 16,600 |
| add for additional hand control | 135 – | 430 |
| Coat and hat reels, 120 positions, bolt down | 655 – | 975 |
| self supporting | 765 – | 1,120 |
| Umbrella racks, 24 umbrella capacity | 215 – | 340 |

NOTE: For surveillance equipment, see Section UIP 3.

EQUIPMENT COSTS

SECTION UIP 12

BUSINESS OFFICES

BUSINESS OFFICES (Continued)

Total furniture cost per office or workstation, excluding desk top equipment.

| | STANDARD OFFICE COST RANGE | | OPEN MODULAR COST RANGE | |
|------------------|-------------------------------|----------|----------------------------|----------|
| Clerical | \$ 1,100 – | \$ 2,110 | \$ 1,360 – | \$ 2,825 |
| Technical | 2,525 – | 5,050 | 3,600 – | 6,950 |
| Supervisor | 5,750 – | 11,800 | 9,350 – | 17,200 |
| Management | 13,300 – | 28,200 | 24,200 – | 42,200 |

| | LOW COST | AVERAGE | GOOD |
|---|----------|---------|--------|
| Adding machines, electric | \$ 160 | \$ 350 | \$ 765 |
| Bookcases, steel, per square foot of face | 13.80 | 24.30 | 37.00 |
| simulated wood | 9.20 | 15.00 | 29.75 |
| wood | 20.90 | 36.00 | 65.00 |
| Calculators, desktop, programmable | 130 | 235 | 440 |
| non programmable | 18.40 | 64.00 | 210.00 |
| Chairs, arm | 160 | 325 | 555 |
| arm, swivel | 120 | 395 | 730 |
| arm, executive swivel | 270 | 695 | 1,750 |
| secretarial | 150 | 285 | 560 |
| settee | 420 | 755 | 1,370 |
| side | 120 | 250 | 540 |
| add for floor mats | 86 | 155 | 235 |
| Check writer, manual | 220 | 335 | 485 |
| electric | 485 | 815 | 1,370 |
| Computer workstations, steel | 210 | 435 | 795 |
| oak or walnut | 365 | 685 | 1,290 |
| roll top | 480 | 870 | 1,530 |
| laminated particle board | 260 | 505 | 915 |
| standing height | 235 | 530 | 745 |
| Computer security enclosures, desktop | 240 | 390 | 615 |
| Copiers | 745 | 2,600 | 7,850 |
| Copyboards, built in electronic duplicator | 2,800 | 4,725 | 7,850 |
| Credenza | 375 | 790 | 1,680 |
| Desk, double pedestal | 400 | 915 | 2,100 |
| double pedestal, executive | 610 | 1,720 | 3,725 |
| single pedestal | 320 | 530 | 885 |
| secretarial/open space work surface | 460 | 785 | 1,290 |
| returns | 340 | 625 | 1,160 |
| hutch/bookcase over desk | 110 | 135 | 180 |
| lamp | 38 | 100 | 240 |
| add for miscellaneous accessories | 170 | 295 | 505 |
| Dictating machine | 440 | 895 | 1,650 |
| Facsimile machine | 885 | 1,810 | 3,725 |
| Filing cabinets, base cost, 28" deep | 150 | 230 | 375 |
| add per drawer, letter size | 34 | 59 | 100 |
| add per drawer, legal size | 59 | 85 | 125 |
| add per lateral drawer | 180 | 250 | 350 |
| add for insulated construction, per drawer | 185 | 250 | 350 |
| Letter folding machine, electric | 150 | 285 | 460 |
| Letter opener, electric | 64 | 130 | 250 |

| | LOW COST | AVERAGE | GOOD |
|--|----------|---------|--------|
| Machine stand, general purpose | \$ 160 | \$ 295 | \$ 550 |
| Markerboard, melamine surface, hardwood framed | 44 | 130 | 300 |
| Modular office panels, steel frame, per square foot, fabric covered, 1/4" | | | |
| thick, straight | 5.65 | 7.85 | 9.40 |
| curved | 9.70 | 12.80 | 14.50 |
| 2" thick, straight | 8.95 | 12.30 | 15.00 |
| full plexiglass, straight | 16.80 | 23.50 | 32.50 |
| curved | 17.90 | 25.25 | 30.50 |
| half plexiglass, straight | 11.70 | 17.00 | 20.00 |
| vinyl, straight | 8.85 | 12.00 | 14.70 |
| add for wood frame panels | 2.09 | 2.94 | 4.28 |
| Panel hung cabinets | 150 | 285 | 460 |
| bookshelves | 100 | 180 | 330 |
| worksurface | 115 | 230 | 350 |
| corner | 185 | 365 | 540 |
| peninsula | 155 | 325 | 515 |
| lateral file storage | 160 | 255 | 440 |
| Panel top counters, per linear foot | 13 | 37 | 110 |
| Paper trimmers | 43 | 105 | 185 |
| Paper shredders | 235 | 425 | 745 |
| cross cut | 475 | 845 | 1,500 |
| Personal computer systems, including keyboard | 775 | 2,430 | 6,250 |
| laptops | 575 | 1,500 | 3,600 |
| monitors | 240 | 845 | 2,290 |
| glare screens | 30 | 57 | 115 |
| extension arms | 65 | 115 | 180 |
| modems | 41 | 150 | 470 |
| keyboard drawers | 36 | 79 | 110 |
| wrist rests | 18 | 34 | 59 |
| Printers, inkjet | 120 | 550 | 1,010 |
| laser | 380 | 1,790 | 6,950 |
| Rolodex, electronic | 135 | 230 | 355 |
| Safe, record storage | 1,120 | 2,700 | 6,450 |
| money, 1,000 to 1,800 pounds | 1,660 | 3,650 | 7,700 |
| built in, wall or floor, small | 445 | 830 | 1,500 |
| Scales, postal | 20 | 37 | 62 |
| electronic, rate calculator | 200 | 350 | 600 |
| Table, conference | 580 | 1,720 | 4,575 |
| office | 235 | 475 | 915 |
| Time recorders | 100 | 225 | 545 |
| Timecard racks | 57 | 135 | 295 |
| Typewriter | 105 | 260 | 630 |
| Wall storage units | 480 | 1,280 | 2,900 |

EQUIPMENT COSTS

SECTION UIP 12

LABORATORY

| | COST RANGE | |
|---|------------|----------|
| Balances, electronic | \$ 255 – | \$ 1,290 |
| precision | 1,620 – | 2,825 |
| moisture determination | 2,950 – | 5,350 |
| Carts, chemical | 485 – | 720 |
| glassware | 380 – | 825 |
| pan | 555 – | 975 |
| Centrifuge, benchtop | 465 – | 1,020 |
| Desiccator cabinets | 210 – | 1,060 |
| Freezers | 2,050 – | 11,400 |
| Fume hood units | 3,800 – | 8,550 |
| benchtop | 335 – | 890 |
| Furnaces, benchtop | 1,240 – | 2,725 |
| Incubators | 425 – | 1,590 |
| hybridization, with programmable controller | 3,800 – | 7,650 |
| Lightplates | 300 – | 975 |
| Ovens, convection | 380 – | 1,460 |
| forced air | 655 – | 2,320 |
| Racks, drying | 140 – | 380 |
| tube | 59 – | 190 |
| Refrigerators, enamel exterior | 1,290 – | 9,350 |
| chromatography | 7,050 – | 12,800 |
| add for stainless steel interior and exterior | 300 – | 3,050 |
| add for glass doors | 425 – | 3,725 |
| Scales, bench, digital | 545 – | 1,360 |
| Stirrers | 130 – | 380 |
| multiposition | 1,240 – | 1,780 |
| hot plate | 1,600 – | 2,130 |
| Ultrasonic cleaners | 305 – | 940 |
| with heater | 720 – | 1,630 |
| add for timer | 45 – | 120 |
| Workbenches, per linear foot | 170 – | 635 |

MORTUARIES

| | | |
|--|----------|----------|
| Autopsy table, stainless steel | \$10,600 | \$15,900 |
| Body lifter | 1,680 | 2,140 |
| Embalming machine | 1,240 | 2,900 |
| gravity unit | 635 | 945 |
| Embalming table, porcelain with hydraulic lift | 3,175 | 4,675 |
| stainless steel | 1,960 | 6,250 |
| Layout table | 940 | 1,290 |
| truck | 380 | 560 |
| Injector aspirator unit | 940 | 1,840 |
| Refrigerator, per body tray | 3,675 | 13,200 |
| Casket, burial stand | 975 | 1,180 |
| carriage | 515 | 850 |
| lowering device | 2,170 | 4,400 |
| sales display stand (single) | 215 | 340 |
| sales display stand (double) | 255 | 465 |
| transfer cases | 425 | 940 |
| Mausoleum lift | 16,500 | 20,200 |
| Instrument cabinets | 940 | 2,950 |

MEDICAL OFFICES

| | LOW COST | AVERAGE | GOOD |
|------------------------------------|----------|----------|----------|
| Basal metabolism apparatus | | | |
| with stand | \$ 2,625 | \$ 4,350 | \$ 7,300 |
| Beds, complete, nursing home | 1,240 | 1,760 | 2,460 |
| hospital, manual | 1,650 | 2,050 | 2,600 |
| electric | 2,270 | 3,575 | 5,350 |
| overbed table | 415 | 645 | 995 |
| privacy curtain, complete, | | | |
| per linear foot | 18 | 33 | 45 |
| Cabinets, instrument and supply, | | | |
| per linear foot | 300 | 670 | 1,020 |
| Nurses' station, per linear foot | 405 | 485 | 565 |
| Centrifuge | 425 | 960 | 1,650 |
| Couch, recovery | 465 | 870 | 1,360 |
| Diathermy or ultrasonic machine | 1,820 | 4,450 | 7,350 |
| Electro surgery unit | 2,270 | 4,175 | 7,300 |
| Electro cardiograph | 3,075 | 4,900 | 7,750 |
| Light, examination | 140 | 645 | 1,570 |
| operating | 850 | 2,525 | 5,250 |
| infrared | 240 | 550 | 1,140 |
| ultraviolet | 590 | 1,200 | 1,890 |
| Scale, with measuring rod | 365 | 575 | 810 |
| Sterilizer, instrument, steam | 1,710 | 2,825 | 4,725 |
| Stools, treatment or diagnosis | 185 | 505 | 850 |
| Tables, operating room | 11,100 | 20,400 | 30,700 |
| Tables, treatment or examination, | | | |
| open frame | 465 | 840 | 1,500 |
| with base cabinet | 1,020 | 2,160 | 3,425 |
| with hydraulic base | 4,350 | 8,750 | 13,500 |
| Waste receptacle | 120 | 205 | 325 |
| X-ray and fluoroscope unit, | | | |
| per 100 ma. | 30,400 | 40,100 | 53,000 |
| X-ray viewer, wall type, per panel | 235 | 375 | 520 |

DENTAL OFFICES

| | | | |
|---------------------------------|--------|---------|----------|
| Bleaching instrument | \$ 560 | \$1,250 | \$ 1,890 |
| Chair, electric or hydraulic | 4,125 | 6,100 | 8,950 |
| Compressor | 2,875 | 4,900 | 8,300 |
| Cuspidor | 1,390 | 1,920 | 2,650 |
| Dental unit | 3,375 | 6,500 | 12,400 |
| Instrument and supply cabinets, | | | |
| per linear foot | 260 | 590 | 1,020 |
| add for sink | 260 | 580 | 1,060 |
| Instrument set | 2,600 | 3,925 | 5,700 |
| Light, overhead | 810 | 1,090 | 1,460 |
| fully adjustable | 1,470 | 2,625 | 4,725 |
| Sterilizer, autoclave | 2,020 | 3,175 | 4,875 |
| Stool, dentist's | 415 | 765 | 1,390 |
| assistant's | 300 | 550 | 980 |
| Vacuum system | 3,350 | 5,050 | 7,250 |
| X-ray, machine | 4,400 | 7,550 | 13,000 |
| developing tank | 375 | 565 | 850 |
| film processor | 355 | 550 | 810 |
| automatic | 1,450 | 3,625 | 8,950 |
| Viewer, wall type, per panel | 235 | 305 | 380 |

EQUIPMENT COSTS

SECTION UIP 12

MOTELS

RESIDENTIAL

| | LOW COST | AVERAGE | GOOD |
|---|----------|-----------|-----------|
| Total furniture cost, per room, excluding linen | \$2,430 | \$4,450 | \$8,000 |
| Beds, standard double or twin, complete | 320 | 500 | 790 |
| Beds, oversize, complete | 395 | 645 | 1,060 |
| Chair, upholstered arm or lounge | 210 | 350 | 595 |
| Chair, desk | 115 | 150 | 205 |
| Chest, 4 drawer | 240 | 405 | 655 |
| Coffee maker, wall mounted | 66 | 115 | 155 |
| Double dresser | 375 | 560 | 840 |
| Desk | 255 | 380 | 560 |
| Desk spanner | 230 | 270 | 330 |
| Drapes, per room | 235 | 395 | 635 |
| Hair dryer, wall mounted | 200 | 260 | 365 |
| Lamps | 52 | 115 | 200 |
| Luggage holder | 54 | 85 | 130 |
| Mirror, wall | 72 | 130 | 230 |
| Pictures | 64 | 125 | 230 |
| Tables, game nightstand | 120 / 75 | 215 / 160 | 400 / 330 |
| TV sets | 405 | 720 | 1,220 |
| platforms, wall mounted | 170 | 295 | 490 |
| Wardrobe closet | 410 | 560 | 750 |
| Housekeeping, linen, blankets, etc., per room | 320 | 430 | 600 |
| maid's cart and equipment, ea. | 445 | 645 | 920 |
| vacuum cleaner | 330 | 520 | 840 |
| baggage carts | 160 | 435 | 1,170 |
| room service carts | 320 | 410 | 530 |
| roll away beds | 200 | 240 | 330 |
| portable cribs | 120 | 135 | 150 |
| portable bars | 670 | 1,040 | 1,630 |

| | COST RANGE | |
|--|------------|--------|
| Beds, twin, including frame, box spring and mattress | \$ 560 – | \$ 965 |
| double, queen | 810 – | 1,710 |
| king | 1,020 – | 2,460 |
| bunk | 730 – | 1,930 |
| wall mounted | 560 – | 1,240 |
| rollaway | 215 – | 625 |
| add for headboard | 255 – | 885 |
| Crib | 425 – | 2,230 |
| Bookcase | 1,110 – | 4,400 |
| Cabinet bar, portable | 215 – | 3,125 |
| Chair, dining, wood seat and back | 150 – | 435 |
| upholstered seat and back | 210 – | 790 |
| kitchen | 105 – | 210 |
| highback | 300 – | 965 |
| patio | 60 – | 155 |
| Chest of drawers | 1,250 – | 4,400 |
| Console | 520 – | 3,225 |
| Desk | 300 – | 1,060 |
| Desk chair | 130 – | 440 |
| Dinette | 255 – | 1,020 |
| Display cabinet | 1,290 – | 6,150 |
| Fan, ceiling | 200 – | 790 |
| floor | 98 – | 435 |
| Floor lamp | 410 – | 3,125 |
| Home stereo system | 1,020 – | 6,650 |
| extra speakers, per pair | 240 – | 695 |
| minisystem | 225 – | 810 |
| DVD player (Basic to blu-ray or HD) | 59 – | 945 |
| Loveseat, upholstered, fabric | 1,090 – | 3,975 |
| leather | 1,510 – | 6,700 |
| sleeper | 1,350 – | 4,400 |
| Nightstand | 255 – | 965 |
| Picture, framed | 120 – | 1,140 |
| Recliner | 1,430 – | 4,825 |
| Sconce, single lamp | 465 – | 2,050 |
| three lamps | 775 – | 2,975 |
| Sofa, upholstered, fabric | 1,390 – | 6,650 |
| leather | 2,270 – | 8,500 |
| queen sleeper | 1,880 – | 5,650 |
| Table, coffee, wood | 305 – | 965 |
| bronze, glass top | 390 – | 1,330 |
| dining, wood | 2,090 – | 11,400 |
| stainless steel, glass top | 1,740 – | 7,900 |
| patio, aluminum | 320 – | 965 |
| with umbrella | 460 – | 1,410 |
| round | 1,290 – | 3,950 |
| TV, big screen | 1,790 – | 10,200 |
| TV stand | 295 – | 1,140 |
| DVD/VCR combo player | 105 – | 355 |

LOBBY AND RECEPTION AREA FURNITURE AND EQUIPMENT

| | | | |
|---|--------|--------|---------|
| Lobby counter, per linear foot | \$ 190 | \$ 320 | \$ 520 |
| add for registration back counter, per linear foot | 140 | 320 | 690 |
| Lounge chairs, upholstered (wood, deduct 65%) | 410 | 905 | 2,000 |
| Sofa | 635 | 1,560 | 3,850 |
| Tables, cocktail or lamp | 255 | 635 | 1,550 |
| check writing desk | 1,270 | 2,320 | 4,275 |
| patio with umbrella | 210 | 955 | 2,440 |
| Chaise lounge | 185 | 340 | 595 |
| Coat rack | 59 | 160 | 410 |
| Ice cube machine | 2,050 | 3,450 | 5,850 |
| Key cutting machine | 750 | 870 | 995 |
| Magazine racks | 45 | 89 | 185 |
| Waste receptacles | 52 | 130 | 320 |
| Telephone systems: | | | |
| key system base cost (individual access, intercom) | 2,950 | 5,100 | 8,750 |
| add per phone station | 660 | 980 | 1,450 |
| PBX system base cost (central operator console, code dialing) | 40,700 | 94,750 | 227,000 |
| add per phone station | 235 | 375 | 570 |

EQUIPMENT COSTS

SECTION UIP 12

AUTOMOTIVE REPAIR AND SERVICE

Costs are for passenger car equipment normally found in small and average size repair shops. For hoists, compressors, etc., see UIP 14, Service Station equipment costs.

| | LOW COST | AVERAGE | GOOD |
|---|----------|----------|----------|
| Air conditioning repair service | | | |
| package | \$ 1,160 | \$ 3,075 | \$ 8,000 |
| Aligner, frame, complete | 16,800 | 31,000 | 40,400 |
| laser measuring | 8,900 | 10,000 | 11,200 |
| Aligner, wheel, complete | 8,750 | 14,900 | 25,500 |
| (add 100% for 4 wheel units) | | | |
| Battery charger, slow | 200 | 375 | 695 |
| fast | 685 | 1,010 | 1,500 |
| Brake bleeder | 415 | 445 | 505 |
| drum or disk lathe | 5,800 | 9,650 | 16,000 |
| Diagnostic emissions analyzer | 17,500 | 24,700 | 35,000 |
| Electrical test equipment, base cost | 1,010 | 2,270 | 5,100 |
| add per test unit | 260 | 515 | 1,010 |
| Fume exhausters | 1,440 | 2,420 | 4,125 |
| Grinder | 225 | 500 | 1,070 |
| Hand tool set | 985 | 3,350 | 6,350 |
| Jack, hydraulic, auto | 715 | 1,280 | 2,310 |
| Jack, heavy duty, truck | 1,550 | 2,480 | 3,850 |
| Lube equipment: | | | |
| hi boy, oil container, | | | |
| per cabinet | 410 | 720 | 1,220 |
| overhead reel type, per reel | 890 | 1,280 | 1,820 |
| pump with lube dispenser | | | |
| and valves | 3,650 | 4,725 | 6,150 |
| (supply lines to overhead reel, \$5.50 per linear foot) | | | |
| miscellaneous grease guns | 86 | 175 | 330 |
| bucket pumps | 150 | 335 | 725 |
| Oil filter crusher | 1,310 | 2,750 | 5,650 |
| Overhead air, per reel | 465 | 635 | 850 |
| Scope analyzer | 8,550 | 15,700 | 29,000 |
| Steam cleaner | 2,090 | 4,625 | 7,250 |
| Tire changer, manual | 460 | 765 | 1,280 |
| electric | 1,650 | 4,000 | 10,100 |
| truck | 8,150 | 14,100 | 24,400 |
| Wheel balancer, bubble | 415 | 655 | 1,010 |
| on vehicle | 3,200 | 4,875 | 7,550 |
| electric | 4,075 | 6,700 | 10,900 |
| truck | 7,550 | 9,600 | 12,200 |
| Work benches, per linear foot | 59 | 115 | 205 |

AUTOMOTIVE TIRE RETREADING

(Heavy truck equipment is not included.)

| | LOW COST | AVERAGE | GOOD |
|-------------------------------------|----------|----------|----------|
| Aligner, tread | \$ 800 | \$ 1,090 | \$ 1,410 |
| Bagger | 4,075 | 6,650 | 10,600 |
| Boiler, gas fired | 4,775 | 7,750 | 12,700 |
| Buffer, pedestal type, 5 to 7 H.P. | 2,430 | 3,375 | 4,775 |
| 20 to 30 H.P. | 45,900 | 52,250 | 59,750 |
| Buffer semi automatic | 30,700 | 42,800 | 59,750 |
| Curing rim | 260 | 355 | 465 |
| Hoist, one end (compressed airjack) | 1,130 | 1,790 | 2,800 |
| chain, manual | 260 | 440 | 765 |
| chain, electric | 1,220 | 1,960 | 3,125 |
| Matrix, full circle, standard | 5,600 | 6,400 | 7,250 |
| electric | 6,250 | 7,050 | 7,850 |
| nonheated | 5,400 | 5,850 | 6,500 |
| Mold, segmented, steam | 10,800 | 14,000 | 18,200 |
| electric | 11,000 | 14,400 | 18,700 |
| Pot boiler | 1,330 | 1,960 | 2,975 |
| Tire spreaders, auto | 1,230 | 1,960 | 3,125 |
| Tools, tire wrench set | 575 | 1,090 | 2,040 |
| Trimmer and spinner | 1,280 | 1,960 | 3,100 |
| White sidewall table | 260 | 425 | 685 |

AUTOMOTIVE SPRAY BOOTHS

(Costs include exhaust fans, warning lights and installation.)

| | COST RANGE | |
|---|------------|----------|
| Automobile, (26' L x 14' W x 9' H) | | |
| Solid back baffled exhaust | \$14,500 – | \$23,100 |
| low level exhaust | 18,200 – | 25,100 |
| filtered exhaust | 19,300 – | 26,000 |
| Drive through, low level exhaust | 20,900 – | 28,900 |
| Bench model | 2,625 – | 5,550 |
| Floor model | 3,975 – | 7,600 |
| Automobile and Truck combination, (28' L x 14' W x 12' H) | | |
| Solid back baffled exhaust | 23,100 – | 33,400 |
| low level exhaust | 28,000 – | 39,500 |
| filtered exhaust | 29,800 – | 42,200 |
| Drive through, low level exhaust | 30,900 – | 44,400 |
| Drive through, filtered exhaust | 33,400 – | 47,600 |
| Truck, (34' L x 16' W x 16' H) | | |
| Solid back baffled exhaust | 30,000 – | 45,900 |
| low level exhaust | 35,000 – | 54,250 |
| filtered exhaust | 36,900 – | 58,000 |
| Drive through, low level exhaust | 39,500 – | 61,750 |
| Drive through, filtered exhaust | 42,200 – | 66,000 |

NOTE: For carwash equipment, see Section UIP 11.

EQUIPMENT COSTS

SECTION UIP 12

BARBER AND BEAUTY SHOPS

| | LOW COST | AVERAGE | GOOD |
|---|----------|---------|---------|
| Total equipment cost, per chair . . . | \$4,000 | \$6,100 | \$9,200 |
| Barber pole | 410 | 565 | 725 |
| Midsized | 795 | 915 | 1,070 |
| Two light | 1,090 | 1,250 | 1,410 |
| Chair, barber | 880 | 1,600 | 2,950 |
| Add for electric assist | 640 | 1,160 | 2,120 |
| Chair, beauty | 695 | 1,340 | 2,600 |
| With shampooing tray, adjustable | 800 | 1,650 | 2,950 |
| Chair, children's | 435 | 835 | 1,550 |
| Clippers, electric | 69 | 140 | 230 |
| Display case, per linear foot | 75 | 150 | 235 |
| Dryer | 295 | 445 | 725 |
| Dryer and chair combination | 490 | 790 | 1,290 |
| Facial chair | 735 | 2,430 | 7,750 |
| Facial steamer | 435 | 975 | 2,190 |
| Hand tool set | 170 | 300 | 430 |
| Lather machine | 200 | 270 | 375 |
| Lavatory, shampoo | 435 | 730 | 1,240 |
| Mirror, per square foot | 10 | 15 | 24 |
| Pedicure bench | 295 | 730 | 1,850 |
| Stool, manicure and miscellaneous | 190 | 270 | 405 |
| Supply cabinets, per linear foot . . . | 140 | 175 | 225 |
| Table, manicure | 175 | 575 | 1,890 |
| Vibrator | 130 | 170 | 235 |

LAUNDRY AND CLEANING

The following costs are typical ranges for small commercial outlets. For large institutional or commercial plants the costs may be several times as much.

| | COST RANGE | |
|--|------------|----------|
| Boiler, 10 to 20 H.P. | \$10,200 – | \$15,900 |
| Dry cleaning machine, petroleum | 32,500 – | 69,500 |
| Extractor | 6,100 – | 15,900 |
| Ironer, 48" to 72" | 4,125 – | 11,800 |
| Laundry machine, 44" diameter | 28,700 – | 49,700 |
| Marking machine | 730 – | 1,580 |
| Package-tying machine | 3,675 – | 6,350 |
| Presser, hand operated | 5,150 – | 10,600 |
| Air operated | 6,100 – | 12,900 |
| Puffer | 1,200 – | 2,925 |
| Scale | 635 – | 1,330 |
| Sewing machines | 1,370 – | 2,360 |
| Spotting board | 1,110 – | 4,150 |
| Tumbler, dry cleaning, steam and solvent | 7,200 – | 15,000 |
| Washers, laundry, manual | 5,150 – | 12,900 |
| Automatic | 10,300 – | 52,750 |
| Conveyor system, | | |
| 200 to 1,000 garment capacity | 3,950 – | 10,200 |
| Two level system, add | 1,650 – | 1,930 |
| Dial control, add | 1,710 – | 2,000 |

PHOTO LABS

| | COST RANGE | |
|--|------------|----------|
| Darkroom door, revolving | \$ 2,050 – | \$ 6,450 |
| Digital printer | 430 – | 9,250 |
| Enlarger | 2,250 – | 21,300 |
| Enlarging station | 1,500 – | 3,825 |
| Add for viewer | 425 – | 1,020 |
| Film dryer | 2,950 – | 9,350 |
| Film/print drying cabinet, single door | 2,250 – | 5,500 |
| Double door | 3,300 – | 7,750 |
| Add for pass through cabinets | 1,020 – | 2,480 |
| Film processor | 18,200 – | 76,250 |
| Film scanner | 765 – | 9,250 |
| Print washer, stainless steel, countertop | 1,350 – | 2,975 |
| Free standing | 2,310 – | 5,550 |
| Safe lights | 515 – | 1,450 |
| Silver recovery units, manual | 640 – | 1,110 |
| Automatic | 1,240 – | 4,725 |
| Sink, steel | 2,975 – | 11,100 |
| Fiberglass | 2,050 – | 5,850 |
| Water control system, including filter and thermostatic mixer | 3,075 – | 8,100 |
| Add for chiller | 2,140 – | 4,250 |

Complete one-hour color photo labs cost \$85,750 to \$144,000.

LAUNDROMATS

| | | |
|--|------------|----------|
| Coin operated dry cleaner, 8# capacity | \$14,800 – | \$19,300 |
| 25# capacity | 24,500 – | 40,300 |
| Coin operated washer, 7# capacity | 730 – | 1,290 |
| 20# capacity | 2,775 – | 3,450 |
| Gas dryer | 2,430 – | 5,300 |
| Cart | 120 – | 290 |
| Change maker | 770 – | 3,800 |
| Soap vending machine | 745 – | 1,700 |
| Steamer | 390 – | 1,360 |
| Water heater, boiler, pump, storage | 7,800 – | 15,000 |
| Water softener, 12 to 24 units | 4,875 – | 8,500 |
| 25 to 60 units | 6,850 – | 17,400 |

EQUIPMENT COSTS

SECTION UIP 12

BILLIARD ROOMS

| | COST RANGE | |
|--------------------------------------|------------|--------|
| Balls, billiard, 3 ball set, per set | \$ 64 – | \$ 155 |
| Pocket billiard, 16 ball set | 69 – | 240 |
| Snooker, 22 ball set | 175 – | 390 |
| Billiard tables, pocket or carom | 3,600 – | 21,700 |
| Chairs, 24" high | 135 – | 305 |
| Cigarette urns | 65 – | 115 |
| Cue rack | 64 – | 425 |
| Cues, per dozen | 280 – | 655 |
| Score beads, per set | 27 – | 52 |
| Snack table | 115 – | 255 |
| Time recorders | 425 – | 1,230 |
| Computer type | 1,820 – | 4,425 |
| Vacuum cleaner, small, for tables | 140 – | 305 |

AMUSEMENT ARCADES/CASINOS

| | | |
|---------------------------------|------------|----------|
| Upright video game | \$ 4,125 – | \$ 9,350 |
| Pinball machine | 2,800 – | 7,650 |
| Cockpit game | 14,400 – | 29,800 |
| Basketball throw | 2,310 – | 5,500 |
| Compact disc juke box | 5,850 – | 12,000 |
| Dart machine | 2,140 – | 5,800 |
| Air hockey | 1,710 – | 5,300 |
| Stick hockey | 730 – | 5,050 |
| Stick soccer | 825 – | 1,340 |
| Foosball | 660 – | 2,700 |
| Cranes | 3,225 – | 8,100 |
| Shuffleboard table | 2,270 – | 9,350 |
| Skee ball | 3,350 – | 9,500 |
| Vending machines, food or drink | 2,525 – | 6,750 |
| Blackjack table | 2,050 – | 3,700 |
| Crap table | 7,150 – | 14,400 |
| Roulette table | 5,450 – | 7,350 |
| Roulette wheel | 10,300 – | 22,000 |
| Money wheel | 3,600 – | 10,300 |
| Slot machine | 1,360 – | 4,125 |
| Video poker | 1,160 – | 3,925 |
| Coin counter | 880 – | 4,200 |

NOTE: For miniature golf, batting cages, etc., see Section UIP 14.

HEALTH CLUBS

| | | |
|---------------------------------------|----------|--------|
| Balance beams, fixed | \$ 380 – | \$ 795 |
| Adjustable | 940 – | 1,580 |
| Ceiling rope | 365 – | 515 |
| Chinning bars, wall mounted | 255 – | 460 |
| Climbers | 2,480 – | 6,700 |
| Dumbbell sets | 215 – | 1,110 |
| Ellipticals | 4,675 – | 7,750 |
| Gym divider curtains, per square foot | 8 – | 15 |
| Massage belt vibrators | 425 – | 800 |
| Massage tables | 515 – | 760 |
| Mats, per square foot | 8 – | 15 |
| Multi-stationed gyms | 4,700 – | 15,300 |
| Add for leg press | 850 – | 2,050 |
| Add for chin up station | 255 – | 595 |
| Add for weight stack enclosures | 640 – | 1,820 |
| Add for low row station | 460 – | 760 |
| Parallel bars | 2,875 – | 5,300 |
| Pulley weights, wall mounted | 685 – | 1,290 |

HEALTH CLUBS (Continued)

| | COST RANGE | |
|--|------------|--------|
| Punching bags, 70 lbs. | \$ 69 | \$ 150 |
| Recumbent cycles | 170 | 4,175 |
| With upper body option | 850 | 6,700 |
| Rowers | 1,090 | 5,850 |
| Sidehorses | 2,370 | 2,600 |
| Ski machines | 390 | 4,200 |
| Stairclimbers | 685 | 5,300 |
| Stationary bikes | 255 | 2,975 |
| With incline | 1,450 | 5,500 |
| Steppers | 120 | 765 |
| Treadmills, level, 6 mph | 510 | 1,290 |
| 8 mph | 940 | 2,140 |
| 10 mph | 1,360 | 4,250 |
| With controlled incline and programmed workout | 2,480 | 9,750 |
| Weight benches | 215 | 1,110 |
| Add for weight set | 130 | 340 |

BOWLING CENTERS

Bowling equipment for a new alley is generally sold at a price per lane, including all equipment necessary for operation.

COST RANGE

Costs for a base unit of 32 lanes with 130 sets of pins, 160 balls, 320 pairs of shoes, scoring tables and chairs, bowlers' and spectator seats and all ancillary equipment necessary for operation, including subwayball returns, excluding:

| | | |
|---|------------|----------|
| Automatic pinsetters, per lane | \$24,800 – | \$33,700 |
| Deduct for aboveground ball return | 1,010 – | 1,930 |
| Add for automatic pinsetters | 17,900 – | 32,100 |
| Add for computerized scorekeeper | 7,400 – | 16,900 |
| Add for telescopes (projectors) | 1,450 – | 3,125 |
| Lobby and miscellaneous furnishings such as carpets, drapes, restaurant and bar, per lane | 9,700 – | 15,600 |

Cost of individual items:

| | | |
|---------------------------------------|---------|--------|
| Balls | 52 – | 83 |
| Ball driller, complete | 5,850 – | 13,200 |
| Ball cleaner and polisher | 4,850 – | 10,200 |
| Ball racks, per ball | 31 – | 43 |
| Cashier's island | 3,875 – | 10,200 |
| Chairs | 105 – | 335 |
| Floor polisher, rotary | 1,160 – | 2,140 |
| Foul detector, 2 lane unit | 560 – | 900 |
| Lane conditioner | 7,150 – | 10,900 |
| Lockers, bowlers', per compartment | 75 – | 215 |
| Lunch and snack tables | 150 – | 390 |
| Pins, plastic coated, per set of ten | 140 – | 215 |
| Wood | 115 – | 170 |
| Scoring tables | 425 – | 800 |
| Seats, spectator or bowler, per space | 130 – | 380 |
| Shoes, rental, per pair | 43 – | 73 |
| Shoe racks, for rentals, per 12 pair | 34 – | 72 |
| Shoe sterilizer, ultraviolet | 365 – | 645 |
| Vacuum cleaner, industrial types | 1,020 – | 1,510 |
| Vacuum cleaner, standard types | 300 – | 775 |

EQUIPMENT COSTS

SECTION UIP 12

RESTAURANTS AND SODA FOUNTAINS

RESTAURANTS AND SODA FOUNTAINS (Cont'd)

| | LOW COST | AVERAGE | GOOD |
|---|----------|----------|----------|
| Booth with table, upholstered, straight seats with table, each | \$ 835 | \$ 1,220 | \$ 1,750 |
| ½ circle with table, each | 1,180 | 2,160 | 3,700 |
| Bench seating with table, plastic, each | 595 | 835 | 1,130 |
| wood, each | 530 | 965 | 1,710 |
| Chairs | 69 | 160 | 350 |
| Dining tables | 160 | 345 | 750 |
| Custom designed (logo inlays, graphics, etc.) | 525 | 685 | 925 |
| Dish dollies | 395 | 635 | 1,010 |
| Counter, formica top, per linear foot | 86 | 160 | 305 |
| bar counter, per linear foot | 140 | 260 | 515 |
| Bar sink and bottle setup, per linear foot. | 260 | 405 | 615 |
| Back bar, per linear foot | 115 | 170 | 295 |
| Cafeteria counter, stainless steel, per linear foot | 1,060 | 1,410 | 1,820 |
| Food preparation, per linear foot | 255 | 380 | 565 |
| Sink and drain, stainless steel, per linear foot | 215 | 335 | 525 |
| Soda fountain, complete unit, per linear foot | 1,580 | 1,960 | 2,250 |
| Stool, counter | 155 | 225 | 340 |
| Back bar cooler | 1,500 | 2,310 | 3,425 |
| Barbecue machine, self basting | 2,090 | 3,225 | 5,950 |
| Beer dispenser | 1,710 | 3,075 | 5,650 |
| Beverage cooler, hinged top, per linear foot | 835 | 965 | 1,220 |
| Bottle cooler | 1,470 | 2,370 | 3,950 |
| Brewing system | 107,000 | 289,000 | 395,000 |
| Broiler | 4,400 | 9,750 | 21,200 |
| Can opener, electric | 135 | 255 | 570 |
| Cocktail workstation | 790 | 1,220 | 1,900 |
| Condiment stand | 1,220 | 1,550 | 2,020 |
| Dishwasher, rack type | 10,500 | 18,800 | 31,700 |
| Undercounter | 3,225 | 4,400 | 6,650 |
| Dispenser, coffee | 1,090 | 2,420 | 5,100 |
| Hot chocolate | 635 | 915 | 1,410 |
| Multiple, carbonated | 3,225 | 4,000 | 5,000 |
| Disposal | 1,360 | 3,200 | 7,350 |
| Food display cart | 750 | 1,060 | 1,530 |
| Food warmer | 965 | 1,960 | 3,525 |
| Fryer | 1,160 | 2,525 | 5,250 |
| Fryer filter system | 1,910 | 5,600 | 14,400 |
| Glass washer, scrub | 320 | 395 | 655 |
| Glass and plate chiller | 1,130 | 1,530 | 2,260 |
| Griddle | 1,760 | 2,950 | 5,100 |
| Heat lamp, each | 415 | 530 | 655 |
| Hot food wells | 595 | 660 | 750 |
| Hot shelf, electric | 135 | 215 | 435 |
| Ice cream cabinet | 1,680 | 2,450 | 3,825 |
| Ice machine, 110# to 450# per day | 2,650 | 5,150 | 9,200 |
| Keg beer dispenser | 1,220 | 2,020 | 3,175 |
| Mixer, food | 2,020 | 4,625 | 10,500 |
| Bar | 320 | 570 | 965 |
| Microwave oven | 1,330 | 2,130 | 3,500 |
| Oven | 2,020 | 5,300 | 13,900 |
| Conveyor | 29,800 | 32,600 | 35,800 |
| Wood burning (for gas add 50%) | 12,900 | 23,200 | 35,100 |

| | LOW COST | AVERAGE | GOOD |
|--|----------|---------|---------|
| Range | \$2,050 | \$3,300 | \$5,350 |
| Range hood, complete, per linear foot | 485 | 790 | 1,330 |
| Refrigerator/freezer, Residential type | 1,060 | 1,820 | 3,225 |
| Commercial, two to three doors, 17 to 72 cubic feet | 4,400 | 7,150 | 11,500 |
| Roll warmers, per drawer | 750 | 880 | 980 |
| Salad bar | 4,225 | 6,650 | 10,400 |
| Scales, platform | 1,100 | 1,500 | 2,020 |
| Hanging, dial | 115 | 170 | 330 |
| Bar inventory control | 215 | 320 | 440 |
| Shake/soft ice cream machine | 10,200 | 11,500 | 13,200 |
| Sandwich table, refrigerated | 2,020 | 3,075 | 4,400 |
| Shelving, metal, per linear foot | 45 | 66 | 115 |
| Slicers | 1,650 | 3,000 | 5,300 |
| Smoker, wood and gas | 1,580 | 2,250 | 3,375 |
| Steam table, complete, per lin. ft. | 395 | 565 | 850 |
| Toaster, commercial, 4 to 8 slice | 415 | 615 | 835 |
| conveyor | 965 | 1,500 | 2,210 |
| Waffle baker, two unit | 330 | 505 | 775 |
| Water station, complete | 3,850 | 7,050 | 13,500 |

SNACK BARS

| | LOW COST | AVERAGE | GOOD |
|--|----------|---------|--------|
| Booth, laminated, two persons | \$ 255 | \$ 435 | \$ 570 |
| four persons | 485 | 530 | 835 |
| Beverage dispenser, non carbonated twin | 120 | 330 | 570 |
| 880 | 1,790 | 3,675 | |
| Condiment stand | 790 | 1,060 | 1,500 |
| Pump dispenser | 120 | 305 | 835 |
| Cotton candy machine and merchandiser* | 810 | 1,310 | 2,130 |
| 105 | 255 | 615 | |
| Cup dispenser | 880 | 1,690 | 2,900 |
| Hot food merchandiser | 785 | 1,450 | 2,675 |
| Hot plate | 220 | 320 | 485 |
| Hot dog merchandiser | 435 | 860 | 1,690 |
| Ice cream dipping cabinet, complete, incl. dispensers | 2,575 | 2,950 | 4,125 |
| Menu system, indoor, including boxes and panels | 320 | 565 | 1,270 |
| Illuminated | 570 | 1,130 | 2,230 |
| Add for photo display | 69 | 160 | 240 |
| Outdoor, including menu and intercom, excluding signs | 1,470 | 2,525 | 4,825 |
| Microwave oven | 345 | 555 | 1,080 |
| Nachos cheese warmer | 335 | 580 | 1,040 |
| Pastry donut display merchandiser | 255 | 395 | 570 |
| Pizza oven/merchandiser | 1,060 | 1,500 | 2,575 |
| preparation table, refrigerated | 5,400 | 6,750 | 8,150 |
| Popcorn popper and merchandiser, small, up to 18 oz.* | 800 | 1,410 | 2,450 |
| Large, theater machine | 4,300 | 6,250 | 8,950 |
| Flavoring dispenser | 155 | 255 | 565 |
| Pretzel display merchandiser | 335 | 775 | 1,810 |
| Snow cone machine* | 1,090 | 1,600 | 2,440 |
| Soft serve machine, ice cream/ yogurt (Slush, deduct 20%) | 4,550 | 5,600 | 7,750 |
| Two flavors twist | 7,850 | 11,000 | 13,600 |
| Straw dispenser | 52 | 89 | 170 |
| Trash receptacle, laminated | 255 | 485 | 790 |
| Waffle cone baker | 435 | 655 | 965 |
| *Add for base, cart or wagon | 790 | 1,020 | 1,390 |

EQUIPMENT COSTS

SECTION UIP 12

RETAIL STORES

(Costs per linear foot except as indicated.)

| | COST RANGE | |
|--|------------|--------|
| Cash register stands, each | \$ 315 – | \$ 850 |
| Checkout, cash and wrap counter | 110 – | 230 |
| Cubicle display cases, per square foot of face | 52 – | 89 |
| Gondola, double, island counter, 5' high | 155 – | 240 |
| Wall unit, 5' high | 120 – | 175 |
| Mannequins, each, full | 295 – | 1,460 |
| Platform | 160 – | 445 |
| Mirror alcoves, freestanding, complete, each | 850 – | 1,530 |
| Mirrors, framed, complete, per square foot | 17 – | 31 |
| Rack, dress or suit, wall fixture | 86 – | 150 |
| Single floor unit, each | 230 – | 390 |
| Double floor unit, each | 330 – | 640 |
| Round unit, each | 225 – | 440 |
| Rotation display bins, each unit, | | |
| 17" diameter, 4 trays | 160 – | 240 |
| 6 trays | 225 – | 390 |
| 8 trays | 295 – | 435 |
| 28" diameter, 4 trays | 525 – | 845 |
| 6 trays | 745 – | 1,170 |
| 8 trays | 975 – | 1,680 |
| 34" diameter, 4 trays | 595 – | 935 |
| 6 trays | 845 – | 1,340 |
| 8 trays | 1,070 – | 1,820 |
| Add for plastic inserts, each | 6.90 – | 15.00 |
| Add 20% for heavy duty bins. | | |
| Shelving, wall display, 6' to 7' high | | |
| With back, no drawers | 135 – | 230 |
| With back, some drawers | 170 – | 375 |
| With back, some drawers, glass doors | 240 – | 445 |
| Without back, storage, single shelf | 13 – | 33 |
| Showcase, 20" to 24" deep, glass top or full glass | 175 – | 375 |
| Table, modular display, sliding doors | 110 – | 235 |
| Island display, storage base | 190 – | 405 |

BAKERIES

| | | |
|---|--------|---------|
| Baker's dough scale | \$ 410 | \$1,140 |
| Baker's worktable, stainless steel top, | | |
| per linear foot, 24" wide | 60 | 130 |
| 36" wide | 79 | 150 |
| Add for backsplash, per linear foot | 14 | 45 |
| Countertop, cookie/roll display case | 130 | 490 |
| Display freezer | 1,330 | 3,525 |
| Display cases, glass, per linear foot | 225 | 815 |

BAKERIES (Continued)

| | COST RANGE | |
|--|------------|----------|
| Dessert merchandiser, 34° temperature, upright, with glass doors | \$2,625 – | \$ 3,975 |
| Wall mount, pie display, 40° to 50° | 2,110 – | 2,625 |
| Dough mixer | 3,400 – | 11,400 |
| Mixer stand | 340 – | 1,330 |
| Dough roller | 1,490 – | 4,875 |
| Oven | 3,575 – | 15,400 |
| Shelf carts | 695 – | 2,190 |
| Slicer | 1,330 – | 5,350 |

FOOD AND BEVERAGE MARKETS

(Costs per linear foot except as indicated.)

| | | |
|--|---------|---------|
| Checkout stands, each | \$3,650 | \$5,300 |
| Gondolas, single | 81 | 190 |
| Double | 130 | 300 |
| Dairy/deli cases, single deck | 520 | 720 |
| Multideck (add 100% for rear door loading) | 645 | 1,120 |
| Reach in, glass doors | 960 | 1,330 |
| Service case, enclosed | 1,090 | 1,360 |
| Self contained, chest cabinet | 415 | 725 |
| Upright, glass doors | 720 | 985 |
| Service case, encl. (dry cases, deduct 25%) | 765 | 1,820 |
| Floral cases, upright, glass doors | 595 | 1,070 |
| Frozen food/ice cream cases, single deck | 685 | 1,070 |
| Multideck | 1,680 | 2,240 |
| Reach in, glass doors | 1,530 | 2,290 |
| Self contained, chest cabinet | 520 | 725 |
| Upright, glass doors | 1,130 | 1,580 |
| Ice merchandiser case, each | 1,290 | 2,625 |
| Night lids for open freezer, each | 220 | 300 |
| Produce cases, non refrigerated, single deck | 335 | 510 |
| Multideck | 445 | 625 |
| Island (double sided) | 515 | 765 |
| Refrigerated, single deck | | |
| (self contained, add 20%) | 515 | 800 |
| Multideck | 645 | 850 |
| Island (double sided) | 850 | 1,150 |
| Scales, checkstand/counter, electronic, each | 1,500 | 2,625 |
| produce, mechanical | 645 | 725 |
| Security cases, each | 1,230 | 2,525 |
| Shopping carts, each | 98 | 235 |
| Turnstiles, manual, each | 725 | 1,580 |
| Walk in box, cooler, per square foot | 52 | 120 |
| Freezer | 64 | 155 |

NOTE: For detailed walk-in box and refrigeration costs, see Section UIP 7.

Complete equipment for a typical supermarket, ready to open for business, costs \$30.75 to \$51.00 per square foot of gross market area.

EQUIPMENT COSTS

SECTION UIP 12

CEREMONIAL EQUIPMENT

The following costs are typical cost ranges for standard furnishings and for custom built, highly ornamented, individually designed items. All costs include installation in quantity.

| | STANDARD COST RANGE | | CUSTOM DESIGNED COST RANGE | |
|-----------------------------|---------------------|----------|----------------------------|----------|
| Altar, wood | \$1,880 – | \$ 3,875 | \$ 4,350 – | \$26,700 |
| Marble or granite . . | 3,000 – | 6,550 | 7,400 – | 39,300 |
| Ark, with curtain | 1,450 – | 3,825 | 5,350 – | 31,900 |
| With door | 2,430 – | 6,900 | 9,050 – | 47,400 |
| Baptismal font | 690 – | 2,090 | 2,725 – | 5,300 |
| Fiberglass baptistry, | | | | |
| Walk in type | 4,300 – | 5,800 | 6,800 – | 9,500 |
| Clergy chairs | 200 – | 335 | 465 – | 1,300 |
| Confessionals, | | | | |
| With curtain, single . . . | 4,425 – | 6,700 | 7,950 – | 15,700 |
| Double | 6,400 – | 11,300 | 13,300 – | 27,600 |
| With door, single . . | 6,350 – | 9,350 | 11,200 – | 21,800 |
| Double | 8,150 – | 14,700 | 14,700 – | 34,300 |
| Lecterns | 715 – | 1,560 | 1,900 – | 3,475 |
| Prayer desks | 375 – | 1,100 | 1,380 – | 3,350 |
| Pews, per linear foot | | | | |
| Hardwood | 75 – | 120 | 130 – | 175 |
| Upholstered | 63 – | 87 | 105 – | 155 |
| Seat type | 86 – | 120 | 135 – | 200 |
| Add for kneelers . . | 18 – | 25 | 39 – | 52 |
| Pulpits | 1,150 – | 3,525 | 4,050 – | 13,000 |
| Railings, per linear foot, | | | | |
| Wood | 44 – | 82 | 105 – | 195 |
| Bronze | 130 – | 195 | 190 – | 315 |
| Wrought iron | 44 – | 76 | 110 – | 160 |
| Stands | 81 – | 280 | 315 – | 1,080 |
| Tables | 375 – | 750 | 825 – | 2,230 |
| Wall crosses | 295 – | 1,530 | 2,090 – | 4,725 |

STAGE/THEATER EQUIPMENT

| | COST RANGE | |
|---|------------|----------|
| Cinema projection system, per theater | \$33,400 – | \$39,800 |
| Cinema sound system, | | |
| Per theater (excludes licenses), analog . . . | 10,900 – | 15,500 |
| Digital | 31,100 – | 40,200 |
| Retrofit | 9,350 – | 18,700 |
| Curtains, per square foot | | |
| Fireproof, silica based | 58.00 – | 65.00 |
| Main, velour | 2.95 – | 4.35 |
| Main, sheer | 1.55 – | 2.15 |
| Drops, velour | 7.25 – | 8.40 |
| Wings, velour | 4.35 – | 5.15 |
| Curtain track, per linear foot | | |
| Straight | 29.00 – | 42.50 |
| Curved | 48.25 – | 100.00 |
| Add for power control, each | 2,220 – | 27,800 |
| Poster cases, each poster | 775 – | 1,390 |
| Exterior type | 1,580 – | 2,190 |
| Projection screen, per square foot | 6.60 – | 10.60 |
| add 100% for power lift. | | |

CHIMES AND CARILLONS

Cast bell chimes do not swing as single bells. They usually come in sets of eight to fifteen, tuned to produce a diatonic scale, manually or electrically operated. A cast bell carillon normally consists of at least two octaves arranged in a chromatic scale. The bells are fixed and can be played from a keyboard equipped for either manual or electrical operation. One very large bell on the low end of the range may cost as much as several of the smaller bells, so the total number of bells is not the only cost consideration. Electronic carillons, where the tone is produced by striking rods of solid metal and amplifying it through loudspeakers, are much less expensive than the cast bell type for the same number of tones. Costs include normal installation.

| | COST RANGE | |
|---|------------|----------|
| Bronze bell, 9" to 18" in diameter | \$ 2,270 – | \$ 9,700 |
| 30" | 11,200 – | 24,400 |
| 48" | 25,700 – | 73,250 |
| 54" | 82,000 – | 147,000 |
| Cast bell chimes, set of 12 to 15 bells | 82,500 – | 206,000 |
| Carillon, cast bells, 2 to 4 octaves | 155,000 – | 465,000 |
| Chimes, electronic | 8,500 – | 24,900 |
| Carillon, electronic | 10,800 – | 89,000 |

ORGANS

There are many makes and designs of organs. Each pipe organ is individually designed, so wherever possible, it is best to obtain costs from the manufacturer. Small organs cost more per stop or voice than large ones.

| | | |
|--|------------|----------|
| Organs, pipe, complete with motors, blowers, etc., per stop | \$ 9,750 – | \$16,300 |
| Organs, electric, each | 16,800 – | 82,000 |

THEATER SEATS

(Costs include installation, in full theater quantities.)

| | | |
|--|---------|-------|
| Auditorium type, plywood or fiberglass | \$100 – | \$155 |
| Plywood back, padded seat | 150 – | 215 |
| Neighborhood theater type, upholstered | 185 – | 225 |
| Good quality, upholstered, thick padded seats and backs | 200 – | 255 |
| Good quality, hi-back | 230 – | 255 |
| Deluxe, major music hall or loge quality | 260 – | 405 |

NOTE: For bleachers, see Section UIP 17.

EQUIPMENT COSTS

SECTION UIP 12

EDUCATIONAL EQUIPMENT

LIBRARIES

| | | COST RANGE | | | | COST RANGE | |
|--------------------------------------|--|------------|--------|--|---------|------------|--|
| Bookcases | | \$ 155 – | \$ 425 | Book stacks, wood, square foot of face | \$ 31 – | \$ 67 | |
| Chalk/tack boards, portable | | 260 – | 1,140 | add for double face shelves | 10 – | 41 | |
| Chairs | | 31 – | 72 | steel | 14 – | 28 | |
| chair desk | | 62 – | 155 | add for double face shelves | 7 – | 13 | |
| folding | | 21 – | 64 | add for ladder, per step | 75 – | 130 | |
| stacking, plain | | 31 – | 76 | Book carts, steel | 430 – | 770 | |
| upholstered | | 53 – | 105 | polyethylene | 335 – | 580 | |
| study chair with writing arm | | 62 – | 140 | Book displayers, tabletop, 15 to 18 books | 93 – | 170 | |
| Chair trucks | | 260 – | 580 | double faced, 20 to 35 books | 195 – | 340 | |
| Carrels, individual | | 215 – | 425 | Book returns, free standing, with shelf | 1,450 – | 3,625 | |
| two person | | 320 – | 690 | with cart | 1,880 – | 4,575 | |
| tabletop | | 105 – | 225 | built in | 525 – | 1,120 | |
| Computer projection panels | | 1,650 – | 3,200 | Book stand, tabletop | 105 – | 170 | |
| Computer work centers, single pupil | | 235 – | 430 | Book truck, steel or wood | 220 – | 1,040 | |
| three pupil, half hexagon | | 435 – | 840 | Card catalogs, wood, per tray | 93 – | 145 | |
| Corkboards, aluminum framed | | 41 – | 280 | plastic drawer, wood front | 60 – | 125 | |
| oak framed | | 59 – | 320 | steel | 47 – | 100 | |
| Desk, single pupil | | 52 – | 140 | Charging counters, per linear foot | 350 – | 570 | |
| two pupil | | 105 – | 185 | Compact disc displayer, wood, 400 discs | 1,240 – | 2,140 | |
| teacher's | | 405 – | 690 | Deluxe carrels, individual | 575 – | 1,160 | |
| Electric chalk board eraser/cleaner | | 330 – | 635 | two person | 945 – | 1,700 | |
| Erasable marker boards, wall mounted | | 41 – | 195 | Dictionary stands | 880 – | 1,720 | |
| with stand | | 270 – | 445 | Display cases, aluminum frame, sq. ft. of face | 52 – | 135 | |
| Globes | | 45 – | 130 | wood frame | 115 – | 405 | |
| custom or illuminated | | 330 – | 645 | Laminator, pouch, desktop | 260 – | 850 | |
| Lecterns, steel, floor model | | 120 – | 225 | roll, heavy duty | 2,020 – | 5,000 | |
| with shelf | | 170 – | 305 | Magazine shelving, wood, square foot of face | 41 – | 72 | |
| adjustable height, portable | | 76 – | 135 | steel, square foot of face | 17 – | 33 | |
| tabletop | | 110 – | 170 | Microfiche reader, single lens | 365 – | 800 | |
| Lecture seating, pedestal | | 135 – | 350 | double lens | 490 – | 1,220 | |
| add for folding arm | | 42 – | 59 | Microfilm reader/printer | 3,625 – | 5,800 | |
| Lockers, per opening, single tier | | 135 – | 260 | Newspaper racks | 200 – | 525 | |
| double | | 89 – | 170 | On line catalog center, one-sided | 300 – | 695 | |
| triple | | 64 – | 140 | four sided | 565 – | 1,000 | |
| box type | | 46 – | 86 | Plastic binding system, manual | 380 – | 800 | |
| Locker benches, per linear foot | | 52 – | 70 | electric | 2,020 – | 3,350 | |
| Overhead projectors | | 295 – | 3,800 | Photo ID system | 1,290 – | 2,600 | |
| Overhead projector tables | | 220 – | 505 | Slide viewer, tabletop | 105 – | 430 | |
| Projection screens, tabletop | | 93 – | 175 | Step stool, wood | 64 – | 160 | |
| wall mount | | 69 – | 355 | plastic | 39 – | 115 | |
| tripod | | 135 – | 340 | Videotape or audiocassette display, four way | 340 – | 860 | |
| auditorium, manually operated | | 590 – | 1,080 | multimedia rotor stands | 555 – | 1,700 | |
| electrically operated | | 1,690 – | 2,270 | | | | |
| Tables, activity | | 140 – | 315 | | | | |
| cut out, wheelchair accessible | | 170 – | 320 | | | | |
| drafting art or library display | | 270 – | 825 | | | | |
| folding | | 135 – | 390 | | | | |
| lecture, pedestal, per linear foot | | 45 – | 78 | | | | |
| round | | 130 – | 235 | | | | |
| Table trucks | | 185 – | 530 | | | | |

EQUIPMENT COSTS

SECTION UIP 12

WAREHOUSING

| | COST RANGE | |
|---|-------------|-----------|
| Bar stock storage racks, steel, | | |
| 120" deep, per sq. ft. of face | \$ 29.00 – | \$ 48.00 |
| 210" deep | 44.00 – | 71.00 |
| Bin shelving, steel, 12" deep, per sq. ft. of face, bins not incl. | 11.40 – | 28.00 |
| 18" deep | 14.50 – | 34.25 |
| 24" deep | 19.30 – | 44.50 |
| Bulk storage racks, steel, without decking, per sq. ft. of face | | |
| 24" deep | 3.40 – | 4.50 |
| 36" deep | 3.85 – | 5.70 |
| 48" deep | 4.20 – | 6.35 |
| add for wire decking, | | |
| per square foot of face | 3.40 – | 5.50 |
| add for particleboard decking, | | |
| per square foot of face | 1.20 – | 2.55 |
| Cantilever racks, single sided, each upright, with four arms | 510.00 – | 1,580.00 |
| double sided, each upright, with eight arms | 645.00 – | 2,010.00 |
| add for each additional arm | 29.50 – | 82.00 |
| Drum dollies | 58.00 – | 175.00 |
| Drum grips, hydraulic | 1,740.00 – | 6,150.00 |
| Drum lifts, manual | 2,020.00 – | 3,350.00 |
| Drum pallets | 75.00 – | 155.00 |
| Drum storage racks, per drum | 44.00 – | 88.00 |
| Drum trucks | 210.00 – | 610.00 |
| Pallets, presswood | 6.65 – | 14.10 |
| high density polyethylene | 44.50 – | 79.00 |
| plastic, double sided | 91.00 – | 195.00 |
| Pallet racks, 14 gauge steel frame, 36" deep, per square foot of face | 3.75 – | 6.75 |
| 42" deep | 4.45 – | 7.40 |
| 48" deep | 5.20 – | 8.25 |
| Pallet turners | 545.00 – | 1,390.00 |
| Plastic shelving, open, 18" deep, per square foot of face | 5.90 – | 8.95 |
| 24" deep | 10.70 – | 16.70 |
| Scissor lifts, portable, foot pedal, hydraulic pump | 1,060.00 – | 1,700.00 |
| battery operated | 1,550.00 – | 2,750.00 |
| Steel shelving, open, 12" deep, per square foot of face | 5.45 – | 9.00 |
| 18" deep | 7.35 – | 11.50 |
| 24" deep | 9.00 – | 13.50 |
| 30" deep | 10.20 – | 14.80 |
| closed, 12" deep, per square foot of face | 7.20 – | 12.30 |
| 18" deep | 10.10 – | 15.20 |
| 24" deep | 12.50 – | 17.50 |
| 30" deep | 14.50 – | 19.00 |
| add for framed hinged door, | | |
| per square foot of face | 9.35 – | 12.80 |
| add for shelf drawers, plastic, each | 3.10 – | 10.60 |
| Trucks, platform, deck | 185.00 – | 1,290.00 |
| hand | 38.00 – | 570.00 |
| bar and tube | 645.00 – | 1,110.00 |
| fork lifts (2,000 lbs. to 8,000 lbs.) | 17,400.00 – | 53,250.00 |
| shelf | 185.00 – | 1,180.00 |
| security, wire mesh | 900.00 – | 1,780.00 |
| pallet, hydraulic | 650.00 – | 1,700.00 |
| tilt, manual | 325.00 – | 610.00 |

WAREHOUSING (Continued)

| | COST RANGE | |
|---|------------|---------|
| Wire shelving, chrome-plated, 18" deep, per square foot of face | \$10.40 – | \$15.50 |
| 24" deep | 12.80 – | 17.90 |
| epoxy coated, 18" deep, per sq. ft. of face | 14.50 – | 20.20 |
| 24" deep | 17.40 – | 24.30 |
| add for door, back and side, per sq. ft. of face | 22.70 – | 31.75 |

HAZARDOUS MATERIAL STORAGE

| | | |
|---|--------------|------------|
| Drum storage system, including painted steel stacking shelves and pallets, 2,000 lbs. pneumatic hoist, and drum lift, | | |
| 24 to 72 drum capacity, cost per drum | \$1,130.00 – | \$2,410.00 |
| 78 to 156 drum capacity | 745.00 – | 1,090.00 |
| Outdoor storage cabinets, incl. vent and sump, cost per drum | 1,080.00 – | 1,970.00 |
| Overpack polyethylene drums, for storage or secondary containment, 85-gallon capacity | 150.00 – | 280.00 |
| Spill control pallets, steel, 4 to 9 drums | 1,020.00 – | 3,450.00 |
| polyethylene | 445.00 – | 1,430.00 |
| Stackable drum cabinets, with sump, open, cost per drum | 335.00 – | 935.00 |
| closed | 790.00 – | 1,670.00 |
| Storage cabinets meeting OSHA 1910.106 and NFPA 30 codes | | |
| 18-gauge stl., double wall const., manual close hinged doors | 1,110.00 – | 1,960.00 |
| bi-fold self closing doors | 1,190.00 – | 2,230.00 |
| Steel containment platform with drain valve, 52" x 52" | 670.00 – | 1,220.00 |
| Waste collection system/secondary containment, single drum | 460.00 – | 745.00 |
| double drum | 885.00 – | 1,250.00 |

NOTE: For truck spill containment systems, see Section UIP 14.

SHIPPING DOCK

| | | |
|---|----------|----------|
| Dock, boards | \$ 555 – | \$ 2,650 |
| plates | 255 – | 1,200 |
| ramps, walk | 515 – | 1,240 |
| yard | 11,300 – | 22,500 |
| Dock bumpers, horizontal, per linear foot | 32.50 – | 78.00 |
| vertical | 52.00 – | 120.00 |
| Dock levelers, mechanical | 3,450 – | 8,450 |
| hydraulic | 6,100 – | 11,600 |
| edge of dock | 800 – | 2,550 |
| Dock lift, hydraulic, ram, single post | 9,200 – | 19,300 |
| double post | 21,400 – | 46,200 |
| scissors | 8,750 – | 20,900 |
| Dock seals, 10" projection | 625 – | 955 |
| add for each 1" of additional depth | 18.40 – | 39.25 |
| add for armour plates | 185 – | 445 |
| Dock shelters | 1,090 – | 3,275 |
| Truck levelers | 19,600 – | 29,100 |
| Trailer stabilizer jack, mechanical | 235 – | 720 |
| hydraulic | 1,130 – | 1,470 |
| Wheel chocks, per pair | 52.00 – | 510.00 |
| Wheel risers, per pair | 1,130 – | 3,950 |

NOTE: For strip doors, see Section UIP 5; for air-curtain doors, see Section UIP 3.

SUBDIVISION DEVELOPMENT COSTS

SECTION UIP 13

RESIDENTIAL STREET IMPROVEMENTS

Costs for residential street improvements vary greatly due to local code requirements for different materials, street types, layouts, and utilities. The following costs are averages including ordinary charges for engineering, plans and inspection. Costs include contractors' overhead and profit but not developers', which is realized when each lot or house is sold. They do not include extensive environmental impact reports, special charges (impact

or entitlement) or assessments sometimes levied against the subdivider such as annexation charges, or costs of new or existing trunk sewers. They assume that the utilities are at or near the subdivision boundary with no special connection problems or costs. Single-lot unit costs, industrial access streets or individual cul-de-sac developments can run 30% to 70% higher. Do not apply these factors to large parking lot paving.

| STREET IMPROVEMENTS | COST RANGE | AVG. UNIT COST | PER LIN. FT. TYPICAL 40' STREET |
|--|-----------------|----------------|---------------------------------|
| *Grading and surplus disposal, sq. ft. | \$.22 – \$.57 | \$.30 | \$18.00 |
| *4" rock base, sq. ft. | .66 – .84 | .72 | 28.80 |
| add or deduct per inch of variation | .11 – .18 | .13 | 5.20 |
| 6" cement treated base, sq. ft. | .85 – 1.30 | .98 | 39.20 |
| add or deduct per inch of variation | .13 – .18 | .14 | 5.60 |
| *Paving, 4" asphaltic concrete, sq. ft. | 2.00 – 2.41 | 2.13 | 85.20 |
| add or deduct per inch of variation | .39 – .50 | .42 | 16.80 |
| Paving, 6" concrete, sq. ft. | 3.19 – 5.29 | 3.78 | 151.20 |
| add or deduct per inch of variation | .40 – .71 | .48 | 19.20 |
| Concrete curb 6", no gutter, lin. ft. | 8.43 – 15.35 | 10.29 | 20.58 |
| *Concrete curb 6", 1' gutter | 12.45 – 19.40 | 14.43 | 28.86 |
| Concrete curb 6", 2' gutter | 14.30 – 22.05 | 16.52 | 33.04 |
| Concrete curb 8", add to 6" costs | 1.36 – 1.52 | 1.41 | 2.82 |
| Asphalt curb 6" no gutter, lin. Ft. | 3.75 – 4.31 | 3.93 | 7.86 |
| berm 4" (Speed bumps, add 100%) | 3.69 – 4.23 | 3.86 | 7.72 |
| Granite curb 5", lin. ft. | 26.00 – 38.00 | 29.51 | 59.02 |
| Concrete curb, rolled, lin. ft. | 7.45 – 12.15 | 8.77 | 17.54 |
| *Concrete cross gutter, | | | |
| at intersection, sq. ft. | 6.34 – 8.65 | 7.03 | 3.52 |
| *Concrete sidewalk, 4" thick, sq. ft. | 3.74 – 5.90 | 4.35 | 34.80 |
| add or deduct per inch of variation | .40 – .63 | .47 | 3.76 |
| *Concrete aprons, 6" thick, sq. ft. | 4.27 – 6.72 | 4.97 | 11.43 |
| add or deduct per inch of variation | .43 – .64 | .49 | 1.13 |
| Sewer main, 9' average depth, lin. ft. | | | |
| add or deduct per foot of depth | .60 – 2.18 | .93 | .93 |
| *8" vitrified clay | 33.25 – 40.25 | 35.44 | 35.44 |
| 8" asbestos cement | 21.50 – 29.50 | 23.89 | 23.89 |
| 8" plastic | 17.30 – 25.25 | 19.62 | 19.62 |
| add or deduct per inch of diameter | 2.74 – 7.33 | 3.80 | 3.80 |
| Sewer laterals, 5' average depth, lin. ft. | | | |
| *4" vitrified clay | 16.25 – 19.75 | 17.34 | 17.34 |
| 6" vitrified clay | 23.15 – 28.25 | 24.74 | 24.74 |
| *Sewer clean outs, 60' o.c., each | 635 – 1,090 | 760.00 | 25.33 |
| *Sewer manholes, 400' o.c., each | 2,400 – 3,975 | 2,850.00 | 7.13 |
| Storm drainage, lin. ft. | | | |
| 18" reinforced concrete | 57.00 – 73.00 | 61.90 | 61.90 |
| 18" corrugated metal | 42.50 – 60.00 | 47.68 | 47.68 |
| add or deduct per inch of diameter | 1.75 – 5.01 | 2.48 | 2.48 |
| storm manholes, 400' o.c., each | 2,400 – 3,325 | 2,675.00 | 6.69 |

*The cost of complete double-loaded street improvements with the components indicated above totals \$435.00 to \$530.00 per linear foot of street in ordinary level subdivisions, or from \$275.00 to \$370.00 per front foot of lot, including side street allowance. Costs may run twice as much for extreme hillside conditions. A typical fully improved industrial access street will cost \$540.00 to \$780.00 per linear foot of street.

SUBDIVISION DEVELOPMENT COSTS

SECTION UIP 13

LIGHTING AND PUBLIC UTILITIES

Water, gas and electric costs vary considerably with local requirements and codes. Often all or a portion of the initial cost, maintenance and replacement is included in an assessment or increased utility rate charged to the consumer. Sometimes an additional charge is made in remote or hilly areas for special service or additional equipment. These requirements should be checked locally. The average costs below are approximate

maximum costs for a typical subdivision, all or part of which may be borne by the community or secured against the property. Some of these costs may be refundable to the developer. Specific pipe costs can be found in Section UIP 9. For general site clearing and grading, see Section UIP 1. For septic tanks, see Section UIP 3.

| PUBLIC UTILITIES | COST RANGE | AVG. UNIT COST | PER LIN. FT. TYPICAL 40' STREET |
|---|-------------------|-------------------|---------------------------------------|
| *Water main, 6" ductile iron, lin. ft. | \$35.00 – \$40.25 | \$ 36.67 | \$36.67 |
| 6" asbestos cement | 38.50 – 46.25 | 40.93 | 40.93 |
| 6" steel | 39.25 – 47.00 | 41.68 | 41.68 |
| 6" plastic | 23.80 – 30.25 | 25.78 | 25.78 |
| add or deduct per inch of diameter | 2.50 – 7.67 | 3.63 | 3.63 |
| *Water lateral, 1", lin. ft. | 14.20 – 17.85 | 15.33 | 15.33 |
| *Water meters, 60' o.c., each | 230 – 520 | 300.00 | 10.00 |
| *Fire hydrants, 300' o.c., each | 2,750 – 4,250 | 3,175.00 | 10.58 |
| *Gas main, 2" steel, lin. ft. | 13.70 – 15.45 | 14.26 | 14.26 |
| 3" steel | 17.55 – 19.95 | 18.32 | 18.32 |
| 4" plastic | 17.35 – 21.05 | 18.50 | 18.50 |
| *Gas lateral, 3/4", lin. ft. | 8.93 – 12.80 | 10.07 | 10.07 |
| Electricity, overhead, | | | |
| on poles, lin. ft. | 16.10 – 28.75 | 19.53 | 19.53 |
| Electrical lateral, lin. ft. | 4.67 – 6.40 | 5.19 | 5.19 |
| *Electricity, underground, | | | |
| in conduit, lin. ft. | 19.75 – 32.25 | 23.26 | 23.26 |
| *Electrical lateral, lin. ft. | 12.15 – 20.95 | 14.57 | 14.57 |
| *Telephone lateral, underground | 8.76 – 13.90 | 10.22 | 10.22 |
| Trench only, lin. ft. | 5.19 – 10.65 | 6.60 | 6.60 |
| Conduit only, lin. ft. | 4.67 – 9.31 | 5.88 | 5.88 |
| *Street light, underground | | | |
| wiring, 200' o.c., each | 1,920 – 6,650 | 2,925.00 | 14.63 |
| Street lights, overhead | | | |
| wiring, 200' o.c., each | 1,310 – 3,325 | 1,790.00 | 8.95 |

*The cost of complete double-loaded street improvements with the components indicated above totals \$435.00 to \$530.00 per linear foot of street in ordinary level subdivisions, or from \$275.00 to \$370.00 per front foot of lot, including side street allowance. Costs may run twice as much for extreme hillside conditions. A typical fully improved industrial access street will cost \$540.00 to \$780.00 per linear foot of street.

| | |
|--|---|
| Catch basins | \$1,510 to \$1,870 plus \$230 to \$445 per foot of depth. |
| Concrete headwalls | \$680 plus \$76 to \$125 per inch of pipe diameter. |
| Gunite, 2" – 3", surfacing for open drains | \$ 4.90 to \$ 7.88 per sq. ft. |
| Soil cement, roads | \$.87 to \$ 1.10 per cu. ft. |
| embankments | \$ 1.28 to \$ 2.22 per cu. ft. |
| slopes | \$ 3.67 to \$ 6.62 per cu. ft. |
| Soil dikes | \$.46 to \$.75 per sq. ft. |
| Slope protection, netting, mats or fabric | \$.09 to \$ 1.12 per sq. ft. |
| Street signs, with post | \$125.00 to \$420.00 each |
| Survey monuments | \$200.00 to \$530.00 each |

YARD IMPROVEMENTS

SECTION UIP 13

PAVING\DECKING

Typical costs per square foot, except as otherwise specified. For paved areas between 500 and 1,000 square feet, deduct 10%; 1,000 to 3,000 square feet, deduct 20%. Over 3,000 square feet, use Subdivision costs. Small separate pours of 100 square feet or less may run 25% higher. Hand mixed and spread could cost 75% more.

| | COST RANGE |
|---|-------------------|
| 2" asphalt | \$ 1.98 – \$ 2.92 |
| add per additional inch | .47 – .58 |
| 2" aggregate base | .64 – 1.11 |
| add per additional inch | .16 – .22 |
| 4" concrete, unreinforced | 4.44 – 6.62 |
| add or deduct per inch of variation | .40 – .58 |
| add for mesh reinforcing | .40 – 1.05 |
| Bar reinforcing | .47 – 2.33 |
| Exposed aggregate | .76 – 2.92 |
| Brick ribbons | 1.00 – 3.28 |
| Detectable warning surface (ADA), | |
| Stamped | 2.33 – 5.13 |
| Decorative pattern finish, stamped | 5.26 – 10.35 |
| Surface formed | 4.26 – 7.88 |
| Thin set synthetic overlay | 6.45 – 14.30 |
| Color or grits | .64 – 1.40 |
| Epoxy with stone or shell | 4.62 – 6.56 |
| Salt finish (cool deck) | .40 – .69 |
| Deck channel drain and grate, per lin. ft. | 14.30 – 56.00 |
| Catch basins, small, up to 24", each | 260.00 – 520.00 |
| 4" sand base | 1.00 – 1.40 |
| 4" gravel base | 1.11 – 1.52 |
| add or deduct per inch of variation | .21 – .27 |
| add for 1" stone dust base | .22 – .36 |
| Open grid blocks for grass on sand base | 6.45 – 8.82 |
| Asphalt block pavers on concrete base* | 8.49 – 14.00 |
| Brick on concrete base, grouted, flat* | 11.15 – 18.10 |
| on edge | 15.85 – 27.00 |
| Concrete pavers on concrete base* | 9.59 – 15.85 |
| Flagstone on concrete base, grouted* | 12.55 – 22.60 |
| Tile, quarry on concrete base* | 11.15 – 16.25 |
| *For sand bed in place of concrete, deduct | -2.80 – -5.13 |
| Snow melting, including controls, electric | 12.25 – 14.80 |
| hydronic, large areas (excluding heat source) | 6.45 – 17.30 |
| Wood, on grade (posts, beams and joists not included) | |
| 2" x 4" flat | 5.90 – 9.59 |
| 2" x 4" on edge | 8.98 – 14.30 |
| Steps on ground, per lin. ft. of tread, | |
| Brick on concrete | 44.50 – 91.00 |
| Concrete | 34.00 – 57.00 |
| Approach apron, concrete | 5.13 – 8.49 |
| Concrete curb, 4" 6", per lin. foot | 11.75 – 18.30 |
| Concrete sidewalk | 4.73 – 7.17 |
| Handicap ramps, sidewalks (retrofit, add 400%) | 6.89 – 10.80 |
| Buildings, concrete (remodel, add 200%) | 20.15 – 41.00 |
| add for railing, per lin. ft. | 38.00 – 54.00 |
| Wood | 26.50 – 38.00 |
| add for railing, per lin. ft. | 15.20 – 32.25 |

For portable ramps, see Section UIP 7.

For synthetic surfaces, pathways, see Section UIP 14. Special stone paving, see Section UIP 6.

PATIO ROOF

(Typical costs per square foot of covered area, including supports.)

| TYPE | COST RANGE |
|--|--------------------|
| Awning, fabric | \$11.45 – \$ 26.00 |
| Aluminum or steel, baked enamel | 7.77 – 14.30 |
| Fiberglass or screen only | 5.57 – 10.35 |
| Wood, including built up, composition | 9.21 – 22.15 |
| Open lattice, metal, vinyl or wood | 6.29 – 19.20 |
| Architectural columns, open lattice or trellis | 26.00 – 88.00 |
| Picnic shelters | 17.20 – 43.50 |
| Add for insulated metal panels | 3.73 – 5.13 |
| Add for lighting fixtures, each | 85.00 – 235.00 |

PATIO ENCLOSURES

Typical cost ranges per linear foot of wall, 84" high, including one exterior door. Use high end of range for insulated panels or knee walls. Add for roof above.

| | |
|---------------------------|---------------------|
| Glassine windows | \$ 80.00 – \$140.00 |
| Acrylic windows | 135.00 – 165.00 |
| Screened only, fiberglass | 27.00 – 44.00 |
| Steel or aluminum | 43.50 – 57.00 |
| Bronze | 56.00 – 84.00 |
| Add for extra door, each | 105.00 – 205.00 |

GAZEBOS: Typical cost each for 8' to 20' wood units including minimal foundation but excluding floors.

| | |
|----------|---------------------|
| Standard | \$ 3,425 – \$18,000 |
| Deluxe | 16,000 – 43,500 |

For Solar rooms and greenhouses, see Section UIP 14. Pool enclosures, see Section UIP 14.

TEMPLES: Typical cost each, 8' to 12' high (to bottom of dome) cast stone units with top ring up to 12' in diameter. Cost does not include floors or

| | |
|---|---------------------|
| other ornamentation. | \$17,700 – \$47,800 |
| Add for fiberglass dome | 5,200 – 9,250 |
| Add for masonry paver floor with no steps | 3,600 – 7,150 |
| Add for floor with steps | 4,025 – 9,250 |

PAVILIONS: Typical cost each for

| | |
|------------------|---------------------|
| cast stone units | \$26,700 – \$64,250 |
|------------------|---------------------|

For individual stone columns, see Section UIP 6. For finials, urns, statuary, see Page 9.

YARD IMPROVEMENTS

SECTION UIP 13

RAISED PATIO DECKS

Typical cost ranges per square foot of deck area, including supports. Custom installations with complex shapes, built in planters and seats can run 50% to 100% more.

| TYPE | 25 Sq. Ft. | 50 Sq. Ft. | 100 Sq. Ft. | Over 300 Sq. Ft. |
|--------------------------------|-------------------|-------------------|-------------------|-------------------|
| Decks: | | | | |
| Softwood, fir, pine, etc. | \$25.50 – \$28.25 | \$18.90 – \$21.05 | \$13.70 – \$15.45 | \$ 8.55 – \$ 9.59 |
| Cedar, redwood or metal | 34.50 – 38.50 | 26.25 – 29.50 | 20.30 – 22.90 | 13.35 – 15.20 |
| Railings: | | | | |
| Softwood, fir, pine, etc. | 6.12 – 6.62 | 4.09 – 4.50 | 2.57 – 3.04 | 1.35 – 1.80 |
| Cedar, redwood or metal | 8.55 – 9.43 | 5.84 – 6.45 | 4.09 – 4.44 | 2.16 – 2.46 |
| Steps: | | | | |
| Softwood, fir, pine, etc. | 7.88 – 8.55 | 3.73 – 4.44 | 2.05 – 2.16 | .62 – .81 |
| Cedar, redwood or metal | 11.65 – 12.90 | 5.74 – 6.40 | 2.98 – 3.15 | .92 – 1.06 |

For each foot of height above 3 feet, increase costs by 5%.
For treated softwoods increase cost by 25%.

For wood polymer composite, add 30% to softwood costs.
For vinyl and tropical hardwoods, add 5% to 15% to cedar/redwood costs.

BENCH AND PICNIC UNITS

| | COST RANGE | |
|--|-------------------|--|
| Park bench, 6' | \$ 365 – \$ 1,630 | |
| Deluxe | 1,430 – 3,400 | |
| precast stone | 845 – 1,670 | |
| Ornate | 5,000 – 11,800 | |
| Picnic table, 6' portable | 285 – 665 | |
| Stationary | 645 – 1,780 | |
| Wheelchair accessible | 960 – 2,130 | |
| Precast stone | 1,670 – 4,225 | |
| For 8' units, add | 82 – 200 | |
| Metal cooking grills | 190 – 645 | |
| Campfire rings | 50 – 255 | |
| Trash receptacle with cover | 250 – 880 | |
| Drinking fountains, outdoor, steel | 1,930 – 5,900 | |
| Precast concrete | 880 – 1,720 | |
| Add for freezeproof valve | 685 – 1,120 | |
| Foot and body shower tower | 1,080 – 5,200 | |
| Pet fountain | 1,000 – 3,725 | |

For outdoor furniture, see Section UIP 12, Page 4.

PLAYGROUND EQUIPMENT

(Cost each except as indicated.)

| | |
|---|-----------------|
| Balance beam | \$ 165 – \$ 555 |
| Baseball backstop, with hood | 3,400 – 8,800 |
| Arch | 5,200 – 20,700 |
| Basketball backstop, with pole | 1,120 – 3,325 |
| Bicycle rack, per lin. ft. | 47 – 110 |
| Bucketball/funnelball | 815 – 1,080 |
| Carousel, merry go round(10 ft and up) | 1,930 – 6,650 |
| Chin up bar | 290 – 565 |
| Climber, arc | 445 – 730 |
| Circle | 755 – 1,570 |
| Dome | 1,720 – 3,325 |
| Tree | 515 – 805 |
| Climbing wall | 995 – 1,980 |
| E-Z digger | 515 – 895 |
| Football goal posts, per pair | 2,650 – 6,650 |
| Combination football/soccer goal, per pair | 3,400 – 6,400 |
| Horizontal ladder, monkey bars | 670 – 1,620 |
| Parallel bars | 205 – 880 |
| Sand box | 540 – 1,400 |
| Seesaw, per unit | 665 – 1,100 |
| Platform | 1,330 – 2,750 |
| Sit-up station | 685 – 805 |
| Slides, free standing, stainless steel, per unit .. | 1,550 – 2,975 |
| Plastic | 2,130 – 3,875 |
| Spiral | 3,225 – 6,400 |
| Oval tube | 3,975 – 6,850 |
| Soccer goals, per pair | 1,780 – 4,950 |
| Nets, per pair | 190 – 445 |
| Spring rider | 515 – 880 |
| Spring platform | 645 – 1,200 |
| Swing, tire | 1,280 – 3,875 |
| Swing, wheel chair platform | 1,100 – 2,950 |
| Swings, per unit | 365 – 645 |
| Swinging bench | 685 – 1,520 |
| Tennis posts, per pair | 440 – 845 |
| Nets | 180 – 500 |
| Tetherball post | 205 – 485 |
| Vault bar | 315 – 445 |
| Volleyball posts, per pair | 445 – 815 |
| Post ground socket | 200 – 255 |
| Whirls, 6' diameter | 1,160 – 1,930 |
| 8' diameter | 1,630 – 2,650 |
| Junior | 600 – 995 |

FITNESS PARKS

| | COST RANGE |
|--|--------------------|
| Fitness cluster, single unit | \$4,625 – \$16,200 |
| Fitness obstacle course, per station | 515 – 755 |

BARBECUES

(Typical costs of brick or block barbecues, complete.)

| | |
|--|-----------------|
| Simple, minimum steel work | \$ 515 – \$ 970 |
| Average, electric spit, good grill | 925 – 1,780 |
| Good, heavy-duty spit, many extras, with sink .. | 1,580 – 5,200 |
| With stainless steel broiler | 2,300 – 6,000 |
| Add for stainless steel hood | 255 – 805 |
| Custom designed | 6,000 – 36,900 |
| Fire pit/chiminea | 745 – 6,700 |
| Custom fireplace | 8,100 – 14,700 |

MODULAR PLAY SYSTEMS

| | |
|--|-------------------|
| Complete system, per sq. ft. of playground ... | \$ 34 – \$ 55 |
| Play platforms,each | \$2,220 – \$5,750 |
| Add per bridge | 1,520 – 2,700 |
| Ladder | 685 – 915 |
| Pole | 445 – 645 |
| Transfer station, ADA | 515 – 880 |
| Scramble ramp, ADA | 995 – 1,730 |
| Spiral climber | 485 – 755 |
| Activity panel | 200 – 645 |

SKATE PARKS

| | |
|---|---------------------|
| Complete skate area per sq. ft., concrete | \$23.15 – \$30.75 |
| modular steel | 12.15 – 16.55 |
| Quarter pipes, single (4' width), each | \$ 3,250 – \$ 4,025 |
| Double | 5,750 – 7,700 |
| Triple | 8,050 – 10,800 |
| Half pipes, 4'-8' width | 7,450 – 16,300 |
| 12' | 17,000 – 25,900 |
| 16' | 22,300 – 37,800 |
| 20' | 27,400 – 45,100 |
| Spines | 3,100 – 11,200 |
| Wedges/Jumps | 1,230 – 5,300 |
| Rails | 295 – 815 |
| Pyramids | 7,200 – 15,900 |
| Pump hump, single | 3,525 – 7,200 |
| Double | 7,100 – 13,900 |
| Launch boxes | 3,100 – 11,600 |

DOG PARKS

| | |
|------------------------------|-----------------|
| Climb ramps/Dog walk | \$960 – \$2,750 |
| A-frame | 885 – 2,210 |
| Tire jump | 64 – 745 |
| Broad jump | 100 – 430 |
| See-saw | 110 – 1,040 |
| Weave poles | 64 – 715 |
| Pause table | 235 – 665 |
| Crawl tubes/tunnel | 76 – 1,670 |
| Window and fence jumps | 47 – 1,150 |
| Waste station | 100 – 850 |

SHOOTING RANGES

| | |
|--|---------------------|
| Complete outdoor pistol/rifle range (includes firing line, canopy, baffles, backstop, and side berms) or sporting clay course, per shooting position | \$16,300 – \$19,200 |
| Bullet traps, pistol/rifle, wet system | 11,600 – 32,200 |
| Stand alone function tester | 3,425 – 6,950 |
| Table top, low volume | 780 – 1,390 |
| Forensic | 2,775 – 3,250 |

YARD IMPROVEMENTS

SECTION UIP 13

SURFACE PARKING LOTS

The following are based on a cost per space and average area per space including asphalt paving, concrete aprons, striping, some lighting, landscaping and drainage. Older lots, sized for large cars or lots designed for high volume traffic tend toward the higher areas per space, while newer lots sized for smaller cars, or lots designed for maximum employee parking tend toward the lower end of the range. Costs will vary depending on the extent of grading, paving, lighting and other amenities required.

Open lot costs will vary significantly by size and amenities. Add only those components that apply and which can be mixed by quality. Reduce costs by 5% for every 100 cars over 200. For example, a small retail lot for 15 cars will be at the high end of the scale, while a 500 car lot will be at the low end minus 15%. Apply proportional costs to additional paved areas beyond the typical area per space.

| | LOW | AVG. | GOOD | EXCL. |
|--|------------|-------------|-------------|--------------|
| Engineering plans, survey, permits, etc. | \$ 76 | \$100 | \$125 | \$155 |
| Grading rough and finished . | 64 | 82 | 105 | 135 |
| Drainage | 150 | 165 | 185 | 200 |
| Paving spaces and drives .. | 580 | 720 | 945 | 1,190 |
| Pavement marking striping and bumpers | 13 | 20 | 39 | 58 |
| Buildings ticket booths | 20 | 20 | 33 | 39 |
| Electrical lighting and wiring . | <u>165</u> | <u>180</u> | <u>195</u> | <u>205</u> |
| Miscellaneous landscaping, fencing, signs, etc. | 135 | 150 | 180 | 195 |
| Cost per car space | \$1,190 | \$1,430 | \$1,800 | \$2,200 |
| Average area per parking space | LOW | AVG. | GOOD | EXCL. |
| Square feet | 285 | 315 | 345 | 380 |

PARKING LOT EQUIPMENT

| | COST RANGE |
|---|----------------------|
| Automatic pay station | \$95,250 - \$130,000 |
| Automatic ticket dispenser | 8,850 - 13,300 |
| with ticket reading machine | 15,700 - 19,600 |
| Gate operator, key | 960 - 1,180 |
| Card | 1,370 - 1,770 |
| Coin | 2,700 - 5,600 |
| Walk up slot box | 1,630 - 2,500 |
| Fee indicator, inside | 2,575 - 3,100 |
| Outside | 3,100 - 3,575 |
| Gate arm, automatic, one way | 4,275 - 6,150 |
| Two way | 5,350 - 6,650 |
| Traffic detectors, magnetic, each | 925 - 1,370 |
| Traffic exit spikes | 2,050 - 2,250 |
| Warning sign, lighted, on post | 960 - 1,180 |

For entry grills and gates, see Section UIP 5. For toll booths, guard houses, see Section UIP 11.

PARKING LOT IMPROVEMENTS

| | |
|---|-------------------|
| Asphalt coating, 2" min. overlay, per sq. ft. | \$ 1.35 - \$ 1.80 |
| Reseal | .20 - .46 |
| Parking lot striping, per car | 8.88 - 12.65 |
| Handicap stall, each | 16.25 - 21.50 |
| Parking lot striping, preformed reflective | |
| Thermoplastics, per car | 59.00 - 110.00 |
| Handicap stall, each | 215.00 - 525.00 |
| Parking bumpers, precast concrete, per lin. ft. | 5.13 - 8.82 |
| Wood | 4.85 - 9.98 |
| Plastic | 6.84 - 14.00 |
| Sign, for handicap stall, on pole, each | 205.00 - 345.00 |
| Wall mounted | 74.00 - 135.00 |
| Painted on surface | 45.50 - 105.00 |
| Speed bumps, 10" wide, plastic, per lin. foot | 21.15 - 32.75 |
| Metal guard rail, pipe or posts, per lin. foot | 22.70 - 42.50 |
| Barrier posts or poles, each | 110.00 - 330.00 |

FLAGPOLES

Costs are for tapered aluminum flagpoles, including concrete foundation, base, external halyard, aluminum ball and installation.

| | COST RANGE | | COST RANGE |
|-----------|------------------|-----------|---------------------|
| 20' | \$ 890 - \$2,050 | 40' | \$ 2,120 - \$ 4,725 |
| 25' | 1,150 - 2,625 | 50' | 3,225 - 7,050 |
| 30' | 1,470 - 3,225 | 70' | 7,250 - 15,400 |

For sectional, lightweight steel poles, deduct 18%.
For fiberglass poles, add 10%.
For an ornate base or top, add \$555 to \$3,525 each.
For internal halyards, add \$1,400 to \$3,000.
For aluminum nautical yardarms, add \$1,630 to \$3,225 each.

BRIDGES

The following square foot costs are national averages derived from numerous bids and contracts. The costs were trended to the present date and converted to the national base by the Local Multipliers. The high and low 5% of the cases in each category were then discarded to arrive at the reasonable high and low figures listed. The medians are derived from the total number of cases in each category.

| DESCRIPTION | COST RANGE |
|--------------------------------|---------------|
| Highway, concrete | \$ 63 - \$205 |
| Steel | 68 - 235 |
| Pedestrian, concrete | 72 - 370 |
| Steel | 72 - 410 |
| Skyway, enclosed walkway | 295 - 590 |

NOTE: Bridge costs can vary significantly depending on the type of construction, attachment and height, span and size of deck. Skyways have varying requirements for H.V.A.C., lighting, sprinklers, enclosure and roof construction.

For light, prefabricated wood or steel foot, golf cart, etc., type bridges, see Section UIP 14, Page 1.

RAILROAD SPURS

Average costs per linear foot for a 500 foot spur. Costs include rails, ties, ballast, spikes and alignment. Low end costs represent rail replacement or installing used rails. Costs of turnouts are an additive to the rail cost.

Add 2% for each 100 feet of track under 500 feet.
Deduct 2% for each 100 feet of track over 500 feet (25% maximum deduction).

Add \$4,925 for bumpers. Add \$17,900 for crossing signals.
Add \$115 per linear foot for 9' concrete roadbed. Add \$410 for crossing timbers.
Add \$1,160 per pair for wheel stops.

| WEIGHT OF RAIL (lb. per yd.) | SIZE OF RAIL (base x height) | COST INSTALLED (per ft. of track) | ADD FOR SWITCH AND TURNOUT |
|------------------------------|------------------------------|-----------------------------------|----------------------------|
| 40# | 3 1/2 x 3 1/2 | \$ 68 - \$ 86 | \$24,100 - \$30,000 |
| 60# | 4 1/4 x 4 1/4 | 87 - 110 | 29,200 - 35,500 |
| 80# | 5 x 5 | 105 - 125 | 33,600 - 41,800 |
| 100# | 5 3/8 x 6 5/8 | 115 - 145 | 37,200 - 46,600 |
| 115# | 5 1/2 x 6 5/8 | 125 - 155 | 41,000 - 50,000 |
| 130# | 6 x 6 3/4 | 140 - 165 | 44,000 - 54,000 |

YARD IMPROVEMENTS

SECTION UIP 13

QUANTITY DEDUCTIONS

For large installations of fencing or walls, such as industrial or subdivision uses, farms and highways, deduct the following:

| | | | |
|-----------------------------|-----|-----------------------------|-----|
| 600 linear feet | 5% | 4,500 linear feet | 15% |
| 2,000 linear feet | 10% | 6,000 linear feet | 20% |

CHAIN LINK FENCES

Average cost per linear foot of galvanized steel fence, including complete installation on 2" round or "H" posts set in concrete, 10' on centers. Rails, barbed wire and gates are given as additives to the base costs. Gates are priced on a per-gate basis.

| TYPE OF MATERIAL | HEIGHT | | | | |
|---------------------------------|---------|---------|---------|---------|---------|
| | 4' | 6' | 8' | 10' | 12' |
| 2" mesh, #7 wire | \$13.10 | \$19.20 | \$25.00 | \$30.50 | \$36.25 |
| #9 wire | 11.25 | 16.45 | 21.65 | 26.75 | 31.50 |
| #11 wire | 9.70 | 14.00 | 18.40 | 22.70 | 27.00 |
| Add for rails | 2.16 | 2.16 | 2.33 | 2.33 | 2.33 |
| Add for 3 strand | | | | | |
| Barbed wire | 2.80 | 2.80 | 3.15 | 3.15 | 3.15 |
| Add for barbed coils | 10.80 | 10.80 | 11.45 | 11.45 | 11.45 |
| Add for privacy slats | 6.56 | 9.98 | 13.45 | 17.20 | 20.65 |

Add 5% to 15% for aluminum or vinyl covered wire.
For fabric wind screen, add \$.53 – \$1.05 per square foot.
For security micro-mesh, add \$.76 – \$1.46 per square foot.

| | | | | | |
|--------------------------|-------|--------|--------|--------|---------|
| Gates, 3' wide | \$255 | \$ 325 | \$ 385 | ---- | ---- |
| 5' wide | 330 | 455 | 560 | \$ 685 | ---- |
| 10' wide | 550 | 685 | 790 | 890 | \$1,000 |
| 15' wide | 690 | 885 | 1,040 | 1,170 | 1,300 |
| 20' wide | 850 | 1,080 | 1,240 | 1,430 | 1,580 |
| 25' wide | | | 1,340 | 1,550 | 1,690 |

Add 25% for sliding gates.

SECURITY GATE TURNSTILES

(Cost each, including installation.)

| | COST RANGE |
|---|---------------------|
| One way, manual operation, galvanized | \$ 5,900 – \$ 6,900 |
| Aluminum | 7,900 – 10,600 |
| Stainless steel | 10,200 – 12,200 |
| Pedestal type arm turnstile | 1,520 – 4,400 |
| Handicap gate | 3,725 – 5,900 |

Add 100% for tandem gates, 25% for polycoated gates, 30% for electrically operated gates.

METAL FENCES, RAILING AND GRILLS

(Cost ranges per square foot.)

| | |
|--|-------------------|
| Hand forged wrought iron or modular, steel or aluminum | \$ 7.00 – \$21.25 |
| Gates | 10.55 – 26.00 |
| Add for bronze anodized or powder coated | 5.26 – 10.25 |

For window grills and ornamental driveway gates, see Section UIP 5.
Custom ornamental work can run two to three times the listed costs.

KENNEL RUNS

(Cost ranges per square foot of fencing.)

| | |
|--|-------------------|
| Wire mesh on steel posts (wall area) | \$ 3.28 – \$ 6.12 |
| Mesh cover (roof area) | 4.09 – 7.50 |
| Add for gates, each | 170.00 – 325.00 |

MASONRY WALLS

(Cost ranges per square foot, including normal foundations.)

| | COST RANGE |
|--|--------------------|
| 4" concrete block with pilasters, reinforced | \$ 8.71 – \$ 10.85 |
| 6" concrete block, reinforced | 10.05 – 12.35 |
| 8" concrete block, reinforced | 10.70 – 14.30 |
| 6' block piers or pilasters, each | 135.00 – 345.00 |
| Ornamental screen block | 8.88 – 14.30 |
| Add for each wythe of face block | 1.05 – 2.98 |
| Add for stucco finish, each side | 2.51 – 4.09 |
| Common brick, 8" thick | 19.20 – 24.80 |
| 8" block back-up | 16.45 – 22.05 |
| Add for each additional 4" thickness of common brick | 5.08 – 7.50 |
| 6' brick piers or pilasters, each | 255.00 – 1,040.00 |
| Add for each wythe of face brick | 2.40 – 3.73 |
| Concrete, precast, posts and solid panels | 7.88 – 14.30 |
| Add for wood grain or split face | 2.33 – 5.57 |

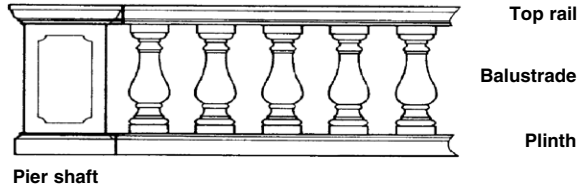
NOTE: For light residential subdivision installations using unskilled laborers, costs may be 50% lower.
For retaining walls, gabions, see Section UIP 1. For stone walls, see Section UIP 6.

CONCRETE RAIL FENCES

(Cost ranges per linear foot of post and split rail prefabricated concrete fences, installed.)

| | |
|--------------------------------|-------------------|
| 4' high, one rail | \$ 8.00 – \$12.00 |
| 5' high, two rails | 11.25 – 17.30 |
| 6' high, three rails | 15.65 – 23.50 |
| 6' high, four rails | 19.20 – 29.25 |

BALUSTRADING



Precast stone balustrading found in ornamental railings around pools, patios, garden paths, stairs, etc., will cost \$185 to \$615 per linear foot installed, excluding urns, statuary, etc. Because of the various styles and lengths of balustrades, costs should be built up individually.

UNIT COSTS

| | COST RANGE |
|---|------------------|
| Pier shaft, pedestal, pilaster, etc. (including cap and base), each | \$ 180 – \$1,940 |
| Gate, fence piers, 8' each | 2,260 – 13,800 |
| Plinth or bottom rail, per lin. ft. | 33 – 65 |
| Baluster, each | 110 – 365 |
| Ornamental block parapet screening, per lin. ft. | 88 – 140 |
| Top rail, per lin. ft. | 63 – 90 |
| add for lighting under rail, per lin. ft. | 62 – 89 |

For curved or stepped balustrading, add 120% to 150% to the cost.
For finials, urns, vases, statuary, etc., see Page 9. For lanterns, see Page 7.
For high density foam polymer plastic, deduct 25% to 65%.

TRASH ENCLOSURES

| | |
|--|-------------------|
| Masonry walled dumpster enclosures, each | \$2,200 – \$4,350 |
|--|-------------------|

CONCRETE EQUIPMENT PADS

| | |
|--|----------------|
| Package air conditioning compr. pads, each | \$180 – \$ 515 |
| Transformer pads, reinforced, each | 700 – 2,070 |

YARD IMPROVEMENTS

SECTION UIP 13

WOOD FENCES

(Cost ranges per linear foot including complete installation.)

| TYPE | COST RANGE |
|--|-------------------|
| 4' solid prefabricated panels, lattice top | \$15.65 – \$22.05 |
| 6' solid prefabricated panels, lattice top | 19.10 – 26.50 |
| 6' solid board, horizontal or vertical | 20.15 – 30.50 |
| 5' solid board | 18.40 – 27.25 |
| Add for batts | 1.80 – 6.50 |
| 6' split redwood, solid palings, (grape stake) | 19.85 – 31.50 |
| 5' split redwood | 18.70 – 28.00 |
| 6' stockade, half pole | 15.20 – 20.05 |
| whole | 21.35 – 25.75 |
| 6' basketweave | 23.70 – 34.25 |
| 5' basketweave | 23.05 – 32.25 |
| 12" – 24" wood picket | 10.85 – 17.75 |
| 30" – 40" wood picket | 14.30 – 21.25 |
| 50" – 60" wood picket | 19.85 – 28.00 |
| 24" – 50" lattice, framed | 7.60 – 14.30 |
| Two rails, split, 24" – 36" high | 9.98 – 14.30 |
| Three rails, split, 36" – 48" high | 11.00 – 16.10 |
| Four rails, split, 42" – 54" high | 13.45 – 20.05 |
| Lattice, arbor, per square foot | 4.33 – 8.21 |
| Trellis (no frame) | .64 – 1.35 |
| Wooden gates, per square foot | 10.80 – 16.45 |
| Paint, per square foot, each coat | .40 – .58 |

For treated wood, add 10% to the low side of the cost range.

FARM AND RANCH FENCING

(Cost ranges per linear foot, subject to quantity deductions.)

| | |
|---|-----------------|
| Barbed wire on steel posts, three strands | \$3.10 – \$4.39 |
| Four strands | 3.33 – 4.97 |
| Five strands | 3.91 – 5.13 |
| Wire mesh on steel posts | 3.97 – 5.62 |
| Snow fence | 4.26 – 7.33 |
| Add for wooden posts | .47 – .58 |

VINYL FENCES

(Cost ranges per linear foot including installation.)

| | |
|---------------------------------|-------------------|
| 6' spaced slat panels | \$23.05 – \$44.00 |
| 4' – 5' spaced slat panels | 21.95 – 39.75 |
| 5' basketweave | 32.00 – 52.00 |
| 6' solid board panels | 24.80 – 45.75 |
| 4' – 5' solid board panels | 22.80 – 41.75 |
| For lattice top, add | 4.85 – 7.45 |
| 36" – 48" picket | 15.45 – 27.50 |
| 24" – 50" lattice, framed | 8.49 – 16.65 |
| Two rails, 36" – 48" high | 10.75 – 15.85 |
| Three rails, 60" high | 13.70 – 18.40 |
| Four rails, 60" high | 14.30 – 20.75 |
| Lattice, arbor, per square foot | 4.62 – 9.70 |
| trellis (no frame) | 1.11 – 1.93 |

| Gates, each | HEIGHT | | | |
|-------------|--------|-------|-------|-------|
| | 3' | 4' | 5' | 6' |
| 3' wide | \$290 | \$300 | \$325 | \$375 |
| 4' wide | 300 | 315 | 345 | 410 |
| 5' wide | 325 | 330 | 450 | 470 |

OUTDOOR LIGHTING

| | COST RANGE |
|---|--------------------|
| Floodlights, per fixture, | |
| High pressure sodium | \$ 1,040 – \$2,130 |
| Mercury vapor | 885 – 1,720 |
| Metal halide | 995 – 1,980 |
| Fluorescent or quartz-iodine | 850 – 1,180 |
| Incandescent | 400 – 715 |
| Spotlights or luminaires, decorative, each | 165 – 485 |
| Underwater lighting | 580 – 1,390 |
| Low voltage, residential | 47 – 135 |
| Poles, steel, per lin. ft. (ornamental, add 100%) | 58 – 125 |
| Concrete | 35 – 140 |
| Fiberglass | 76 – 165 |
| Add per arm bracket (aluminum, add 85%) | 82 – 180 |
| Post lantern, residential | 190 – 555 |
| Decorative pier lanterns | 82 – 805 |
| Athletic fields (total floodlight system costs): | |
| Football fields, high school or park, minimum | 136,000 – 216,000 |
| Good lighting | 216,000 – 335,000 |
| Softball diamonds, minimum lighting | 48,500 – 82,500 |
| Good lighting | 97,500 – 152,000 |

SCOREBOARDS

The costs per square foot of face are for electronic scoreboards hung or mounted flush on gymnasium walls without extra structure or foundation. See Section UIP 14 for pole costs and Section UIP 6 for extra signage.

| TYPE | AREA IN SQUARE FEET | | |
|---------|---------------------|---------------------|--------------------|
| | Under 35 | 35 to 75 | Over 75 |
| Outdoor | \$125.00 – \$140.00 | \$ 64.00 – \$110.00 | \$58.00 – \$ 64.00 |
| Indoor | 140.00 – 190.00 | 100.00 – 140.00 | 76.00 – 110.00 |

| ITEM | COST RANGE |
|------------------------------------|-----------------|
| Add for each controller | \$ 345 – \$ 870 |
| Horn | 555 – 780 |
| Shot clock, penalty timer | 1,300 – 2,220 |
| Separate game timer, shots on goal | 2,260 – 2,575 |
| Separate goal lights | 345 – 690 |

For four faced scoreboards, add 5% to 15% to the single-face costs and apply to the area of all sides.

SOFT MODULAR PLAY SYSTEMS

Modular play systems are found in fast food chains, retail stores and pay-per-play amusement centers. Generally they consist of a padded tube frame, net walls, padded floors and a variety of playing components. The following costs are typical cost ranges for most common systems and include assembly.

| | |
|---|---------------------|
| Ball baths, including frame, shoe cubby, entry/exit tubes and pads. | |
| 6 to 10-user capacity | \$ 6,300 – \$11,800 |
| 15 to 25-user capacity | 14,000 – 26,600 |
| 30 to 50-user capacity | 22,500 – 60,000 |
| add for super slide, per unit | 4,925 – 7,600 |
| Ball hoop, per unit | 965 – 2,050 |
| Bumper bridge, per unit | 6,700 – 12,200 |
| Air bounce, 10 to 20-user capacity | 26,300 – 42,300 |

YARD IMPROVEMENTS

SECTION UIP 13

RESIDENTIAL STYLE SWIMMING POOLS

Costs are averages for gunite pools constructed in frost free areas with normal soil conditions. Costs include filter, concrete coping, one light, steps, ladder and a maximum depth of 9 feet. Add or deduct 2% for each foot of deviation from the maximum. Custom free form pools may run 50% to 100% more. A negative edge rim will add 10% to 20%

to the costs. For lap pools, enter table using the perimeter. Costs do not include heaters (see table on the next page). See Pages 3, 9 and 10 for decking, waterscape, gazebos, etc. Typical decking will add 20% to 50% (double for spa only or custom pools) to the basic pool cost. Vinyl-lined are in-ground, sand-supported pools.

| Size (sq. ft.) | Perimeter (feet) | Typical Cost Range | Size (sq. ft.) | Perimeter (feet) | Typical Cost Range |
|------------------|------------------|---------------------|--------------------|------------------|---------------------|
| 300 (12 x 25) | 60 | \$18,900 – \$21,800 | 650 (18 x 36) | 90 | \$28,400 – \$33,500 |
| | 65 | 19,700 – 23,300 | | 95 | 29,900 – 34,900 |
| | 70 | 21,400 – 24,600 | | 100 | 30,900 – 36,400 |
| | 75 | 22,600 – 26,400 | | 110 | 33,200 – 39,000 |
| Vinyl lined | 80 | 23,500 – 27,700 | Vinyl lined | 120 | 35,400 – 41,600 |
| | 75 | 17,700 – 19,900 | | 110 | 23,400 – 26,400 |
| | 75 | 23,900 – 27,900 | | 100 | 31,500 – 37,300 |
| | 80 | 24,900 – 29,400 | | 110 | 33,600 – 40,200 |
| 450 (15 x 30) | 85 | 26,100 – 30,700 | 800 (20 x 40) | 115 | 35,100 – 41,300 |
| | 90 | 27,500 – 32,200 | | 120 | 35,800 – 42,600 |
| | 95 | 28,400 – 33,300 | | 130 | 38,500 – 45,100 |
| | 90 | 19,600 – 22,600 | | 120 | 25,800 – 28,700 |
| Vinyl lined | 80 | 25,500 – 29,500 | Vinyl lined | 110 | 35,700 – 42,300 |
| | 85 | 26,600 – 30,900 | | 120 | 38,300 – 45,100 |
| | 90 | 27,800 – 32,500 | | 125 | 39,200 – 46,100 |
| | 100 | 30,300 – 35,100 | | 140 | 42,300 – 50,000 |
| 525 (15 x 35) | 110 | 32,300 – 37,400 | 1,000 (20 x 50) | 150 | 44,500 – 52,000 |
| | 110 | 21,600 – 24,300 | | 140 | 30,300 – 33,600 |
| | Vinyl lined | | | Vinyl lined | |

NOTE: Larger pools will cost \$47.00 to \$54.00 per square foot.

| | |
|--|---------------------|
| Deduct for lack of filter | \$ -670 – \$ -1,220 |
| Add for two pump spa system | 505 – 1,590 |
| Add for diving stand, rock or board (add 100% for commercial diving board) | 620 – 1,220 |
| Add for extra underwater lights, each | 505 – 1,080 |
| Add for fiber optic lighting | 1,200 – 4,800 |
| Add for extra ladder | 430 – 1,100 |
| Add for slide | 1,430 – 4,125 |
| Add for pool lip waterfall, per linear foot | 8.49 – 11.35 |
| Add for mosaic tile bottom | 3,250 – 16,100 |
| Add for rockscape grotto | 8,050 – 31,900 |
| Add for waterfalls, precast | 460 – 3,200 |
| Add for swim up bar | 2,430 – 4,025 |
| Add for handicap lift | 2,220 – 7,350 |
| Add for automatic cleaner, hydrosweep | 695 – 3,250 |
| Add for automatic sanitation system, chlorinator | 125 – 1,780 |
| Add for ozone generator | 1,630 – 5,550 |
| Add for ionizer | 805 – 3,200 |
| Add for automatic controls (spa only, deduct 50%) | 1,980 – 5,550 |

In cold areas and for poured concrete pools and spas add 15% to 30% to gunite costs.

For fiberglass pools deduct 10% to 20%.

For pool or spa covers and alarms, see Solar table on page 9.

NOTE: For pool enclosures and buildings, see Section UIP 14.

SPAS AND HOT TUBS

Exterior gunite spas and tubs. For interior installations, add 5% to 15%.

| | |
|---|--------------------|
| Attached to pool, shared pool equipment | \$6,800 – \$12,800 |
| Detached, including equipment | 9,250 – 25,600 |
| Portable, self-contained fiberglass or wood units, complete | 4,250 – 8,850 |
| Acrylic/thermoplastic, single lounge | 7,050 – 11,800 |
| Double lounge | 8,600 – 16,300 |
| Redwood hot tubs | 2,775 – 8,450 |

ABOVEGROUND POOLS

The costs are for residential, ground level, metal framed, round, plastic-lined pools including filter and pump. See Page 2 for decking.

| | | | |
|-------------------|-------------------|-------------------|-------------------|
| 12' diam. | \$1,930 – \$2,300 | 21' diam. | \$3,350 – \$4,625 |
| 15' diam. | 2,550 – 3,725 | 24' diam. | 3,725 – 5,400 |
| 18' diam. | 3,100 – 4,350 | 27' diam. | 4,350 – 6,200 |

For rectangular shaped pools, deduct 80% from the residential gunite pool table.

AQUATIC EXERCISE POOLS

The costs are averages for 8' x 18' residential, fiberglass, stationary lap or aquatic exercise pools, with a 5-HP paddlewheel propulsion system, pump, filter and electric heater. See Page 3 for decking. (For pool jets only, deduct 20%.)

| DEPTH | COST RANGE |
|---|---------------------|
| 42", flat floor | \$19,300 – \$48,200 |
| 50", side wall water return channels | 24,300 – 54,750 |
| 60", deep water running platform | 26,600 – 68,750 |
| Add for natural gas heater in lieu of electric .. | 915 – 1,600 |
| Add for custom fit thermal blanket | 205 – 805 |

YARD IMPROVEMENTS

SECTION UIP 13

SOLAR POOL AND SPA HEATING EQUIPMENT

The following are average installed costs for complete solar pool heating systems, per panel. Costs include collectors, valves, racks for flat mounting and up to 200 feet of PVC solar-loop piping. The systems utilize the existing pool pump and filter.

| TYPE OF | 1 | 10 | 20 |
|---------------------------|---|------------------|------------------|
| COLLECTOR | PANELS | PANELS | PANELS |
| Plastic (unglazed) . . . | \$ 815 – \$1,040 | \$ 775 – \$1,020 | \$ 730 – \$1,000 |
| Metal (unglazed) . . . | 1,000 – 1,280 | 945 – 1,200 | 885 – 1,120 |
| *Metal (glazed) | 1,550 – 1,900 | 1,480 – 1,810 | 1,410 – 1,720 |
| Rubber mat | \$12.25 – 18.40 per sq. ft. of total panel area | | |

*Glazed collectors are enclosed with glass and include copper piping to and from the collectors.

COST RANGE

| | |
|---|-----------------------|
| Add for panel racks, to raise panel angle, per panel | \$ 300.00 – \$ 400.00 |
| Tedlar panel covers, per panel | 58.00 – 100.00 |
| Pool solar blanket (bubble mesh), per square foot | .40 – 2.33 |
| Pool safety cover, per square foot | 2.75 – 6.95 |
| Automatic pool cover, per square foot | 10.55 – 24.80 |
| Pool alarm system, complete | 235.00 – 460.00 |
| Complete with security system | 780.00 – 1,980.00 |
| Sonar system | 5,900.00 – 8,100.00 |
| Insulated spa covers, per square foot | 9.38 – 27.00 |
| Copper piping for solar loop; add 20% (except for glazed metal panels). | |

POOL HEATERS

Costs are averages of installed costs for gas or electric pool heaters. Costs do not include a base or pad. Heat pump systems cost \$4,825 to \$7,000 each. Small electric spa heaters (5 to 10 kw) cost \$815 to \$990 each.

| GAS | | | | ELECTRIC | | | |
|--------------|---------|--------------|---------|-------------|---------|-------------|---------|
| Output (MBH) | Cost | Output (MBH) | Cost | Output (KW) | Cost | Output (KW) | Cost |
| 50 | \$1,380 | 150 | \$2,250 | 10 | \$2,430 | 25 | \$3,225 |
| 75 | 1,580 | 250 | 3,225 | 15 | 2,775 | 50 | 4,100 |
| 100 | 1,880 | 500 | 4,500 | 20 | 3,050 | 75 | 5,450 |

COMMERCIAL SWIMMING POOLS

The large recreational pools found in parks, schools, hotels, etc., vary widely in finish, structure and equipment, but the following costs will give a good approximation. Costs are for poured concrete and stainless steel pools and include chlorinators, filters, heaters, boards, ladders and coping. The finest quality, poured concrete, Olympic competition or municipal pools may run 100% above listed costs. Decks and bath houses should be computed separately.

POURED CONCRETE POOLS

| SIZE (square feet) | TYPICAL COST RANGE (per square foot) |
|----------------------------------|--------------------------------------|
| 1,000 – 2,000 | \$71.00 – \$89.00 |
| 2,000 – 4,000 | 67.00 – 84.00 |
| 4,000 – 6,000 | 65.00 – 81.00 |
| 6,000 – 8,000 | 64.00 – 80.00 |
| Over 8,000 | 62.00 – 77.00 |
| Add for tiled surfaces | 9.65 – 32.25 |
| Deduct 20% for gunite pools. | |

STAINLESS STEEL POOLS

| | COST RANGE |
|--|---------------|
| Stainless steel walls and recirculation system with a concrete floor | \$155 – \$175 |
| All stainless steel, in-ground | 195 – 240 |
| Elevated | 235 – 310 |

SMALL COMMERCIAL POOLS AND SPAS

Motel pools, in areas where codes permit use of residential-type construction and equipment, cost \$52.00 to \$76.00 per square foot including filters, boards, heater and chlorinator.

For apartments and motels, separate whirlpool baths for four to ten persons, cost \$8,400 to \$22,600 exclusive of decks.

Portable handicapped access step platforms with railing and grab bars cost \$2,650 to \$4,975 plus \$1,750 for deck storage locker. For water parks and slides, see Section UIP 14.

LARGE MUNICIPAL POOLS

Large municipal pools with bath houses, lighting, fences, decks and all the other features in the complete complex will cost \$2,700 to \$4,200 per person of rated capacity.

FOUNTAINS

Following are average costs for indoor or outdoor decorative water displays, consisting of circulating water with various spray designs and lighting. Costs include nozzles, spray rings, jets, pumps, drain, overflow system, water supply system, submerged lighting and wiring, control panel and wind control where needed. Pool is not included; see pond or conventional pool costs. Costs vary greatly due to display size, water flow rate, (commercial, 70 to 1,000 gallons in motion) and complexity of the spray design.

| | LOW | AVG. | GOOD | HIGH |
|---|----------|----------|----------|-----------|
| Residential fountains | \$ 1,330 | \$ 5,150 | \$13,100 | \$ 27,600 |
| Commercial fountains | 14,700 | 32,200 | 68,500 | 152,000 |
| Add for fiberglass bowls, | | | | |
| 10" deep, up to 50 gallons | 555 | 715 | 915 | 1,160 |
| Add for fiberglass pools, | | | | |
| 8" – 16" deep, up to 500 gallons | 1,080 | 1,400 | 1,760 | 2,270 |
| Birdbaths, sundial pedestals, etc. | 345 | 540 | 850 | 1,340 |
| Precast stone, two tier, | | | | |
| 3 1/2' – 4 1/2' diam. | 1,040 | 1,200 | 1,430 | 1,680 |
| Three tier, 4 1/2' – 7 1/2' diam. | 1,220 | 2,030 | 3,400 | 5,600 |
| Medium pool, up to 11' diam. | 6,000 | 7,850 | 10,200 | 13,300 |
| Large pool, up to 26' diam. | 8,400 | 11,600 | 15,700 | 21,600 |
| Add for pool fountain | | | | |
| Centerpiece | 880 | 1,900 | 3,950 | 8,400 |
| Sculptures, brass, under | | | | |
| 1' or wall mount | 47 | 76 | 125 | 190 |
| Medium figures | 235 | 385 | 600 | 960 |
| Large, 2' – 4' high (sundials, spheres, etc.) | 1,280 | 2,250 | 3,800 | 6,400 |
| precast stone, under | | | | |
| 1' or wall mount | 255 | 325 | 405 | 515 |
| Medium figures, urns, vases, Jardinieres | 400 | 755 | 1,430 | 2,750 |
| Large finials, pinnacles | 600 | 1,160 | 2,250 | 4,350 |
| Large, 2' – 4' high | 1,100 | 2,130 | 4,025 | 7,600 |
| Over 4' high | 5,600 | 7,050 | 8,800 | 11,100 |
| Recirculating pump and tubing, residential | 125 | 180 | 255 | 375 |

YARD IMPROVEMENTS

SECTION UIP 13

LANDSCAPING

The square foot costs below are to be applied to the entire landscaped area and are used when actual unit pricing is not feasible. Costs for new landscaping will vary greatly due to the number of variables involved. The cost ranges include soil preparation and some post installation maintenance commensurate with the quality, excluding extremes.

LOW COST areas have a minimum number of 1 to 5 gallon shrubs, small trees and ground-cover plants proportioned for a light visual effect, manual irrigation and seeded lawn.

AVERAGE COST areas include an average number of 3 to 5 gallon shrubs, small to large trees, closer spacing of small ground-cover plants, automatic irrigation and seeded lawn.

HIGH COST areas will have a high visual content of 5 to 15 gallon shrubs, a greater proportion of large trees, closely spaced groundcover with top dressing, automatic irrigation, seeded lawn and sodded turf areas.

For pathway costs, see golf course unit costs in Section UIP 14.

| AREAS | OCCUPANCIES | LOW | AVG. | HIGH |
|--|-------------|----------|----------|----------|
| Small areas: single family dwellings including multiple/residential developments | | \$4.73 | \$6.29 | \$8.33 |
| Medium areas: office complexes, shopping centers, etc. | | 4.09 | 5.49 | 7.33 |
| Large areas: industrial parks and educational/institutional facilities | | 2.16 | 2.98 | 3.86 |
| UNIT COSTS | | | | |
| Soil preparation, per sq. ft., | | | | |
| Fine grading | \$ | .17 | \$.27 | \$.37 |
| Mulching | | .25 | .41 | .77 |
| Top dressing or bedding | | 2.47 | 2.95 | 3.55 |
| Lawns, per sq. ft., seeding, | | | | |
| With dressing | | .30 | .40 | .60 |
| Hydroseeding only | | .10 | .17 | .34 |
| Sodded | | .56 | .94 | 1.59 |
| Ground cover, per sq. ft., | | | | |
| Gravel or wood chips | | 1.80 | 2.33 | 2.98 |
| Spreading plants | | .58 | 1.05 | 1.88 |
| Edging, per lin. ft., masonry | | 14.20 | 18.60 | 23.90 |
| Cast stone | | 20.85 | 23.15 | 26.00 |
| Metal | | 3.15 | 4.97 | 7.60 |
| Redwood | | 2.46 | 3.33 | 4.62 |
| Timber or ties | | 5.57 | 8.33 | 12.25 |
| Shrubs and hedges, each, small | | 14.70 | 19.60 | 27.00 |
| Medium | | 35.00 | 50.00 | 72.00 |
| Large | | 110.00 | 155.00 | 205.00 |
| Trees, each, small 15 gal. | | | | |
| 20" box | | 100.00 | 185.00 | 365.00 |
| Medium, 24" 36" box | | 425.00 | 690.00 | 1,120.00 |
| Large, 42" box and larger | | 1,080.00 | 1,880.00 | 3,050.00 |
| Tree grates, including frame, per sq. ft. | | 24.25 | 32.00 | 42.50 |
| Planter boxes, per sq. ft., | | | | |
| Concrete, precast | | 22.50 | 44.50 | 88.00 |
| Cast stone, ornate troughs | | 280.00 | 400.00 | 515.00 |
| Fiberglass | | 39.00 | 76.00 | 150.00 |
| Wood | | 82.00 | 150.00 | 240.00 |
| Planters, each, round, concrete, | | | | |
| 24" diameter | | 195.00 | 330.00 | 555.00 |
| 48" diameter | | 290.00 | 485.00 | 755.00 |
| Tree size, 3' 10' diameter | | 1,170.00 | 1,880.00 | 2,800.00 |
| Bollards, each, wood | | 53.00 | 110.00 | 155.00 |
| Concrete | | 290.00 | 555.00 | 845.00 |
| Add for lighting | | 195.00 | 275.00 | 365.00 |

WATERSCAPING

The square foot costs apply to the entire waterscaped area and include excavation, rockscapes and all recirculation equipment. Add appropriate liner costs for lakes and streams.

| | COST RANGE | | |
|---|------------|---------|---------|
| | LOW | MEDIAN | HIGH |
| Lakes | \$ 1.11 | \$ 2.40 | \$ 5.13 |
| Collection ponds | 43.75 | 55.00 | 71.00 |
| Streams | 7.45 | 10.35 | 14.80 |
| Add for liner, asphalt | 1.98 | 2.98 | 4.44 |
| Clay | .64 | 1.11 | 1.80 |
| Concrete | 4.26 | 6.29 | 9.15 |
| Plastic and sand | 1.29 | 2.33 | 4.62 |
| Waterfalls, complete, per sq. ft. of face | 44.25 | 63.00 | 89.00 |
| Small, under 50 sq. ft. | 115.00 | 170.00 | 250.00 |

LAWN SPRINKLERS

Costs per square foot, completely installed, including trenching and backfill. Intricate shrub type strip areas may be twice as high as conventional systems. For automatic controllers add \$155.00 to \$200.00 per station.

| | | | |
|--|----------|----------|----------|
| Conventional, residential and | | | |
| Small commercial | \$.63 | \$.88 | \$1.17 |
| Commercial, medium areas | .59 | .78 | 1.02 |
| Rain Bird or Rain Jet systems, large areas | .41 | .50 | .58 |
| Sprinkler heads, | | | |
| Impact or rotary | \$ 37.25 | \$ 95.00 | \$195.00 |
| Pop-up or shrub | 7.33 | 19.30 | 47.50 |
| Control valve, | | | |
| Manual, 3/4" - 1" | 44.25 | 59.00 | 74.00 |
| 1 1/4" - 2" | 105.00 | 135.00 | 165.00 |
| for remote control, add | 29.50 | 44.25 | 59.00 |
| Gate valve, 3/4" - 1" | 52.00 | 66.00 | 95.00 |
| 1 1/2" - 2" | 140.00 | 190.00 | 275.00 |
| Valve boxes | 44.25 | 74.00 | 135.00 |
| Atmospheric vacuum breaker, 3/4" - 1" | 59.00 | 74.00 | 110.00 |
| 1 1/4" - 2" | 125.00 | 170.00 | 240.00 |
| Pressure backflow preventer, 3/4" - 1" | 515.00 | 555.00 | 600.00 |
| 1 1/4" - 2" | 645.00 | 755.00 | 880.00 |
| PVC pipe, Schedule | | | |
| 40, 1/2" - 3/4", per linear foot | 1.63 | 1.80 | 1.93 |
| 1" - 1 1/2" | 2.11 | 2.75 | 3.28 |
| 2" | 3.86 | 4.26 | 4.62 |

RESIDENTIAL PONDS

| SIZE (square feet) | COST RANGE | SIZE (square feet) | COST RANGE |
|--------------------|-------------------|--------------------|---------------------|
| 25 | \$5,150 - \$6,550 | 150 | \$ 8,050 - \$ 9,850 |
| 50 | 5,850 - 7,300 | 200 | 8,400 - 10,600 |
| 75 | 6,550 - 8,050 | 250 | 9,100 - 11,700 |
| 100 | 7,300 - 8,800 | 300 | 10,300 - 13,100 |

NOTE: Large ponds will cost \$41 - \$53 per square foot.

COMMERCIAL PONDS

Concrete ponds used for fountain displays and for wading, including filters. Typical depth is 2' to 4'. Use the low end of the range for commercial bumper boat ponds.

| SIZE (square feet) | POURED CONCRETE PONDS COST RANGE (per square ft.) |
|--------------------|---|
| Under 500 | \$17.85 - \$24.25 |
| 500 - 1,000 | 16.35 - 21.95 |
| 1,000 - 2,000 | 15.45 - 19.85 |
| 2,000 - 4,000 | 14.90 - 19.00 |
| 4,000 - 6,000 | 14.70 - 18.40 |
| 6,000 - 8,000 | 14.00 - 18.10 |
| Over 8,000 | 13.80 - 17.85 |

Deduct 25% for gunite pools.
Deduct 30% for fiberglass sides, free-formed.
Deduct 40% for vinyl lining.

AERATORS

Aerators pull oxygen-deficient water from depths of ponds and lakes and propel it as small droplets in the air to improve water quality. They help to remove algae without the use of chemicals or herbicides. Costs include floating unit, propeller pump, basic control box, 100' power cable and installation. Add 15% for three phase equipment.

| | | | |
|---------------------------|---------|---------|---------|
| Single phase pump, 1/2 HP | \$1,760 | \$2,290 | \$3,325 |
| 1 HP | 2,360 | 3,075 | 4,450 |
| 2 HP | 3,075 | 4,025 | 5,850 |
| 3 HP | 3,975 | 5,150 | 7,450 |
| 5 HP | 4,950 | 6,450 | 9,350 |
| Add for lights | 1,330 | 1,960 | 2,700 |

DEMOLITION

SECTION UIP 13

UNIT COSTS

(Costs per square foot except where indicated.)

These costs are of necessity very general and do not include hauling or dumping charges. Individual small jobs may involve a trade minimum that can run from \$89 to \$525. For detailed costs, we would recommend using our repair and claims products. For complete building demolition, see next page.

| YARD | COST RANGE |
|--|-----------------|
| Paving, asphalt | \$.48 – \$.73 |
| Concrete, unreinforced, 2" – 6" | .62 – 2.42 |
| Reinforced, 4" – 6" | 1.41 – 3.19 |
| Curbing, asphalt, per lin. ft. | 2.01 – 2.54 |
| Concrete | 6.67 – 7.85 |
| Fencing, chain link, per lin. ft. | 2.01 – 3.02 |
| Wood | 2.19 – 2.89 |
| Masonry | 14.55 – 27.25 |
| Piping, up to 6", per lin. ft. | 4.07 – 7.35 |
| Underground tanks, 5,000 gal. minimum and up, cost per gal. | .15 – .21 |
| Add for leak abatement and disposal | 1.09 – 2.42 |
| Dumpster costs, per week, per cubic yard, up to 10 cubic yards | 35.25 – 75.00 |
| For site clearing, see Section UIP 1. | |

BUILDING

| | |
|---|-------------------|
| Foundation, concrete, stem wall | \$12.45 – \$23.30 |
| Footing, per linear foot | 9.76 – 14.95 |
| Exterior wall, frame | 1.38 – 4.79 |
| Masonry | 3.67 – 8.69 |
| Floor, slab on grade, plain | 2.19 – 4.66 |
| Reinforced | 3.49 – 7.23 |
| Wood | .66 – 1.65 |
| Concrete, elevated (deck fill only, deduct 70%) | 5.72 – 9.59 |
| elevated, 6" – 12" | 10.85 – 20.05 |
| Floor cover, carpet | .18 – .28 |
| Wood | .75 – 1.80 |
| Resilient | .32 – .65 |
| Tile, ceramic/quarry | 1.41 – 2.07 |
| Partitions, studs (only) | .47 – .87 |
| Drywall | .63 – 1.33 |
| Plaster | .84 – 1.54 |
| Concrete block | 2.19 – 5.99 |
| Cabinetry, per linear foot | 8.75 – 14.15 |
| Ceiling, drywall | .65 – 1.27 |
| Acoustic tile | .38 – 1.03 |
| Plaster | .85 – 1.35 |
| Wood | 1.65 – 3.07 |
| Insulation | .18 – .98 |

BUILDING (Continued)

| | | |
|---|--------|--------|
| Roofing, composition/wood shingles | \$.42 | \$.64 |
| Built up | .63 | 1.70 |
| Tile, concrete/clay | .48 | 2.18 |
| Roof sheathing, spaced boards | .38 | .47 |
| Solid | .87 | 2.72 |
| Fireplace chimney, masonry, per linear foot ... | 14.45 | 44.25 |
| Appliances, each | 71.00 | 215.00 |
| Plumbing, per each fixture | 53.00 | 285.00 |
| Piping, up to 4", per lin. ft. | 1.77 | 4.37 |
| HVAC units, each fixture, up to 150,000 BTU .. | 115.00 | 435.00 |
| Ducts, per lin. ft. | .66 | 5.66 |
| Electrical, light fixture, each | 23.70 | 41.75 |
| Receptacle/switch, each | 4.66 | 11.10 |
| Conduit/wire, per lin. ft. | 3.67 | 4.84 |
| Wire, romex, per lin. ft. | .71 | 1.19 |

AMERICANS WITH DISABILITIES ACT (ADA) BARRIER REMOVAL (These costs are per occurrence where applicable.)

| | |
|--|-------------------|
| Enlarge doorways, replace | \$ 505 – \$ 2,825 |
| Add for automatic doorway entries, new | 4,825 – 8,300 |
| Offset hinges or lever handles, replace | 150 – 305 |
| Doorknob extensions, new | 42 – 54 |
| Directional visual signage, braille (raised markings), excl. posts | 22 – 61 |
| Visual signal panels, excluding alarm (smoke, fire, etc.) | 255 – 395 |
| Audible/visual alarms, new | 465 – 565 |
| Elevator panels, replace | 370 – 1,490 |
| Elevator cab, add audible or visual signal, each | 630 – 745 |
| Interior panel control, relocate | 9,950 – 13,300 |
| Replace | 14,100 – 21,500 |
| Emergency communication system | 3,725 – 5,450 |
| Define traffic pattern step edging, thresholds, mats, new | 42 – 285 |
| Power relocation | 155 – 235 |
| Restrooms, accessible toilet stalls, replace ... | 570 – 1,890 |
| Grab bars, new | 71 – 845 |
| Raised seats, mirrors, other accessories, New or relocate | 160 – 285 |
| Handicapped fixtures, drinking fountains, Replace | 745 – 2,130 |
| Relocate sink | 570 – 960 |
| Insulate exposed hot water pipes (trade minimum, add \$76) | 22 – 40 |
| Reconfiguration of furniture, display racks, counter heights, etc. | 105 – 570 |
| Emergency egress equipment, handicap lifts, see Section UIP 7. | |

DEMOLITION

SECTION UIP 13

GENERAL INFORMATION

Costs presented are average costs of removal per square foot of total building floor area, except as noted, including loading and hauling, but not dump fees. It is also assumed that the materials have no salvage value. For individual unit costs, see previous page.

Costs for removal vary greatly depending on the size and complexity of the job and extent of contamination regarding hazardous materials. The following cost ranges are in some cases based on one or only a few removal projects and should be considered as very rough guides. Due to the number of variables involved, we would suggest that, wherever possible, survey, bid or contract costs be obtained.

BUILDING DEMOLITION

(Cost range per square foot.)

| | COST RANGE | | COST RANGE |
|----------|-------------------|---------------|-------------------|
| Class A: | \$5.38 – \$7.90 | Class D: | \$3.59 – \$ 5.55 |
| Class B: | 7.01 – 9.64 | Class S: | 3.25 – 5.38 |
| Class C: | 4.25 – 6.34 | Gutting only: | 7.46 – 23.30 |

Small residences (approximately 1,000 – 1,500 sq. ft. per floor):

| | | | |
|----------|--------------------|----------|--------------------|
| 1 story: | \$3,625 – \$8,500 | 2 story: | \$4,825 – \$11,600 |
| 3 story: | \$6,400 – \$14,000 | | |

HAZARDOUS MATERIAL REMOVAL

RADON REMOVAL: Residential basement ventilation retrofit costs \$1,040 to \$1,570 for a passive exhaust pipe ventilation system, plus \$350 to \$585 for active fan and alarm.

| ASBESTOS REMOVAL: | LOW | AVG. | GOOD | HIGH |
|--------------------------|------------|-------------|-------------|-------------|
| Full abatement | \$24.55 | \$33.25 | \$45.25 | \$62.00 |
| Spot removal | 9.64 | 12.80 | 16.90 | 23.00 |
| Encapsulation | 1.77 | 2.29 | 3.02 | 3.90 |

| LEAD REMOVAL: | | | | |
|--------------------------|---------|---------|---------|---------|
| Full abatement | \$10.35 | \$13.25 | \$16.90 | \$21.95 |
| Spot removal | 8.85 | 10.35 | 12.45 | 14.75 |
| Encapsulation | 3.07 | 3.90 | 5.02 | 6.51 |

| | | | | |
|--------------------------|--------|--------|--------|--------|
| GRAFFITI REMOVAL: | \$1.17 | \$1.57 | \$1.96 | \$2.36 |
|--------------------------|--------|--------|--------|--------|

SITE DECONTAMINATION: Biological soil remediation costs have averaged \$110.00 per cu. yd. for land treatment (tilled soil conditioning farming), \$205 per cu. yd. for bioventing vapor extraction (air stripping and soil treatment) to \$320 per cu. yd. for full bioreactor treatment (active slurry-aeration mixing), with costs having varied plus or minus 50%.

GROUND WATER CLEANUP: Pump and treat remediation costs have averaged \$.13 to \$.18 per gallon treated per year while permeable reactive barrier treatment systems averaged \$.52 to \$1.12 per gallon treated per year with costs having varied plus or minus 50%.

STORMWATER MANAGEMENT

| | COST RANGE |
|---|-------------------|
| Polyethylene chamber system, complete, per gallon | \$ 1.25 – \$ 2.54 |
| UNIT COSTS | |
| Chamber only (70 – 425 gallon), each | 64.00 – 285.00 |
| Pipe drainage system, 10", per linear foot | 14.75 – 18.05 |
| 12" | 17.15 – 20.65 |
| 24" | 33.25 – 39.00 |
| 36" | 59.00 – 64.00 |
| 48" | 94.00 – 100.00 |
| Bioswale detention system, cost per sq. ft. | 4.66 – 7.73 |
| Compost filter berm system, cost per linear foot | 2.19 – 5.26 |

RECREATIONAL FACILITIES

SECTION UIP 14

GOLF COURSES

Primary variables in golf course costs are type of terrain and vegetation, size and layout, amount and quality of irrigation systems and overall quality. Excluded from these studies are extensive grading, such as that required for canyon and hillside courses, special drainage problems, all structures (clubhouse, maintenance, satellite cart, starters, range buildings, etc.), including bridges, and all man-made lakes and other waterscaping. Some of these items are listed as additives, while the balance may be found in other sections of this manual. No off-site costs, feasibility and environmental studies, etc., are included.

Included in the cost per hole are normal clearing of land, including incidental grading, complete irrigation and drainage systems, planting of trees in open land, greens, tees, fairways, service roads and cart paths, builders' profit and overhead, financing during construction and architects' fees for all items except structures.

Subdivision courses which are designed to allow as many home sites as possible to border the course will require longer pipe runs and expenses greater than normal for the playing length. Many costs may be written off against the adjoining development, such as utilities which are brought in for the development and used for the course. In many cases, allocation of costs between development and golf course must be made arbitrarily.

The costs listed for a basic commercially developed course are typical ranges in four quality classifications. Actual contracts and estimates have ranged from \$58,000 per hole for a sprinklered course with minimal improvements to \$363,000 per hole for a course scooped out of the mountains, \$487,000 per hole for a course built from marsh land and \$935,000 per hole for a course carved out of rock with completely imported top soil. All excluded costs must be examined; in some cases total project cost, including all structures, equipment, developers' overhead and profit, startup and maintenance has reached a budget of \$618,000 to \$1,929,000 per hole and up, excluding land costs.

Costs of complete irrigation systems constitute approximately 15% to 30% of the cost per hole of the courses listed. Architectural design, supervision and engineering costs are included at 8% to 12%. A complex project with special engineering and a name architect can run twice the averages listed. Older courses may be at the lower end of the cost ranges where design layout and improvements had not been affected by restrictive land use and/or environmental controls.

Courses are grouped into price classifications, with a limited description of what the price includes. Courses may fit into one class by sheer length (5,500 to 7,000 yards) and another by gross area covered (100 to 170 acres) or by overall quality, in which case, interpolations may be made. Generally, simpler courses will require little clearing or grading, encompass minimal acreage, have easy playing holes and/or minimal irrigation, while good courses will include extensive sitework and/or irrigation over large acreage, with well designed holes for maximum playability.

COST RANGE PER HOLE

| | |
|--|-------------------------|
| Class I. Minimal quality, simply developed, budget course on open natural or flat terrain, few bunkers, small tees and greens | \$ 74,250 – \$ 102,000 |
| Class II. Simply designed course on relatively flat terrain, natural rough, few bunkers, small built up tees and greens, some small trees | \$106,000 – \$151,000 |
| Class III. Typical private type club on undulating terrain, bunkers at most greens, average elevated tees and greens, some large trees moved in or clearing of some wooded areas, driving range | \$153,000 – \$226,000 |
| Class IV. Better championship-type course on good undulating terrain, fairway and greens bunkered and contoured, large tees and greens, large trees transplanted, driving range, may have name architect | \$232,000 – \$370,000 |
| Good championship course with same high cost features | \$332,000 – \$513,000 |
| Excellent championship course with extensive features | \$650,000 – \$1,018,000 |

COMPONENT COSTS PER HOLE

The cost of the basic course as listed includes only those items designated with an asterisk(*). Courses in Classes I and II fit into the low cost range, while those in Classes III and IV fall in the medium cost range. Many courses will have components that fall into several quality levels.

| | LOW COST | MEDIUM | HIGH COST |
|---|-------------------|---------------------|---------------------|
| *Mobilization, proj. manage. | \$4,225 – \$4,700 | \$ 5,250 – \$ 6,150 | \$10,500 – \$24,000 |
| *Erosion control | 455 – 815 | 1,390 – 2,280 | 3,700 – 6,900 |
| *Clearing, grubbing | 495 – 655 | 1,040 – 1,470 | 1,990 – 5,600 |
| *Rough shaping | 3,425 – 6,200 | 11,500 – 19,500 | 24,000 – 38,800 |
| *Survey and engineering | 845 – 1,280 | 1,790 – 2,675 | 3,475 – 7,750 |
| *Architectural | 6,000 – 9,050 | 13,100 – 21,700 | 51,000 – 120,000 |
| *Top soil, haul and spread | 845 – 2,170 | 5,150 – 12,500 | 15,500 – 26,200 |
| Water features, earthwork | 3,425 – 9,650 | 13,100 – 22,200 | 25,300 – 46,600 |
| *Drainage | 2,725 – 3,025 | 3,425 – 4,225 | 10,400 – 21,700 |
| Storm drains | 4,700 – 13,700 | 20,400 – 43,000 | 59,750 – 94,750 |
| *Greens | 7,650 – 13,700 | 24,000 – 43,300 | 47,100 – 58,000 |
| *Tees | 1,310 – 2,525 | 5,150 – 9,650 | 12,400 – 30,900 |
| *Bunkers | 2,110 – 4,225 | 7,750 – 13,700 | 17,100 – 27,800 |
| *Finishing, shaping and grading | 2,525 – 3,750 | 5,450 – 9,250 | 11,500 – 23,200 |
| *Cart path grading | 455 – 845 | 1,710 – 3,425 | 3,875 – 5,400 |
| *Irrigation system, automatic | 25,300 – 36,800 | 51,750 – 77,250 | 103,000 – 193,000 |
| manual | 12,000 – 15,300 | 19,500 – 25,700 | ---- |
| add for pumping plant | 2,725 – 6,950 | 10,300 – 17,500 | 20,400 – 25,300 |
| Well | 1,710 – 2,170 | 2,725 – 3,425 | 3,875 – 5,400 |
| *Grow-in seeding preparation | 5,950 – 6,850 | 8,100 – 9,650 | 12,800 – 33,200 |
| *Grassing | 12,800 – 16,100 | 19,300 – 24,300 | 28,700 – 69,500 |
| *Finished cart paths | 8,250 – 12,400 | 17,900 – 25,300 | 34,100 – 49,400 |
| Bridges, railings, tunnels, etc. | 1,710 – 6,000 | 8,550 – 13,400 | 14,700 – 24,000 |
| Water features | 6,000 – 16,300 | 30,200 – 46,300 | 59,750 – 152,000 |
| *Landscaping | 845 – 1,310 | 2,170 – 3,875 | 11,500 – 38,800 |
| *Fencing and walls | 495 – 775 | 1,390 – 3,100 | 10,100 – 33,200 |
| *Total of indicated features | 86,750 – 127,000 | 187,000 – 293,000 | 413,000 – 814,000 |
| Miscellaneous: | | | |
| Clubhouse | 8,550 – 25,300 | 59,750 – 85,500 | 110,000 – 134,000 |
| championship entertainment facility ---- | ---- | ---- | 201,000 – 595,000 |
| Maintenance, other buildings | 4,275 – 10,300 | 19,900 – 32,600 | 46,600 – 85,000 |
| Maintenance equipment | 15,700 – 22,200 | 32,600 – 38,800 | 43,000 – 45,900 |
| Oper., grow-in/start-up budget | 9,050 – 14,300 | 22,200 – 34,700 | 38,800 – 77,500 |

RECREATIONAL FACILITIES

SECTION UIP 14

SHORT COURSES

Pitch and putt course. Nine holes on 10 to 15 acres, 1,000 yards long, including irrigation, excluding structures and lighting
 \$39,400 – \$55,750

Par 3 course. Nine holes on 15 to 20 acres, 1,400 yards long, including irrigation, excluding structures and lighting
 \$50,500 – \$69,750

Executive course. Eighteen holes on 50 to 60 acres, 4,800 yards long, rated par 60, including irrigation, excluding structures and lighting
 \$76,500 – \$100,000

Lighted driving ranges. Separate paved stations, fenced, irrigated, good quality, not including separate putting or pitching greens, buildings or equipment. Cost per station \$7,200 – \$10,500

 add for covered structure, per station 2,040 – 3,425

 add for heated tee, per station 6,850 – 8,200

 add for elevated tee, per station 4,100 – 8,200

 driving range equipment 51,750 – 89,500

MINIATURE GOLF COURSES

Minimal quality, eighteen holes, 2,000 to 4,000 square feet on 1/4 acre, simply developed, or prepackaged budget course on flat terrain including lighting, excluding booths, and parking lot.
 Cost per hole (indoor, deduct 10%) \$ 1,790 – \$ 5,400

Average course, eighteen holes, 4,000 to 10,000 square feet, on 1/4 to 1/2 acre, excluding booths, snack bars, and parking lot, including course plumbing and lighting, professionally designed and installed.
 Cost per hole \$ 6,900 – \$21,700

Good custom course, eighteen holes, 10,000 to 20,000 square feet, 1/2 to 1 acre or more, extensive themes with major elevation, rock and waterscape layout, excluding buildings and parking lot.
 Cost per hole \$22,500 – \$51,750

MISCELLANEOUS UNIT COSTS

The following costs may be used to adjust items included in the cost per hole pricing, to add for those items which have not been included (marked by an asterisk), or as a build-up method to develop a complete course cost.

| | LOW | AVG. | GOOD |
|--|---------|----------|----------|
| Site clearing, cost per acre | \$1,490 | \$ 3,175 | \$ 6,600 |
| Fairways, cost per acre | 2,825 | 3,650 | 4,575 |
| Rough, cost per acre | 665 | 1,520 | 3,575 |
| Earth moving, cost per cu. yard | 2.43 | 3.68 | 5.40 |
| Imported fill, cost per cu. yard | 3.79 | 7.29 | 13.95 |
| Tees, elevated, cost per sq. ft. | 1.01 | 1.25 | 1.79 |
| Bunkers, (sand traps) cost per sq. ft. | 3.32 | 4.99 | 7.29 |
| Greens, flat, cost per square foot | 3.14 | 4.56 | 6.93 |
| elevated/contoured | 5.63 | 7.94 | 11.50 |
| Artificial putting greens | 15.70 | 21.05 | 27.75 |
| Target greens | 3.50 | 4.33 | 5.45 |
| Pathways, asphalt, cost per sq. ft. | 2.19 | 3.20 | 4.38 |
| Concrete | 3.32 | 4.99 | 7.41 |
| Gravel | .59 | 1.01 | 1.30 |
| Soil cement | .54 | .65 | 1.01 |
| Bridges, pedestrian, cost per sq. ft., light wood/steel | 28.25 | 44.00 | 71.00 |
| Golf cart | 37.50 | 54.00 | 78.00 |
| Car or light truck | 56.00 | 77.00 | 110.00 |
| Player shelters, open, each | 1,790 | 3,250 | 5,800 |
| Enclosed | 8,300 | 12,100 | 16,700 |
| Lighting, short courses, per pole | 6,850 | 12,700 | 23,500 |

Misc. water/landscape, paving, parking lots, lighting, fencing, drainage, etc., see Section UIP 13.

BUMPER BOAT FACILITIES

The following costs are average cost ranges of complete bumper boat facilities. Individual facilities can vary greatly depending on the type of pond construction, overall size and amenities. Boat costs are not included, and can run \$2,600 to \$7,150 each. Pedal boats cost \$595 to \$1,790 each.

Minimal quality, vinyl lined ponds with filters and wood decks, minimal railing or fence enclosure and lighting, excluding booths and parking lots \$41,200 – \$65,000

Average pond and filters, some freeforming, gunite or fiberglass panel sides, concrete lip and deck, paved waiting/viewing area, adequate handrails, fencing and lighting, excluding all buildings and parking lots \$82,500 – \$130,000

Good concrete pond and filters, some rock or waterscape islands, good lighting, railing and fencing, excluding buildings, canopies or parking lots \$113,000 – \$179,000

WATER SLIDES

The following are typical costs for most common types of elevated water slides in straight, single or double radius configurations and include open fiberglass body flume sections, galvanized steel flume supports, stairs, decking, pump, motor, all necessary piping fittings, installation and designers' fees. All pool and land improvement costs are excluded. For swimming pools, see UIP 16. Add 15% for enclosed tubular flumes. Add 25% for serpentine configurations. Add 13% to 19% for each foot of flume over 3 feet wide. Deduct 25% to 35% for slides laid on bare earth; under 60', deduct 10% to 20%.

| RIDE LENGTH (FEET) | COST RANGE | RIDE LENGTH (FEET) | COST RANGE |
|--------------------|-----------------------|--------------------|-----------------------|
| 50 | \$ 54,250 – \$ 86,000 | 250 | \$201,000 – \$316,000 |
| 60 | 62,500 – 100,000 | 300 | 237,000 – 367,000 |
| 90 | 87,750 – 139,000 | 350 | 265,000 – 416,000 |
| 100 | 94,750 – 151,000 | 400 | 295,000 – 464,000 |
| 150 | 132,000 – 210,000 | 500 | 354,000 – 555,000 |
| 200 | 168,000 – 265,000 | 600 | 407,000 – 641,000 |

Additive costs, cost each except as indicated:

| | |
|------------------------------------|-----------------|
| Landing pond, per square foot | \$ 70 – \$ 97 |
| Surge reservoir | 11,000 – 16,700 |
| Filtration and chlorination system | 34,100 – 47,100 |

Large aquatic parks with bath houses, lighting, fences, decks and all the other features in the complete complex will cost \$1,510 to \$4,575 per person of rated capacity.

WATER SPRAY PARKS

Interactive automated water spray-splash parks.

| | |
|-------------------------------------|-------------------|
| Complete area per sq. ft., concrete | \$11.55 – \$22.80 |
|-------------------------------------|-------------------|

RECREATIONAL FACILITIES

SECTION UIP 14

SKI LIFTS

Costs for ski lifts vary greatly due to local terrain, both the steepness and roughness of the slope. The following installed costs are averages, including drive machinery, terminals, towers and carriers, and designers' fees. Extreme costs were excluded. Equipment costs may also be affected by the speed of the lift, where requirements for the number of intermediate towers and carriers will typically decrease as the speed of the lift increases, depending upon the skill of the skier, ambient temperatures and the length of the lift, as well as the terrain.

Off-site costs are not included. These would include the costs of bringing utilities to the site, access roads, environmental impact studies, etc. On public lands governmental regulations may require the air-lifting of materials for environmental reasons, resulting in higher than normal installation costs. Any clearing or grading of the ski slopes would be considered improvements to the land.

Due to the number of variables involved, we would suggest that, wherever possible, manufacturers' costs, installers' costs or contract costs be obtained.

Typical Skier Lift Speeds

| | | |
|--------------------|--------------------|---------------------|
| Beginner | Novice | Intermediate/Expert |
| 340 – 360 ft./min. | 420 – 460 ft./min. | 500 – 550 ft./min. |

Gondolas and detachable quad lifts run at 800 – 1,000 ft./min. for all classifications.

INSTRUCTIONS

Lift costs are developed by adding together the units, consisting of (1) the length of the lift in feet, (2) the length of vertical drop in feet and (3) the actual lift capacity per hour, and multiplying that total by the total unit rate costs given in the tables.

$$\text{Total Units} = (1) \text{ Length of lift} + (2) \text{ Vertical drop} + (3) \text{ Actual capacity per hour}$$

Rated capacity may be higher than practical operation permits. Actual capacity is determined by taking (a) the cable speed per hour times the number of persons per carrier, divided by the average spacing, which is (1) the length of the lift divided by half the number of (b) carriers.

$$\frac{(a) \text{ Cable speed per hour} \times \text{number of persons per carrier}}{\text{Spacing} : (1) \text{ length of lift} \div (b) \frac{1}{2} \# \text{ carriers}}$$

For Poma or T-Bar lifts, calculate the actual capacity as you would a single chair-lift.

EXAMPLE

A double chair-lift, (1) 3,000 feet in length, (2) 850-foot vertical drop (16.5-deg incline), (a) cable speed of 450 feet per minute, with (b) 100 double chairs.

$$\frac{450 \text{ (Cable speed/min.)} \times 60 \text{ min.} \times 2 \text{ (persons per chair)}}{3,000' \text{ length} \div 50 \text{ (half the number of chairs)}} =$$

$$\frac{54,000}{60} = 900 \text{ persons per hr. (actual capacity)}$$

Unit total: 3,000' length + 850' vertical drop + 900 capacity/hr. = 4,750 units

Cost of lift from table: 4,750 units x \$207.50* = \$985,625

*NOTE: The unit cost of \$207.50 was an interpolation from the table, with 4,750 units falling halfway between 3,500 and 6,000 units (\$220 and \$195).

SKI LIFT COST TABLE

Enter table with total number of units:

| Type of Lift | Unit Range | Cost Per Unit |
|------------------------------|-----------------|---------------|
| Poma Lift | 1,000 – 2,500 | \$100 – \$91 |
| or | 2,500 – 3,500 | 91 – 82 |
| Tbar | 3,500 – 6,000 | 82 – 71 |
| Double Chair Lift | 1,500 – 3,500 | 245 – 220 |
| | 3,500 – 6,000 | 220 – 195 |
| | 6,000 – 10,000 | 195 – 160 |
| Triple Chair Lift | 1,500 – 3,500 | 285 – 250 |
| | 3,500 – 6,000 | 250 – 225 |
| | 6,000 – 10,000 | 225 – 195 |
| Quad Chair Lift (fixed grip) | 6,000 – 9,000 | 340 – 320 |
| | 9,000 – 12,000 | 320 – 305 |
| | 12,000 – 16,000 | 305 – 285 |
| Gondolas | 9,000 – 12,000 | 790 – 675 |
| | 12,000 – 16,000 | 675 – 560 |

For single chair lifts reduce double chair lift unit costs by 20%.

For detachable quad chair lifts increase fixed costs by 20%. Rope tows are usually constructed with local labor and little design, and the costs are usually determined locally.

SYNTHETIC SURFACES

Synthetic surfaces are normally applied on prepared subsurfaces, usually wood, asphalt or concrete.

Subsurface costs should be determined from Unit-in-Place or Segregated Cost sections and the cost of the appropriate synthetic surface added.

| Applied costs per sq. ft. of synthetic surface: | COST RANGE |
|--|-------------------|
| Ice skating | \$43.75 – \$45.50 |
| Baseball and football turf, shock pad included . | 12.70 – 15.95 |
| Running tracks | 12.35 – 15.35 |
| Basketball courts | 10.05 – 15.10 |
| Field houses | 10.90 – 15.35 |
| Tennis courts | 8.27 – 11.85 |
| Playgrounds | 6.73 – 12.25 |
| Golf, indoor driving ranges, no pad | 1.45 – 3.13 |
| Striping, (per lineal foot) | .28 – .35 |

RECREATIONAL FACILITIES

SECTION UIP 14

GRANDSTANDS AND BLEACHERS

The following are typical cost ranges of grandstands and bleachers. The ranges do not represent the lowest or highest costs that might be found in each structure. Structures built by governmental bodies have tended to be at the high end of the cost range. Costs include stairs, ramps, handicap platforms and press boxes commensurate with type and quality, as well as designers' fees.

| TYPE | PER SQ. FT. (Horizontal Projection) | PER SEAT |
|--|---|--------------------|
| Gymnasium bleachers, steel frame, wood benches, telescoping, manual operation; | | |
| under 600 seats | \$36.00 – \$44.00 | \$95.00 – \$135.00 |
| over 600 seats | 33.25 – 40.50 | 85.00 – 115.00 |
| add for power operation | 9.22 – 11.15 | 23.60 – 33.50 |
| Portable bleachers, steel frame, metal, fiberglass or wood benches, erected; | | |
| up to 800 seats | 18.15 – 20.70 | 50.00 – 71.00 |
| over 800 seats | 17.05 – 18.90 | 44.50 – 64.00 |
| Permanent bleachers, wood frame and benches; | | |
| up to 1,000 seats | 23.10 – 27.25 | 68.00 – 91.00 |
| 1,000 to 2,000 seats . . | 20.85 – 26.25 | 61.00 – 85.00 |
| over 2,000 seats | 19.90 – 24.15 | 57.00 – 78.00 |
| Grandstand bleachers, open steel frame, metal, fiberglass or wood benches, school or fairground type; | | |
| up to 1,000 seats | 36.00 – 67.00 | 105.00 – 225.00 |
| 1,000 to 5,000 seats . . | 34.50 – 65.00 | 100.00 – 215.00 |
| over 5,000 seats | 32.25 – 62.00 | 91.00 – 205.00 |
| add for roofed areas . . | 9.03 – 14.40 | 26.25 – 46.75 |
| add for pressbox box area | 53.00 – 84.00 | ----- |
| Concrete or steel bleachers, no interior construction, stadium type, closed deck; | | |
| under 5,000 seats | 86.00 – 105.00 | 255.00 – 350.00 |
| 5,000 to 10,000 seats . . | 84.00 – 105.00 | 245.00 – 345.00 |
| over 10,000 seats | 81.00 – 100.00 | 235.00 – 335.00 |
| add for roofed areas . . | 10.90 – 16.85 | 31.75 – 57.00 |
| Wood bleachers, with built in dressing rooms, restrooms, pressbox, lighting, stucco exterior walls; | | |
| under 5,000 seats | 79.00 – 92.00 | 235.00 – 310.00 |
| over 5,000 seats | 76.00 – 87.00 | 225.00 – 295.00 |
| add for roofed areas . . | 9.74 – 11.10 | 28.25 – 37.75 |
| Concrete or steel bleachers with built in dressing and training rooms, restrooms, snack bars, pressbox, lighting, college or small municipal stadium type; | | |
| under 5,000 seats | 135.00 – 170.00 | 405.00 – 570.00 |
| 5,000 to 15,000 seats . . | 115.00 – 140.00 | 335.00 – 455.00 |
| over 15,000 seats | 110.00 – 135.00 | 315.00 – 430.00 |
| add for roofed areas . . | 13.00 – 20.30 | 37.75 – 64.00 |
| Major ball parks, complete structural improvements, figured at baseball capacity; | | |
| Older parks, minimum facilities | | 1,590 – 1,950 |
| Modern parks, minor league type | | 1,320 – 4,700 |
| major league, open stadium, sky boxes . . | | 2,925 – 7,300 |
| enclosed, roofed stadiums, artificial turf | | 3,475 – 8,850 |
| add for retractable roofs | | 2,100 – 6,250 |

ICE SKATING RINKS

Artificially made ice rinks are manufactured in various forms, but all include pumps, compressors, refrigerant fluids and freezing (piping) systems. Costs include designers' fees.

Refrigeration piping systems may be found:

1. Laid on bare earth.
2. On bare earth with a concrete curbing.
3. On a concrete slab with a curbing.
4. In a formed concrete slab.

Basic mechanical equipment, pumps, compressors, fluids, and piping installed in a standard-size hockey rink:

(85' x 200') \$22.15 to \$31.25 per sq. ft. of frozen area.

Smaller rinks tend to be more expensive:

Stage-size rinks, etc. \$49.00 to \$69.00 per sq. ft. of frozen area.

| Additive costs, per square foot of rink: | COST RANGE |
|--|-----------------|
| Excavation | \$.42 – \$.87 |
| Subsoil heating | 1.95 – 2.60 |
| Sand floor | .95 – 1.58 |
| Wood sleepers | .60 – .83 |
| Gravel base, 4" | .61 – 1.06 |
| Plastic water barrier | .44 – .69 |
| Insulation, rigid, 2" | 1.95 – 3.11 |
| Concrete slab, 5" – 6" | 4.72 – 6.23 |
| Concrete curbing | .50 – .96 |
| Dehumidifier | 3.47 – 5.38 |
| Side boards, wood frame | 4.53 – 6.69 |
| metal frame | 4.06 – 8.92 |
| add for spectator protection, clear shield . . . | 2.85 – 3.47 |
| chain link | .60 – 1.26 |

MISCELLANEOUS UNIT COSTS

(Cost per ton.)

The following costs may be used to adjust the basic square foot costs above or as an alternate pricing method.

| CAPACITY (Tonnage) | REFRIGERATION | PLUS PIPING | |
|--------------------------------------|-------------------|-------------------|-------------------|
| | | PLASTIC PIPE | METAL TUBE |
| 80 | \$2,700 – \$3,150 | \$2,190 – \$2,420 | \$2,525 – \$2,825 |
| 100 | 2,210 – 2,775 | 1,870 – 2,010 | 2,060 – 2,210 |
| 120 | 2,010 – 2,420 | 1,500 – 1,720 | 1,740 – 2,010 |
| 140 | 1,740 – 2,060 | 1,390 – 1,500 | 1,540 – 1,720 |
| Dehumidifier, cost per ton | | | \$355 – \$480 |

RECREATIONAL FACILITIES

SECTION UIP 14

DRIVE-IN THEATERS

Costs for drive-in theaters vary greatly depending on the extent of grading, paving, natural drainage, size and type of screens, speaker equipment and service facilities provided. The costs are broken into the major cost items on a cost per space basis, excluding extremes. Miscellaneous costs such as cost of normal financing and contractors' profit and overhead are prorated to each item. Architects' and designers' fees are included in the engineering costs for all items except buildings, the costs of which will include all fees applicable to the structural improvements. Many theaters will be mixed in quality and it is often better to compute individual items from other sections of the manual. Costs for storm drains, projection and food equipment, etc., are not included.

| | LOW | AVG. | GOOD | EXCL. |
|------------------------------------|---------|---------|---------|---------|
| Engineering – | | | | |
| plans, survey, permits, etc. . . | \$135 | \$170 | \$210 | \$255 |
| Grading – | | | | |
| rough and finished ramps . . . | 130 | 160 | 205 | 245 |
| Paving – ramps and drives . . . | 405 | 525 | 685 | 890 |
| Buildings – concession, restrooms, | | | | |
| projection and ticket booths | 240 | 315 | 400 | 505 |
| *Screens – frame and foundation | 150 | 210 | 290 | 400 |
| Sound dispersement – | | | | |
| serving two cars | 100 | 115 | 140 | 175 |
| Electrical – lighting and wiring | 180 | 230 | 295 | 375 |
| Miscellaneous – fencing, signs, | | | | |
| Miscellaneous – fencing, signs, | | | | |
| landscaping, etc. | 85 | 125 | 185 | 265 |
| Cost per car space | \$1,425 | \$1,850 | \$2,410 | \$3,110 |

COST MODIFIERS

Costs of each drive in theater have been adjusted to a base number of spaces and gross area per space. Multipliers are given to adjust these costs for deviations from the base. To determine the gross area per space, divide the entire improved area of the drive in by the number of spaces.

| NUMBER OF SPACES | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |
|----------------------|------|------|------|------|------|------|------|------|------|
| MULTIPLIER | 1.25 | 1.16 | 1.08 | 1.00 | .97 | .94 | .91 | .89 | .86 |
| GROSS AREA PER SPACE | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 |
| MULTIPLIER | .84 | .89 | .94 | 1.00 | 1.04 | 1.08 | 1.12 | 1.16 | 1.20 |

*For multiple-screen theaters add the cost of additional screens, and adjust the modifiers to the average number of spaces and gross improved area per screen. The following unit costs for screen structures are typical cost ranges per vertical square foot of screen area, from a simple open structure to an ornate enclosed frame with storage and office area.

MISCELLANEOUS UNIT COSTS TABLE

The following costs may be used to adjust items included in the Cost Per Space pricing, to add for those items which have not been included or as a build up method to develop a complete theater cost.

| | LOW | AVG. | GOOD |
|---|----------|----------|-----------|
| Screen structures, per square foot of screen area | | | |
| Wood frame on poles with | | | |
| guy wires | \$17.70 | \$20.35 | \$24.20 |
| Wood frame on poles set in | | | |
| concrete, timber bracing . . . | 24.20 | 27.50 | 31.50 |
| Wood frame on timbers, | | | |
| concrete footings, plain | 28.50 | 33.75 | 40.25 |
| Ornate | 39.25 | 45.75 | 54.00 |
| Steel frame, | | | |
| concrete footings, plain | 32.75 | 41.25 | 51.00 |
| Ornate | 44.25 | 52.00 | 61.00 |
| Tilt-up concrete, concrete frame, | | | |
| and steel-framed screen enclosure | 49.00 | 60.00 | 74.00 |
| Sound systems, each | | | |
| Car speakers | 26.25 | 38.75 | 58.00 |
| add for heaters | 130.00 | 145.00 | 160.00 |
| Post and junction box | 38.50 | 58.00 | 86.00 |
| Remote systems, | | | |
| transistor type, etc. | 31.25 | 43.00 | 59.00 |
| Lighting, low level, each | | | |
| Ramp, entry/exit, etc. | 93.00 | 130.00 | 180.00 |
| Directional signage | 225.00 | 320.00 | 465.00 |
| Ticket booths, each | 7,350 | 8,900 | 10,900 |
| Projection and miscellaneous equipment, excluding food service, | | | |
| Total cost per screen | \$39,000 | \$69,000 | \$123,000 |

Miscellaneous paving, lighting, fencing, drainage, playground equipment, etc., see Section UIP 16.

GO-CART TRACKS

The following are average costs of a complete go cart facility. Facilities will vary by the quality of construction and by size and amenities on the course. Costs are per linear foot of track, with a typical width of 22' to 30' for full size courses. Car costs are not included, and will run \$2,975 to \$9,000 each. For remote control shutoff, add \$2,190 to \$3,625 plus \$660 per car.

Minimum quality facility, small, simple oval or kiddie course, flat with minimum bumpers, lights and fencing, excluding all buildings and parking lot. \$115.00 – \$150.00

Average facility, typically 600 to 900 linear feet of concrete track, safety rail bumper system, adequate banking, standard design, lighting and fencing, some landscape, excluding buildings and parking lot. \$190.00 – \$300.00

Good course, 800 feet and longer, well banked, berms, multi-oval, good concrete paving and steel safety rail system, course lighting, railing and fencing, landscaped layout, waiting/viewing area, excluding buildings, canopies or parking lots. \$235.00 – \$335.00

RECREATIONAL FACILITIES

SECTION UIP 14

RADIO AND TV TOWERS

Radio and television towers are individually designed for the location, considering climatic conditions such as ice, wind, seismic and antenna loads. Costs are typical cost ranges excluding extremes. Due to the number of variables involved, it is suggested that whenever possible, manufacturers', installers' or contract costs be obtained.

Included in the costs are concrete footings, erection, painting, guy wires, lighting, platforms and designers' fees. Antennas and transmission cables are not included. Multiple antenna installations and mono poles will tend to be at the high end of the range.

SELF SUPPORTING TOWERS

| HEIGHT (FEET) | COST RANGE | HEIGHT (FEET) | COST RANGE |
|---------------|-----------------------|---------------|-----------------------|
| 50 | \$ 14,800 – \$ 23,700 | 225 | \$135,000 – \$151,000 |
| 75 | 30,000 – 45,100 | 250 | 146,000 – 167,000 |
| 100 | 47,500 – 69,500 | 300 | 155,000 – 189,000 |
| 150 | 93,000 – 126,000 | 350 | 178,000 – 218,000 |
| 200 | 127,000 – 144,000 | 400 | 199,000 – 246,000 |

TRIANGULAR GUYED TOWERS

(Price per linear foot, up to 400 feet high)

| | |
|---------------------------------------|---------------|
| 10" Ham radio*, police and fire bands | \$ 94 – \$135 |
| 20" Taxi and public service bands | 140 – 205 |
| 24" Radio, V.H.F., U.H.F. bands | 180 – 265 |
| 30" Cellular applications | 215 – 355 |
| 40" Microwave towers | 265 – 435 |
| 54" Master TV systems | 435 – 970 |

*NOTE: Use high end of range for small crank-up self-supporting towers, add 100% for motorized operation.

Add 35% for every 100 feet of height over 400 feet.

SATELLITE DISHES

The following are average installed costs small commercial satellite dish systems. The costs include a 10' dish, receiver, descrambler, cable and all items necessary for a complete installation. The costs range from very basic systems, whose dishes are adjusted manually, to systems with many user features, extensive on-screen displays and automatically moving dishes.

| LOW | AVERAGE | HIGH |
|---------|---------|---------|
| \$3,100 | \$5,100 | \$8,450 |

Deduct 20% for dishes 6' and under.

Small residential Ku Band dishes will run \$365.

SHIP AND BOAT DOCKS

The following are typical cost ranges per square foot including fenders, railings, utilities, and miscellaneous items commensurate with the type and quality, exclusive of buildings.

LIGHT CONSTRUCTION (Wood girders, nailed)

| | |
|-------------------------------|---------------------|
| 2" floating deck, light posts | \$ 27.25 – \$ 43.50 |
| 2" decking, light posts | 29.00 – 39.50 |
| 3" decking, light piling | 33.25 – 51.00 |

MEDIUM CONSTRUCTION (Wood girders, bolted)

| | |
|---|---------------|
| 2" floating deck, winch or light piling | 45.00 – 83.00 |
| 3" decking, light piling | 45.75 – 64.00 |
| 4" decking, average piling | 52.00 – 76.00 |

HEAVY CONSTRUCTION (Heavy wood girders)

| | |
|-------------------------------------|----------------|
| 4" or heavier decking, heavy piling | 82.00 – 115.00 |
|-------------------------------------|----------------|

HEAVY CONSTRUCTION (Major shipping dock)

| | |
|--------------------------------|-----------------|
| Heavy concrete deck and piling | 125.00 – 190.00 |
|--------------------------------|-----------------|

SMALL BOAT MARINAS

The typical cost range for floating slips in modern commercial developments is \$6,350 to \$11,700 per slip, including ramps, anchor piers, utilities, lockers, designers' fees, etc., but excluding all land improvements, based on a typical mixture of boat types and sizes. Actual contracts have ranged from \$3,275 per slip for small berths on calm riverfront with no utilities to \$21,000 per slip for a high quality commercial complex with complete utilities and heavy anchorage.

| UNIT COST | LOW | AVG. | GOOD |
|--|----------|----------|----------|
| Deck and frame, per square foot of deck; | | | |
| Frame only, metal | \$ 10.15 | \$ 17.30 | \$ 29.00 |
| wood | 4.66 | 10.60 | 23.70 |
| Deck only, 2" treated wood | 2.94 | 4.37 | 6.56 |
| marine plywood | 7.08 | 8.27 | 9.62 |
| concrete plank | 8.85 | 10.85 | 13.40 |
| fiberglass panels | 11.35 | 13.60 | 16.45 |
| metal decking | 9.22 | 11.75 | 14.70 |

Deck and frame, preassembled, portable dock, gangway or ramps;

| | | | |
|------------------------------------|--------|--------|----------|
| light duty pipe, wood deck | 18.60 | 21.25 | 25.50 |
| medium duty truss, wood deck | 20.95 | 29.75 | 42.50 |
| metal deck | 35.25 | 46.25 | 62.00 |
| Drive on small craft modular dock | 25.75 | 53.00 | 110.00 |
| Add for handrails, per linear foot | 28.00 | 32.50 | 37.75 |
| ladders, 4' to 6', each | 115.00 | 310.00 | 855.00 |
| lockers, storage box, each | 320.00 | 620.00 | 1,170.00 |
| benches, 4' to 6', each | 155.00 | 260.00 | 465.00 |
| roof, fabric canopies, per sq. ft | 11.35 | 15.85 | 22.35 |
| metal or fiberglass | 6.26 | 8.68 | 11.85 |
| wood | 9.74 | 13.45 | 18.65 |
| utilities, electrical, each | 415.00 | 885.00 | 1,900.00 |
| water or fire | 240.00 | 475.00 | 975.00 |

Flotation, drum or box, /sq. ft. of deck

Anchorage system, piles, see Section UIP 1.

| | | | |
|-------------------------------------|-----------|-----------|-----------|
| metal poles, light, per lin. ft. | 4.66 | 8.27 | 14.45 |
| telescoping | 38.75 | 43.50 | 49.00 |
| stiff arm brace, per lin. ft. | 41.75 | 45.75 | 52.00 |
| winch and cable, each | | | |
| (excl. conc. anchor) | 1,620.00 | 2,825.00 | 4,900.00 |
| Swim rafts, complete, per sq. ft. | 20.35 | 31.50 | 49.00 |
| Boat storage racks, metal, per boat | 655.00 | 885.00 | 1,180.00 |
| Boat lifts, manual, 1200# – 3000# | 1,590.00 | 2,060.00 | 2,800.00 |
| personal watercraft | 1,030.00 | 1,430.00 | 1,930.00 |
| motorized, add | 465.00 | 655.00 | 965.00 |
| straddle hoists, cost per ton | 4,575.00 | 6,900.00 | 10,200.00 |
| add for jib mast | 20,600.00 | 23,100.00 | 26,200.00 |

Miscellaneous paving, lighting, fencing, see Section UIP 16; sheet piling, sea walls, Section UIP 1.

RECREATIONAL FACILITIES

SECTION UIP 14

SPORTS COURTS

(Cost per playing court only, including design fees, excluding all building improvements.)

TENNIS COURTS

| (60' x 120' = 7,200 Sq. Ft.) | COST RANGE |
|--|---------------------|
| Concrete court, posts, net, striping | \$34,200 – \$53,000 |
| Add for lighting | 10,900 – 15,000 |
| Add for fencing | 9,350 – 13,800 |
| Add for resilient cushioned layer, per sq. ft. | 1.35 – 4.84 |
| Additional paved area, per sq. ft. | 4.19 – 6.14 |
| Asphalt court (2" to 4"), per sq. ft. | 3.90 – 6.50 |
| Clay court, per sq. ft. | 3.84 – 5.67 |
| Umpire chair, each | 610 – 915 |
| add for roof | 135 – 240 |
| striping, cost per court | 310 – 480 |

For detailed lighting, fencing, net costs, etc., see Section UIP 13.

PLATFORM TENNIS, prefabricated (30' x 60' = 1,800 Sq. Ft.)

| | |
|---|---------------------|
| Metal or wood deck, metal supports, fencing, lights | \$60,000 – \$68,000 |
| Deduct for wood under carriage and supports | 4,675 – 8,900 |
| Add for under deck heating | 6,900 – 8,100 |

HANDBALL – RACQUETBALL COURTS

(Prefabricated, 20' x 40' = 800 Sq. Ft.)

| | |
|---|---------------------|
| Prefinished wall and ceiling panels, wood floor, lighting, complete | \$45,200 – \$67,000 |
| Add for spectator viewing wall | 13,300 – 71,500 |
| Unit costs, per sq. ft. of surface, except as indicated: | |
| Wall panels, laminated, prefinished | 12.15 – 16.15 |
| viewing window | 53.00 – 65.00 |
| clear glass wall | 69.00 – 97.00 |
| opaque glass wall | 145.00 – 180.00 |
| Flooring, hardwood | 11.35 – 19.55 |
| Ceiling panels | 6.50 – 11.35 |
| Lighting, per fixture, fluorescent | 410 – 535 |
| high-intensity discharge | 690 – 860 |

BACKYARD PLAYCOURTS

| | |
|-----------------------------------|-------------------|
| (concrete), per square foot | \$21.55 – \$29.00 |
| add for interlocking plastic tile | 6.79 – 10.05 |

SHUFFLEBOARD COURTS (concrete courts, complete, 52' x 6')

| | |
|-----------------------------------|-------------------|
| Residential | \$1,340 – \$1,950 |
| Commercial, parks and playgrounds | 2,190 – 5,100 |

BATTING CAGES, cost per station

| | |
|---|---------------------|
| School, ceiling mount canopy or ext. net, tube frame | \$ 2,975 – \$ 5,050 |
| Add for motorized operation | 7,200 – 8,450 |
| Pitching machines, individual, each | 2,100 – 4,450 |
| coin op, auto feed | 7,200 – 10,100 |
| Protective screens, portable, each | 370 – 505 |
| Commercial, center automated range, concrete stations with chain link, canopy netting, lighting, complete | |
| Batting cages | 20,100 – 33,100 |
| modular | 35,400 – 74,750 |
| Equipment, pitching, conveyor feed system | 8,750 – 13,000 |
| Misc. range supplies (bats, balls, etc.) | 1,060 – 1,700 |

BACKBOARDS, per vertical square foot (exterior, excluding paving)

| | |
|---------|-------------------|
| Masonry | \$20.95 – \$27.50 |
| Metal | 20.70 – 23.30 |
| Wood | 28.25 – 38.50 |

NOTE: Playground equipment, see Section UIP 13. Synthetic surfaces, see Page 3.

RECREATIONAL ENCLOSURES

The following costs are average cost ranges per square foot of complete recreational shell type enclosures or buildings including the basic tennis and handball/racquetball courts as noted, but excluding swimming pools and decks. Costs include architects' fees.

The cost for individual facilities can vary greatly depending upon the type of structure and its appointments, including the extent of lounge, refreshment, exercise and spectator areas, etc.

MINIMUM: Air supported (bubble) or light screened structures, of light translucent material with minimum lighting and plumbing.

| | COST RANGE |
|--|-------------------|
| Golf (60' to 80' clear height, incl. stations & turf) | \$21.85 – \$27.25 |
| triangular domes | 26.25 – 31.75 |
| Tennis (28' to 40' clear height, including courts) | 21.25 – 33.25 |
| stressed membrane over metal frame | 31.75 – 48.75 |
| Swimming (enclosure only, no plumbing) | 9.74 – 17.35 |
| Swimming (screen enclosure only on light frame, residential) | 12.95 – 16.50 |

LOW: Rigid steel frame with steel siding or wood frame with wood or steel siding, minimum sports lighting and plumbing, minimum restrooms, no dressing rooms or showers.

| | |
|---|-------------------|
| Tennis (20' to 28' clear height, including courts) | \$44.50 – \$56.00 |
| Handball/racquetball (court enclosure only, no plumbing) | 75.00 – 98.00 |
| exterior masonry court (court enclosure only, no H.V.A.C.) | 54.00 – 73.00 |
| Swimming (translucent plastic or screened enclosure, structural frame, no plumbing) | 29.50 – 51.00 |

AVERAGE: Rigid steel frame with insulated steel panels or masonry bearing walls, adequate sports lighting and plumbing, dressing rooms, showers.

| | |
|--|--------------------|
| Complete tennis (24' to 32' clear height, including courts) | \$64.00 – \$ 79.00 |
| Handball-racquetball facilities only (including courts) | 87.00 – 115.00 |
| Swimming (good curtain walls, plastic, glass, motorized roof, no plumbing, enclosure only) | 60.00 – 85.00 |

GOOD: Masonry bearing walls or insulated sandwich panels, good quality fixtures and lighting, lounge, snack bar, pro shop, health facilities, sauna.

| | |
|---|---------------------|
| Complete tennis (30' to 35' clear height, including courts) | \$ 83.00 – \$115.00 |
| Handball/racquetball facilities only (including courts) | 125.00 – 155.00 |
| Complete swimming facilities (natatorium buildings) | 94.00 – 190.00 |

SAUNA BATHS: Cost per square foot of floor area for prefabricated units including interior wall finish, door, heater and controls. Wall structure, exterior cover etc., are included under Interior Construction in the Segregated Cost sections or add from Unit-in-Place.

| | | | |
|------------|---------------|-------------|---------------|
| 15 sq. ft. | \$250 – \$320 | 50 sq. ft. | \$180 – \$210 |
| 25 sq. ft. | 210 – 250 | 75 sq. ft. | 150 – 180 |
| | | 100 sq. ft. | 125 – 150 |

NOTE: For separate heater costs and steam generators, see Section UIP 3.

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GREEN ADDITIONS

SECTION UIP 15

Concrete

Concrete within the building envelope needs to come from within 500 miles and contain post consumer recycled material.

| Costs Each | COM | RES | Costs/Sq. Ft. | COM | RES |
|--|------------|------------|---|------------|------------|
| Insulated concrete, Form-in-place, Expanded polystyrene, Straight, 9-1/4"x 48"x 16", 4" core | \$34.50 | \$33.50 | Foundation wall, Cast-in-place, With damp proofing, Recycled content, 3,000 psi, Reinforced, 6" thick | \$22.20 | \$19.35 |
| Corner, 9-1/4"x 60"x 16", 4" core | 41.75 | 40.00 | 8" thick | 23.40 | 20.60 |
| Angle, 9-1/4"x 52"x 16", 4" core | 39.75 | 38.75 | 10" thick | 25.00 | 22.15 |
| Insulated concrete, Form-in-place, Expanded polystyrene, Straight, 11-1/4"x 48"x 16", 6" core | 34.75 | 33.75 | 12" thick | 26.25 | 23.40 |
| Corner, 11-1/4"x 56"x 16", 6" core | 40.75 | 39.25 | Concrete wall, Cast-in-place, Recycled content, 3,000 psi, Reinforced, 6" thick | 22.05 | 19.40 |
| Angle, 11-1/4"x 44"x 16", 6" core | 36.50 | 36.00 | 8" thick | 23.00 | 20.35 |
| Tee, 11-1/4"x 44"x 16", 6" core | 38.75 | 38.00 | 10" thick | 24.70 | 22.05 |
| Insulated concrete, Form-in-place, Expanded polystyrene, Straight, 13-1/4"x 48"x 16", 8" core | 36.25 | 35.00 | 12" thick | 26.00 | 23.30 |
| Corner, 13-1/4"x 60"x 16", 8" core | 43.00 | 41.75 | Costs/V.L.F. Concrete column, Cast-in-place, Recycled content, 4,500 psi, Reinforced, 6" x 6" | \$53.00 | \$45.50 |
| Angle, 13-1/4"x 60"x 16", 8" core | 42.00 | 40.25 | 8" x 8" | 68.00 | 58.00 |
| Tee, 13-1/4"x 44"x 16", 8" core | 40.00 | 39.50 | 10" x 10" | 82.00 | 71.00 |
| Costs/Sq. Ft. Insulated concrete, Form-in-place, Reinforced, Expanded polystyrene form, 3,000 psi, 4" thick core | \$ 13.65 | \$ 13.25 | 12" x 12" | 93.00 | 79.00 |
| 3,000 psi, 6" thick core | 15.25 | 14.85 | Concrete column, Cast-in-place, Recycled content, 4,500 psi, Reinforced, 6" dia. | 46.25 | 40.75 |
| 4,000 psi, 8" thick core | 16.75 | 16.40 | 8" dia. | 48.50 | 42.75 |
| Concrete countertop, Cast in place, Recycled materials, 1-1/2" thick | 23.80 | 20.40 | 10" dia. | 53.00 | 47.00 |
| 2" thick | 31.75 | 27.25 | 12" dia. | 55.00 | 48.50 |
| Concrete countertop, Pre-cast, Various recycled materials, 1-1/2" thick | 155.00 | 160.00 | Costs/Sq. Ft. Wall, Adobe brick, 8" thick | \$27.25 | \$24.05 |
| Glass Chips, Various recycled materials, 1-1/4" thick | 185.00 | 190.00 | 12" thick | 35.25 | 32.00 |
| Paper Fiber, Various recycled materials, 1-1/8" thick | 225.00 | 225.00 | Concrete Masonry Block - 4"x8"x16" | 9.32 | 8.40 |
| Concrete slab on grade, Cast-in-place, With welded wire fabric, Recycled content, 3,000 psi, 4" thick | 4.79 | 4.42 | Reinforced Lightweight | 9.72 | 8.84 |
| 5" thick | 5.66 | 5.26 | Concrete Masonry Block - 6"x8"x16" | 10.30 | 9.34 |
| 6" thick | 6.08 | 5.69 | Reinforced Lightweight | 11.95 | 11.00 |
| Concrete slab, Elevated, Cast-in-place, Recycled content, Reinforced, 3,000 psi, 4" thick | 17.75 | 15.45 | Concrete Masonry Block - 8"x8"x16" | 12.00 | 10.85 |
| 5" thick | 18.85 | 16.50 | Reinforced Lightweight | 12.75 | 11.75 |
| 6" thick | 19.65 | 17.25 | Concrete Masonry Block - 12"x8"x16" | 17.25 | 15.60 |
| Concrete slab, Elevated, Cast-in-place, Recycled content, Reinforced, 4,500 psi, 4" thick | 19.65 | 17.35 | Reinforced Lightweight | 18.80 | 17.25 |
| 5" thick | 20.75 | 18.40 | Concrete Masonry Block - 24"x8"x16" | 34.50 | 31.25 |
| 6" thick | 22.05 | 19.70 | Reinforced Lightweight | 37.25 | 34.25 |
| 7" thick | 22.95 | 20.55 | Glass block, With reinforcement, 6"x 6"x 4" wide | 76.00 | 75.00 |
| 8" thick | 24.15 | 21.70 | 8"x 8"x 4" wide | 47.50 | 45.00 |
| 10" thick | 26.00 | 23.60 | 12"x 12"x 4" wide | 41.50 | 40.25 |
| 12" thick | 28.00 | 25.50 | Glass block, Reflective, With reinforcement, 6"x 6"x 4" wide | 52.00 | 49.25 |
| | | | 8"x 8"x 4" wide | 36.75 | 33.75 |
| | | | 12"x 12"x 4" wide | 41.50 | 40.25 |

GREEN ADDITIONS

SECTION UIP 15

WOOD, PLASTIC & COMPOSITES

WOOD: Material needs to be diverted from disposal in landfills through recycle and/or salvage and the material needs to have been salvaged, refurbished or reused within 500 miles. fifty percent of the wood-based materials and products must be certified in accordance with the Forest Stewardship councils Principles and Criteria.

PLASTIC: Plastic needs to contain post consumer recycled material and come from within 500 miles.

COMPOSITES: Composite material needs to be diverted from disposal in landfills through recycle and/or salvage and must contain post consumer recycled material within 500 miles.

Costs/Sq. Ft. **COM / RES**
 Floor framing, SFI certified, Engineered laminated veneer lumber,

| | |
|--------------------------------------|---------|
| 1-3/4"x 7-1/4" joist, 16" o.c. | \$ 5.58 |
| 1-3/4"x 7-1/4" joist, 24" o.c. | 4.32 |
| 1-3/4"x 9-1/2" joist, 16" o.c. | 6.20 |
| 1-3/4"x 9-1/2" joist, 24" o.c. | 4.78 |
| 1-3/4"x 11-7/8" joist, 16" o.c. | 7.13 |
| 1-3/4"x 11-7/8" joist, 24" o.c. | 5.69 |
| 3-1/2"x 9-1/2" joist, 16" o.c. | 11.25 |
| 3-1/2"x 9-1/2" joist, 24" o.c. | 8.55 |
| 3-1/2"x 11-7/8" joist, 16" o.c. | 13.95 |
| 3-1/2"x 11-7/8" joist, 24" o.c. | 10.55 |
| 5-1/4"x 9-1/2" joist, 16" o.c. | 17.65 |
| 5-1/4"x 9-1/2" joist, 24" o.c. | 13.30 |
| 5-1/4"x 11-7/8" joist, 16" o.c. | 20.60 |
| 5-1/4"x 11-7/8" joist, 24" o.c. | 15.55 |

Roof framing, SFI certified, Engineered laminated veneer lumber,

| | |
|---------------------------------------|---------|
| 1-3/4"x 7-1/4" rafter, 16" o.c. | \$ 5.66 |
| 1-3/4"x 7-1/4" rafter, 24" o.c. | 4.38 |
| 1-3/4"x 9-1/2" rafter, 16" o.c. | 6.30 |
| 1-3/4"x 9-1/2" rafter, 24" o.c. | 4.84 |
| 1-3/4"x 11-7/8" rafter, 16" o.c. | 7.54 |
| 1-3/4"x 11-7/8" rafter, 24" o.c. | 5.77 |
| 3-1/2"x 9-1/2" joist, 16" o.c. | 11.35 |
| 3-1/2"x 9-1/2" joist, 24" o.c. | 8.61 |
| 3-1/2"x 11-7/8" joist, 16" o.c. | 14.05 |
| 3-1/2"x 11-7/8" joist, 24" o.c. | 10.60 |
| 5-1/4"x 9-1/2" joist, 16" o.c. | 17.75 |
| 5-1/4"x 9-1/2" joist, 24" o.c. | 13.40 |
| 5-1/4"x 11-7/8" joist, 16" o.c. | 20.70 |
| 5-1/4"x 11-7/8" joist, 24" o.c. | 15.60 |

Costs/Sq. Ft. **COM** **RES**

| | | |
|---|--------|--------|
| Wall panel, Structural insulated panel (SIP), OSB both sides, | | |
| 4' x 8' x 4-1/2" thick | \$6.37 | \$6.37 |
| 4' x 8' x 6-1/2" thick | 7.11 | 7.10 |
| 4' x 8' x 8-1/4" thick | 7.98 | 7.93 |
| 4' x 8' x 10-1/8" thick | 9.04 | 8.93 |
| Roof panel, Structural insulated panel (SIP), OSB both sides, | | |
| 4' x 8' x 4-1/2" thick | 6.45 | 6.44 |
| 4' x 8' x 6-1/2" thick | 7.23 | 7.20 |
| 4' x 8' x 8-1/4" thick | 8.15 | 8.06 |
| 4' x 8' x 10-1/8" thick | 9.32 | 9.16 |

Costs/Lin. Ft.

| | | |
|--|--------|--------|
| Engineered I-Joist, Recycled content, Southern pine, | | |
| 1-1/2"x 9-1/2" | \$2.57 | \$2.47 |
| 1-1/2" x 11-7/8" | 2.82 | 2.72 |
| 1-1/2" x 14" | 3.03 | 2.92 |
| 1-3/4" x 9-1/2" | 2.66 | 2.56 |
| 1-3/4" x 11-7/8" | 2.95 | 2.86 |
| 1-3/4" x 14" | 3.30 | 3.20 |
| 1-3/4" x 16" | 3.46 | 3.36 |
| 2-5/16" x 11-7/8" | 3.57 | 3.48 |
| 2-5/16" x 14" | 3.79 | 3.69 |
| 2-5/16" x 16" | 4.07 | 3.97 |

GREEN ADDITIONS

SECTION UIP 15

THERMAL & MOISTURE PROTECTION INSULATION

Thermal protection affects the thermal and acoustical comfort of building occupants. It also has significant impact on the amount of energy used to cool and heat the building. By controlling moisture at the building envelope the longevity, and therefore the sustainability, of the building will be increased. Proper moisture protection at the building envelope, is also an important step in controlling and preventing the growth of mold, which affects the indoor air quality of buildings. Materials must contain recycled content and future recyclability; have low embodied energy which reduces the initial energy investment of the product, not contain CFCs, HCFCs or other ozone depleting substances; nor contain formaldehyde; no VOCs and no off-gassing for promoting indoor air quality.

| Costs/Sq. Ft. | COM | RES |
|---|------------|------------|
| Radiant barrier, 97% reflectivity, Double sided, Aluminum foil, Poly mesh reinforced, | | |
| 48" wide | \$.33 | \$.31 |
| 16" to 24" wide | .38 | .36 |
| Laser perforated, 97% reflectivity, 48" wide .. | .35 | .34 |
| 16" to 24" wide | .42 | .40 |
| Heavy weight, 98% reflectivity, Double sided, | | |
| Aluminum, 48" wide | .37 | .35 |
| 16" to 24" wide | .45 | .43 |
| Double bubble sided, 98% reflectivity, | | |
| 48" wide | .59 | .59 |
| 16" to 24" wide | .66 | .65 |
| Reflective roof coating, Rubberized, Water based, | | |
| White | .77 | .69 |
| Asphalt/aluminum, Silver | .68 | .61 |
| Polyester fabric, With primer and seal, Acrylic, | | |
| Clear | 1.31 | 1.24 |
| Ice/water shield flashing at roof edge | ---- | 1.30 |

GREEN ROOF SYSTEM

| Costs Each | COM / RES |
|--|------------------|
| Plant tray, Modular, Plastic, Polystyrene, | |
| 8" x 8" x 2-1/2" | \$ 5.48 |
| 8" x 12" x 2-1/2" | 5.90 |
| 22" x 11" x 2-1/2" | 13.05 |
| 13" x 15" x 3-1/2" | 14.70 |
| Recycled content, Coconut coir fiber, | |
| 11" x 21" | 16.45 |

| Costs/Sq. Ft. | COM | RES |
|---|------------|------------|
| Plant tray, Barrier, Root barrier, Bio degradable fabric, Trifluralin, | | |
| 24' x 100' | | \$5.85 |
| Plant tray, Screen, Weed barrier, Moisture retention fabric, Micro-perforated film, | | |
| 6' x 250' | | 5.79 |
| Plant Growing Media, Hoisted up to 5 story, | | |
| Clay, 2" thick | | 1.19 |
| Clay, 4" thick | | 2.37 |
| Clay, 6" thick | | 3.40 |
| Clay, 8" thick | | 4.53 |
| Recycled content, 2" thick | | 1.61 |
| Recycled content, 4" thick | | 3.24 |
| Recycled content, 6" thick | | 4.80 |
| Recycled content, 8" thick | | 6.39 |
| Sand and Gravel, 2" thick | | .86 |
| Sand and Gravel, 4" thick | | 1.70 |
| Sand and Gravel, 6" thick | | 2.36 |
| Sand and Gravel, 8" thick | | 3.14 |
| Roof paver, Walkway pads, Recycled rubber tire, | | |
| 19-1/2" x 19-1/2" | | 10.80 |
| Walkway squares, Recycled rubber, | | |
| 16" x 16" x 1" thick | | 11.95 |
| Costs/Lin. Ft. | | |
| Plant tray, Edge restraint, Treated lumber, Wood, | | |
| 4" x 4" | | \$5.17 |
| 4" x 6" | | 6.36 |
| Costs/Sq. Ft. | COM | RES |
| Insulation, Batt, Foil-faced, Non-rigid, | | |
| Walls, or Floor, 3-1/2" Thick, R11 | \$.93 | \$.89 |
| Insulation, Blanket, Unfaced, Non-rigid, | | |
| Walls or ceiling, 3-1/2", R11 | .97 | .92 |
| Insulation, Blown-in, Wall, Cellulose, | | |
| 3.5" thick, R-13 | 2.36 | 2.20 |
| Insulation, Blown-in, Wall, Fiberglass, | | |
| 3.5" thick, R-9 | 2.34 | 2.18 |
| Insulation, Blown-in, Ceiling, Cellulose, | | |
| 6" thick, R-22 | 1.06 | 1.04 |
| Insulation, Blown-in, Ceiling, Fiberglass, | | |
| 6" thick, R-13 | .92 | .90 |
| Insulation, Roof, Straw, Wire tied, 2-wire, | | |
| Rice, 4.0 Lbs./Cu. Ft., 15" thick | .58 | .55 |
| Insulation, Wall, Straw, Wire tied, 2-wire, | | |
| Rice, 4.0 Lbs./Cu. Ft., 15" thick | .48 | .45 |

GREEN ADDITIONS

SECTION UIP 15

DOOR & WINDOW OPENINGS

Openings can contribute Green credits by meeting the Minimum Energy Performance, Daylight & Views, Material Reuse and Regional Material requirements. Openings are considered part of the building envelope system design and can contribute to the Minimum Energy Performance. The Daylight requirement specifies a minimum glazing factor for a specific percentage of all regularly occupied areas. The Views requirement specifies direct line of sight for a specific percentage of all regularly occupied areas. All materials are to be extracted, processed and manufactured within 500 mile of the building site. Opening components must also be NFRC certified and contribute to the reduction in energy to be considered Green.

| Costs Each | COM / RES | |
|---|------------------|---------|
| Skylight, Solar tube kit, With 4' flexible tube, Acrylic dome, | | |
| 10" diameter | \$430.00 | |
| 14" diameter | 485.00 | |
| 21" diameter | 625.00 | |
| Skylight, Solar tube kit, With 4' rigid tube and fresnel diffuser, Acrylic dome, | | |
| 10" diameter | 470.00 | |
| 14" diameter | 600.00 | |
| Skylight, Solar tube kit, With 6' rigid tube and fresnel ceiling diffuser, Acrylic dome, 21" diameter | 790.00 | |
| Costs/Lin. Ft. | | |
| Weatherstripping, Door, Vinyl gasket | \$3.73 | |
| Weatherstripping, Window, Rubber, 3/4" wide, 7/16" thick. | 3.34 | |
| Costs/Sq. Ft. | | |
| Translucent wall panel, With aluminium frame, Triple wall, 48" wide x 5/8" thick polycarbonate panels, | | |
| Clear, 8' high | \$27.50 | \$27.00 |
| 48" wide x 5/8" thick polycarbonate panels, | | |
| White, 8' high | 28.25 | 27.50 |
| 6-wall, 48" wide x 1" thick polycarbonate panels, | | |
| Clear, 8' high | 31.50 | 31.00 |
| 6-wall, 48" wide x 1" thick polycarbonate panels, | | |
| White, 8' high | 32.25 | 31.75 |
| Skyroof, Atrium, Curb mounted, Single pitch, With aluminium frame, 5/8" clear triple wall polycarbonate, | | |
| 8'-0" wide. | 38.00 | 37.50 |
| 5/8" white triple wall polycarbonate, | | |
| 8'-0" wide. | 38.50 | 38.00 |
| 1" clear 6-wall polycarbonate, 8'-0" wide | 41.75 | 41.50 |
| 1" white 6-wall polycarbonate, 8'-0" wide. | 42.50 | 42.25 |
| Skyroof, Atrium, Curb mounted, Double pitch, With aluminium frame, 5/8" clear triple wall polycarbonate, | | |
| 16'-0" wide. | 39.00 | 38.75 |
| 5/8" white triple wall polycarbonate, | | |
| 8'-0" wide. | 39.50 | 39.50 |
| 1" clear 6-wall polycarbonate, 8'-0" wide | 43.50 | 43.50 |
| 1" white 6-wall polycarbonate, 8'-0" wide. | 44.75 | 44.75 |

FINISHES

The Low-Emitting Materials requirement limits the amount of VOC's that can be out gassed for specific product and the use of urea-formaldehyde resins. All materials are to be extracted, processed and manufactured within 500 mile of the building site. Opening components must also be NFRC certified and contribute to the reduction in energy to be considered Green.

| Costs/Sq. Ft. | COM / RES |
|---|------------------|
| Sealer, Concrete floor, Semi-transparent, Acrylic, Colored, Semi-gloss finish, 2 coats, Spray | \$1.10 |
| Paint, Floor, Interior, Concrete, Low VOC, 1 coat finish, Sprayed | .37 |
| Paint, Floor, Interior, Metal, Low VOC, Primer and finish coat, Sprayed | .77 |
| Paint, Wall, Interior, Low VOC latex paint, Average, Brush/Roller/Spray, 2 Finish coats, Flatwall | .56 |
| 2 finish coats, Semi-gloss enamel | .60 |
| Paint, Ceiling, Interior, Low VOC latex paint, Average, Brush/Roller/Spray, 2 Finish coats, Flatwall | .57 |
| 2 finish coats, Semi-gloss enamel. | .60 |
| Paint, Wall, Interior, Zero VOC latex paint, Average, Brush/Roller/Spray, Primer and Finish coat, Flatwall | .61 |
| Primer and Finish coat, Semi-gloss enamel. | .65 |
| Paint, Ceiling, Interior, Zero VOC latex paint, Average, Brush/Roller/Spray, Primer and Finish coat, Flatwall | .66 |
| Primer and Finish coat, Semi-gloss enamel. | .71 |
| Wood finish, Low VOC, Polyurethane, Clear, 1 coat, Brushed | .88 |
| Wood finish, Low VOC, Lacquer, Clear, 3 coat, Brushed | 2.14 |
| Metal stud framing, Recycled Content, Non-load bearing, Galvanized, 25 Ga, | |
| 1-5/8" wide, 16" o.c. | 1.83 |
| 1-5/8" wide, 24" o.c. | 1.37 |
| 2-1/2" wide, 16" o.c. | 2.05 |
| 2-1/2" wide, 24" o.c. | 1.55 |
| 4" wide, 16" o.c. | 2.31 |
| 4" wide, 24" o.c. | 1.75 |
| 6" wide, 16" o.c. | 2.32 |
| 6" wide, 24" o.c. | 1.76 |
| Sealer, Concrete floor, Semi-transparent, Acrylic, Colored, Semi-gloss finish, 2 coats, Spray | 1.07 |
| Paint, Floor, Interior, Concrete, Low VOC, 1 coat finish, Sprayed | .37 |
| Paint, Floor, Interior, Metal, Low VOC, Primer and finish coat, Sprayed | .77 |
| Paint, Wall, Interior, Zero VOC latex paint, Average, Brush/Roller/Spray, Primer and Finish coat, Flatwall | .61 |
| Primer and Finish coat, Semi-gloss enamel. | .65 |
| Paint, Ceiling, Interior, Zero VOC latex paint, Average, Brush/Roller/Spray, Primer and Finish coat, Flatwall | .66 |
| Primer and Finish coat, Semi-gloss enamel. | .71 |

GREEN ADDITIONS

SECTION UIP 15

SPECIALTIES

This area is very broad and encompasses many items. Material or building components typically addressed in this section would be specialty items such as Green Power generation equipment, rain water harvesting, signage, bathroom hand dryers and site features to control heat island effects.

| Costs Each | COM | RES |
|---|----------|------------|
| Pellet stove, Freestanding, With glass door and 3" direct vent, 40,000 Btu, Heavy steel, 24"x 21"x 20" H. | ---- | \$3,550.00 |
| 45,000 Btu, Heavy steel, 22"x 27"x 29" H. | ---- | 3,900.00 |
| With ceramic glass door, 50,000 Btu, Heavy steel, 26"x 31"x 33-1/4" H | ---- | 4,600.00 |
| Fireplace insert, Wood burning, With cast iron glass door, blower and 6" dia. flue liner, 69,600 BTU, Steel, Black finish | ---- | 2,290.00 |
| With steel glass bay door and blower, 70,000 BTU, Steel, Black finish | ---- | 4,175.00 |
| Automatic high efficient hand dryer, Surface mounted, With infra red sensor, High air flow, 120 V, Metal cover, Enamel finish, 11-3/4" x 12-3/4" x 6-3/4" D | \$700.00 | ---- |
| Satin stainless finish, 11-3/4" x 12-3/4" x 6-3/4" D | 840.00 | ---- |
| Exit sign, Door mounted, Photoluminescent, Rigid plastic, 4" x 6" x 1/8" thick | 35.50 | 32.50 |
| Exit egress sign, With directional graphic, Photoluminescent, Rigid plastic, 8" x 4-1/2" x 5/8" thick | 52.00 | 48.25 |
| Egress stair signage, Wall mounted, Projecting, Double sided, With graphic, Aluminum, Photoluminescent, 6" x 5" x 3-1/2" projection | 53.00 | 48.25 |
| Exit sign, Photoluminescent, 15" x 8-1/2" x 1" thick | 100.00 | 97.00 |
| With directional arrows, 15" x 8-1/2" x 1" thick | 110.00 | 105.00 |
| 8" lettering, Plastic, 17" x 10" x 1/2" thick | 170.00 | 165.00 |
| With directional arrows, Metal frame, 15-1/4" x 8-1/4" x 1" thick | 180.00 | 175.00 |
| 8" lettering, Plastic, 17" x 10" x 1/2" thick | 245.00 | 240.00 |
| 100 ft visibility, With directional arrows, 16" x 8-5/8" x 1/2" thick | 275.00 | 265.00 |
| Ceiling mounted, Double sided, With directional arrows, Metal frame, Photoluminescent, 15-1/4" x 8-1/4" x 1" thick | 325.00 | 320.00 |

GLAZING/WINDOW SHADING

| Costs Each | COM | RES |
|---|------|----------|
| Awning, Fixed, Aluminum, Baked enamel finish, 2' projection, 3' wide | ---- | \$470.00 |
| Awning, Fixed, Aluminum, Baked enamel finish, 3' projection, 6' wide | ---- | 605.00 |
| Costs/Sq. Ft. | | |
| Awning, Retractable, Manual, Standard vinyl, 8' projection, Up to 10' wide | ---- | 32.50 |
| Custom acrylic fabric, 8' projection, Up to 10' wide | ---- | 34.50 |
| Awning, Retractable, Motorized, Standard vinyl, 8' projection, Up to 10' wide | ---- | 40.25 |
| Custom acrylic fabric, 8' projection, Up to 10' wide | ---- | 42.25 |

SPECIAL CONSTRUCTION

| Costs Each | COM / RES |
|---|-------------|
| Solar hydronic panel, Residential, Roof mounted, With 50 gal tank, photovoltaic pump and piping, Flat lexan/anodized aluminum frame panel, 20" x 144" | \$ 2,750.00 |
| Solar hydronic panel, Flat roof tilt mounted, With 52 gal steel tank, single heat exchanger, pump and piping, Flat glass/anodized aluminum frame panel, 88" x 96" | 4,575.00 |
| Solar panel array. Photovoltaic, Grid-tied system, Flush mounted rack, Sloped roof, 2 kWh capacity. | 8,000.00 |
| Solar panel array. Photovoltaic, Grid-tied system, Flush mounted rack, Sloped roof, 4 kWh capacity. | 15,000.00 |
| Solar water heater, System including, Collectors / Tank / Controller / Pump / Valves / Piping / Insulation / etc., 120 gallon | 9,550.00 |
| Solar water heater, System including, Collectors / Tank / Controller / Pump / Valves / Piping / Insulation / etc., 80 gallon | 8,050.00 |
| Solar panel array. Photovoltaic, Grid-tied system, Flush mounted rack, Sloped roof, 6 kWh capacity. | 20,100.00 |
| Solar panel array. Photovoltaic, Grid-tied system, Flush mounted rack, Sloped roof, 8 kWh capacity. | 25,600.00 |
| Solar panel array. Photovoltaic, Grid-tied system, Low tilt (30deg) mounted rack, Flat roof, 10 kWh capacity | 38,200.00 |
| Solar panel array. Photovoltaic, Grid-tied system, Low tilt (30deg) mounted rack, Flat roof, 15 kWh capacity | 55,000.00 |
| Solar panel array. Photovoltaic, Grid-tied system, Low tilt (30deg) mounted rack, Flat roof, 50 kWh capacity | 158,000.00 |
| Solar panel array. Photovoltaic, Grid-tied system, Low tilt (30deg) mounted rack, Flat roof, 75 kWh capacity | 232,000.00 |
| Roofing, Solar photovoltaic, Tile, Slate, Grid-tied system, 2kWh capacity | 21,900.00 |

GREEN ADDITIONS

SECTION UIP 15

SPECIAL CONSTRUCTION CONT.

| Costs Each | COM / RES |
|---|-------------|
| Roofing, Solar photovoltaic, Shingles, Grid-tied system, 2kWh capacity | \$13,700.00 |
| Roofing, Solar photovoltaic, Shingles, Grid-tied system, 4kWh capacity | 26,200.00 |
| Wind turbine generator, Off-grid, With 33' guyed pole, 9' rotor blade, 24/36/48 VDC, 1.0 Kwatt | 20,700.00 |
| Grid-tied, With inverter and 45' tower, 12' rotor blade, 120/240V, 1.8 Kwatt | 29,300.00 |
| Electric backup power storage, With inverter and steel enclosure, 8-200aH 6V batteries, 120VAC, 9.6 KwH. | 8,600.00 |
| Electric backup power storage, Add-on with steel enclosure, 8-200aH 6V batteries, 240VAC, 9.6 KwH. | 3,550.00 |
| Wind turbine generator, Grid-tied, With inverter and 60' tower, 12' rotor blade, 120/240V, 2.4 Kwatt | 61,750.00 |
| Electric backup power storage, With inverter and steel enclosure, 4-200aH 6V batteries, 120VAC, 4.8 KwH. | 7,400.00 |
| 12-200aH 6V batteries, 120VAC, 14.4 KwH. | 8,950.00 |
| 12-200aH 6V batteries, 240VAC, 14.4 KwH. | 5,450.00 |

PLUMBING & FIXTURES

Plumbing has a very broad impact on Green credits primarily covering the efficient management, use and reuse of water and energy use. Typically items covered may include Water Efficient Landscaping, Innovative Waste Water Technologies, Water Use Reduction, Minimum Energy Performance, Recycled Content, On-site Renewable Energy and Fundamental Refrigerant Management.

| Costs Each | COM | RES |
|---|----------|----------|
| Reverse Osmosis/Deionization water purification system, 3 stage, 24 gpd | \$230.00 | \$215.00 |
| 3 stage, 36 gpd | 235.00 | 220.00 |
| 3 stage, 50 gpd | 240.00 | 225.00 |
| 3 stage, 75 gpd | 245.00 | 230.00 |
| 3 stage, 100 gpd | 315.00 | 305.00 |
| 4 stage, 75 gpd | 395.00 | 385.00 |
| 5 stage, 50 gpd | 515.00 | 500.00 |
| 5 stage, 75 gpd | 530.00 | 520.00 |
| 6 stage, 50 gpd | 555.00 | 545.00 |
| 6 stage, 75 gpd | 565.00 | 550.00 |
| Greywater system, For water closet, With pump and filter, 5-1/2 gallon tank, 12VDC | ----- | 540.00 |
| Greywater tank, Residential, Up to 3 persons, 39 gallons, 22-1/2" dia. x 46"H | ----- | 3,825.00 |
| Up to 6 persons, 66 gallon tank, 22-1/2" dia. x 60"H. | ----- | 4,225.00 |
| Up to 9 persons, 92 gallon tank, 30-1/2" dia. x 53"H. | ----- | 4,750.00 |
| Up to 12 persons, 119 gallon tank, 30-1/2" dia. x 60"H. | ----- | 5,100.00 |

PLUMBING & FIXTURES

| Costs Each | COM | RES |
|---|-------|------------|
| Atmospheric water system, Generator, 110v 50Hz, 3.17 gallon capacity | ----- | \$1,850.00 |
| 3.6 gallon capacity | ----- | 2,180.00 |
| Faucet aerator, Kitchen, 2 spray setting, With pause valve, Chrome finish, 1.5 GPM | ----- | 21.50 |
| Showerhead, Shutoff valve, Brass, Chrome finish. | ----- | 24.50 |

| Costs/Lin. Ft. | COM | RES |
|--|---------|---------|
| Insulation, Pipe, Fiberglass, P/c with ssl, 1/2"o.d. x 1/2"wall | \$ 6.45 | \$ 5.54 |
| 3/4"o.d. x 1/2"wall | 6.99 | 6.06 |
| 1"o.d. x 1/2"wall | 7.28 | 6.31 |
| 1-1/4"o.d. x 1/2"wall | 7.61 | 6.61 |
| 1-1/2"o.d. x 1/2"wall | 7.96 | 6.94 |
| 2"o.d. x 1/2"wall | 8.50 | 7.39 |
| 2-1/2"o.d. x 1/2"wall | 9.19 | 8.02 |
| 1/2"o.d. x 1"wall | 6.80 | 5.86 |
| 3/4"o.d. x 1"wall | 7.47 | 6.51 |
| 1"o.d. x 1"wall | 7.88 | 6.88 |
| 1-1/4"o.d. x 1"wall | 8.73 | 7.74 |
| 1-1/2"o.d. x 1"wall | 9.41 | 8.39 |
| 2"o.d. x 1"wall | 9.96 | 9.05 |
| 2-1/2"o.d. x 1"wall | 10.65 | 9.64 |
| 3"o.d. x 1"wall | 11.15 | ----- |
| 4"o.d. x 1"wall | 11.90 | ----- |
| 1/2"o.d. x 1-1/2"wall | 8.47 | 7.56 |
| 3/4"o.d. x 1-1/2"wall | 9.22 | 8.30 |
| 1"o.d. x 1-1/2"wall | 9.60 | 8.65 |
| 1-1/4"o.d. x 1-1/2"wall | 10.10 | 9.10 |
| 1-1/2"o.d. x 1-1/2"wall | 10.55 | 9.57 |
| 2"o.d. x 1-1/2"wall | 11.15 | 10.10 |
| 2-1/2"o.d. x 1-1/2"wall | 11.75 | 10.60 |
| 3"o.d. x 1-1/2"wall | 12.35 | ----- |
| 4"o.d. x 1-1/2"wall | 13.45 | ----- |
| 1/2"o.d. x 2"wall | 10.10 | 9.22 |
| 3/4"o.d. x 2"wall | 10.90 | 10.00 |
| 1"o.d. x 2"wall | 11.40 | 10.45 |
| 1-1/4"o.d. x 2"wall | 11.80 | 10.90 |
| 1-1/2"o.d. x 2"wall | 12.55 | 11.60 |
| 2"o.d. x 2"wall | 13.35 | 12.35 |
| 2-1/2"o.d. x 2"wall | 14.15 | 13.10 |
| 3"o.d. x 2"wall | 15.25 | ----- |
| 4"o.d. x 2"wall | 16.60 | ----- |
| Insulation, Pipe, Rubber, Closed cell foam, 3/8"o.d. x 3/8"wall | 6.37 | 5.32 |
| 1/2"o.d. x 3/8"wall | 6.70 | 5.62 |
| 5/8"o.d. x 3/8"wall | 6.94 | 5.84 |
| 3/4"o.d. x 3/8"wall | 7.09 | 5.97 |
| 7/8"o.d. x 3/8"wall | 7.33 | 6.18 |
| 1-1/8"o.d. x 3/8"wall | 7.68 | 6.48 |
| 1-3/8"o.d. x 3/8"wall | 7.94 | 6.74 |
| 1-5/8"o.d. x 3/8"wall | 8.37 | 7.15 |
| 2-1/8"o.d. x 3/8"wall | 9.05 | 7.81 |
| 3/8"o.d. x 1/2"wall | 7.00 | 5.92 |
| 1/2"o.d. x 1/2"wall | 7.27 | 6.18 |
| 5/8"o.d. x 1/2"wall | 7.47 | 6.37 |
| 3/4"o.d. x 1/2"wall | 7.59 | 6.48 |
| 7/8"o.d. x 1/2"wall | 7.78 | 6.65 |
| 1-1/8"o.d. x 1/2"wall | 8.15 | 6.99 |
| 1-3/8"o.d. x 1/2"wall | 8.52 | 7.32 |
| 1-5/8"o.d. x 1/2"wall | 9.00 | 7.78 |

GREEN ADDITIONS

SECTION UIP 15

PLUMBING & FIXTURES

| Costs/Lin. Ft. | COM | RES | Costs/Each | COM | RES |
|---|---------|--------|--|---------|---------|
| Insulation, Pipe, Rubber, Closed cell foam, | | | Pipe fitting cover, Insulated, Pvc, Ips, Tee, #2, | | |
| 2-1/8"o.d. x 1/2"wall | \$10.05 | \$8.76 | 6"o.d. x 1/2"wall | 42.50 | 40.00 |
| 2-3/8"o.d. x 1/2"wall | 10.85 | 9.59 | 7"o.d. x 1/2"wall | 45.75 | 43.50 |
| 2-5/8"o.d. x 1/2"wall | 11.45 | 10.15 | 8"o.d. x 1/2"wall | 57.00 | 55.00 |
| 3-1/8"o.d. x 1/2"wall | 12.50 | 11.15 | 9"o.d. x 1/2"wall | 61.00 | 59.00 |
| 3-1/2"o.d. x 1/2"wall | 13.10 | 11.70 | 10"o.d. x 1/2"wall | 66.00 | 64.00 |
| 4-1/8"o.d. x 1/2"wall | 15.40 | 13.95 | 11"o.d. x 1/2"wall | 73.00 | 71.00 |
| 4-1/2.d. x 1/2"wall | 16.15 | 14.70 | Pipe fitting cover, Insulated, Pvc, Ips, Mechanical groove, 90 | | |
| 5/8"o.d. x 3/4"wall | 8.17 | 7.07 | degree elbow, | | |
| 7/8"o.d. x 3/4"wall | 8.77 | 7.64 | 2"o.d. | 22.10 | 20.80 |
| 1-1/8"o.d. x 3/4"wall | 9.67 | 8.54 | 2-1/2"o.d. | 23.05 | 21.75 |
| 1-3/8"o.d. x 3/4"wall | 10.25 | 9.13 | 3"o.d. | 26.75 | 25.50 |
| 1-5/8"o.d. x 3/4"wall | 11.60 | 10.45 | 4"o.d. | 31.50 | 30.50 |
| 2-1/8"o.d. x 3/4"wall | 13.05 | 11.85 | 5"o.d. | 36.25 | 35.25 |
| 5/8"o.d. x 1"wall | 10.15 | 9.08 | 6"o.d. | 43.75 | 43.00 |
| 7/8"o.d. x 1"wall | 11.60 | 10.55 | 8"o.d. | 55.00 | 53.00 |
| 1-1/8"o.d. x 1"wall | 12.70 | 11.70 | 10"o.d. | 71.00 | 71.00 |
| 1-3/8"o.d. x 1"wall | 13.85 | 12.80 | 12"o.d. | 110.00 | 105.00 |
| 1-5/8"o.d. x 1"wall | 14.85 | 13.85 | Pipe fitting cover, Insulated, Pvc, Ips, Mechanical groove, 45 | | |
| 2-1/8"o.d. x 1"wall | 16.90 | 15.90 | degree elbow, #9, | | |
| Costs Each | | | 2"o.d. | 21.45 | 20.15 |
| Pipe fitting cover, Insulated, Pvc, Ips, 90 degree elbow, #2, | | | 2-1/2"o.d. | 21.90 | 20.60 |
| 3/8"o.d. x 1/2"wall | 9.77 | 8.21 | 3"o.d. | 26.00 | 24.85 |
| 1/2"o.d. x 1/2"wall | 10.00 | 8.45 | 4"o.d. | 30.75 | 29.75 |
| 3"o.d. x 1/2"wall | 14.15 | 12.35 | 5"o.d. | 35.50 | 34.25 |
| 3-1/2"o.d. x 1/2"wall | 15.00 | 13.10 | 6"o.d. | 42.50 | 41.50 |
| 4"o.d. x 1/2"wall | 16.15 | 14.20 | 8"o.d. | 52.00 | 51.00 |
| Pipe fitting cover, Insulated, Pvc, Ips, 45 degree elbow, #2, | | | 10"o.d. | 65.00 | 64.00 |
| 3/8"o.d. x 1/2"wall | 9.77 | 8.21 | 12"o.d. | 92.00 | 92.00 |
| 1/2"o.d. x 1/2"wall | 10.00 | 8.45 | Pipe fitting cover, Insulated, Pvc, Ips, Mechanical groove, Tee, | | |
| 3"o.d. x 1/2"wall | 14.15 | 12.35 | 2"o.d. | 35.00 | 33.25 |
| 3-1/2"o.d. x 1/2"wall | 15.00 | 13.10 | 2-1/2"o.d. | 37.00 | 35.00 |
| 4"o.d. x 1/2"wall | 16.15 | 14.20 | 3"o.d. | 41.00 | 39.00 |
| Pipe fitting cover, Insulated, Pvc, Ips, 45 or 90 degree elbow, #4, | | | 4"o.d. | 53.00 | 52.00 |
| 3/4"o.d. x 1/2"wall | 10.30 | 8.68 | 5"o.d. | 60.00 | 59.00 |
| 1"o.d. x 1/2"wall | 10.55 | 8.88 | 6"o.d. | 71.00 | 69.00 |
| 1-1/4"o.d. x 1/2"wall | 10.90 | 9.22 | 8"o.d. | 83.00 | 82.00 |
| 1-1/2"o.d. x 1/2"wall | 11.30 | 9.53 | 10"o.d. | 100.00 | 100.00 |
| 2"o.d. x 1/2"wall | 12.15 | 10.35 | 12"o.d. | 125.00 | 125.00 |
| 2-1/2"o.d. x 1/2"wall | 13.05 | 11.30 | Costs/Lin. Ft. | | |
| 5"o.d. x 1/2"wall | 20.85 | 18.90 | Pipe cover, Jacket, Pvc, Ips, Cc with ssl, | | |
| 6"o.d. x 1/2"wall | 24.30 | 22.35 | 1"o.d. | \$ 6.07 | \$ 5.40 |
| 7"o.d. x 1/2"wall | 27.00 | 25.00 | 2"o.d. | 6.75 | 6.00 |
| 8"o.d. x 1/2"wall | 32.50 | 30.75 | 3"o.d. | 7.48 | 6.65 |
| 9"o.d. x 1/2"wall | 37.00 | 35.00 | 4"o.d. | 8.41 | 7.50 |
| 10"o.d. x 1/2"wall | 40.25 | 38.25 | 1-1/2"o.d. | 6.38 | 5.68 |
| 11"o.d. x 1/2"wall | 48.75 | 46.75 | 2-1/2"o.d. | 7.06 | 6.26 |
| Pipe fitting cover, Insulated, Pvc, Ips, Tee, #2, | | | 3-1/2"o.d. | 7.91 | 7.05 |
| 3/8"o.d. x 1/2" wall | 14.55 | 12.25 | 4-1/2"o.d. | 8.83 | 7.88 |
| 1/2"o.d. x 1/2"wall | 14.70 | 12.40 | 4-3/4"o.d. | 9.33 | 8.34 |
| 3/4"o.d. x 1/2"wall | 15.30 | 12.95 | 5-1/2"o.d. | 9.61 | 8.57 |
| 1"o.d. x 1/2"wall | 15.60 | 13.25 | 5-3/4"o.d. | 9.97 | 8.89 |
| 1-1/4"o.d. x 1/2"wall | 16.45 | 14.05 | 6-1/2"o.d. | 10.45 | 9.35 |
| 1-1/2"o.d. x 1/2"wall | 16.85 | 14.35 | 6-3/4"o.d. | 11.00 | 9.88 |
| 2"o.d. x 1/2"wall | 17.95 | 15.45 | 7-1/4"o.d. | 11.80 | 10.60 |
| 2-1/2"o.d. x 1/2"wall | 19.40 | 16.80 | 8-1/2"o.d. | 12.25 | 10.95 |
| 3"o.d. x 1/2"wall | 20.75 | 18.05 | 8-3/4"o.d. | 12.80 | 11.45 |
| 3-1/2"o.d. x 1/2"wall | 22.00 | 19.30 | | | |
| 4"o.d. x 1/2"wall | 24.30 | 21.65 | | | |
| 5"o.d. x 1/2"wall | 29.75 | 27.00 | | | |

GREEN ADDITIONS

SECTION UIP 15

PLUMBING & FIXTURES

| Costs/Lin. Ft. | COM | RES | Costs/Lin. Ft. | COM | RES |
|---|---------|---------|--|---------|---------|
| Pipe cover, Jacket, Aluminum, Ips, Cc with ssl, Smooth, 16mil, | | | Pipe cover, Jacket, Aluminum, Ips, Cc with ssl, Stucco embossed, 20mil, 1-1/2"o.d. | | |
| 1-1/2"o.d. | \$ 8.03 | \$ 6.87 | 2"o.d. | \$ 8.43 | \$ 7.29 |
| 2"o.d. | 8.58 | 7.39 | 2-1/2"o.d. | 9.07 | 7.90 |
| 2-1/2"o.d. | 9.00 | 7.76 | 3"o.d. | 9.53 | 8.32 |
| 3"o.d. | 9.45 | 8.17 | 3-1/2"o.d. | 10.05 | 8.80 |
| 3-1/2"o.d. | 9.92 | 8.61 | 4"o.d. | 10.55 | 9.28 |
| 4"o.d. | 10.40 | 9.08 | 4-1/2"o.d. | 11.15 | 9.84 |
| 4-1/2"o.d. | 11.05 | 9.70 | 5-1/2"o.d. | 11.90 | 10.55 |
| 5-1/2"o.d. | 11.95 | 10.50 | 7"o.d. | 12.90 | 11.50 |
| 7"o.d. | 13.30 | 11.75 | 8"o.d. | 14.40 | 12.85 |
| 8"o.d. | 14.20 | 12.55 | 9"o.d. | 15.40 | 13.80 |
| 9"o.d. | 15.20 | 13.45 | 10"o.d. | 16.45 | 14.80 |
| 10"o.d. | 16.10 | 14.35 | 11"o.d. | 17.55 | 15.75 |
| 11"o.d. | 17.00 | 15.15 | 12"o.d. | 18.50 | 16.75 |
| 12"o.d. | 18.05 | 16.10 | 13"o.d. | 19.70 | 17.85 |
| 13"o.d. | 19.15 | 17.10 | 15"o.d. | 20.90 | 19.00 |
| 15"o.d. | 20.60 | 18.40 | 15-1/2"o.d. | 22.45 | 20.35 |
| 15-1/2"o.d. | 21.40 | 19.15 | | 23.40 | 21.25 |
| Pipe cover, Jacket, Aluminum, Ips, Cc with ssl, Stucco embossed, 16mil, | | | | | |
| 1-1/2"o.d. | 8.08 | 6.93 | Costs Each | | |
| 2"o.d. | 8.65 | 7.46 | Pipe fitting cover, Insulated, Aluminum, Ips, 90 degree elbow, | | |
| 2-1/2"o.d. | 9.02 | 7.79 | 1-1/2"o.d. | \$14.45 | \$12.95 |
| 3"o.d. | 9.54 | 8.26 | 2"o.d. | 15.20 | 13.70 |
| 3-1/2"o.d. | 10.00 | 8.71 | 2-1/2"o.d. | 16.50 | 15.00 |
| 4"o.d. | 10.55 | 9.19 | 3"o.d. | 17.10 | 15.55 |
| 4-1/2"o.d. | 11.15 | 9.82 | 3-1/2"o.d. | 18.60 | 17.10 |
| 5-1/2"o.d. | 12.10 | 10.65 | 4"o.d. | 20.35 | 18.90 |
| 7"o.d. | 13.45 | 11.90 | 4-1/2"o.d. | 23.15 | 21.65 |
| 8"o.d. | 14.40 | 12.70 | 5-1/2"o.d. | 29.25 | 27.75 |
| 9"o.d. | 15.35 | 13.65 | 7"o.d. | 32.25 | 31.00 |
| 10"o.d. | 16.30 | 14.55 | 8"o.d. | 34.75 | 33.50 |
| 11"o.d. | 17.20 | 15.35 | 9"o.d. | 42.75 | 41.75 |
| 12"o.d. | 18.35 | 16.35 | 10"o.d. | 43.75 | 42.75 |
| 13"o.d. | 19.40 | 17.35 | 11"o.d. | 50.00 | 49.00 |
| 15"o.d. | 20.85 | 18.65 | 12"o.d. | 63.00 | 62.00 |
| 15-1/2"o.d. | 21.65 | 19.45 | 13"o.d. | 65.00 | 65.00 |
| Pipe cover, Jacket, Aluminum, Ips, Cc with ssl, Smooth, 20mil, | | | 13-1/2"o.d. | 77.00 | 76.00 |
| 1-1/2"o.d. | 8.38 | 7.24 | 14"o.d. | 78.00 | 77.00 |
| 2"o.d. | 8.98 | 7.80 | Pipe fitting cover, Insulated, Aluminum, Ips, 45 degree elbow, | | |
| 2-1/2"o.d. | 9.44 | 8.23 | 1-1/2"o.d. | 14.20 | 12.80 |
| 3"o.d. | 9.94 | 8.69 | 2"o.d. | 14.95 | 13.45 |
| 3-1/2"o.d. | 10.45 | 9.18 | 2-1/2"o.d. | 15.65 | 14.15 |
| 4"o.d. | 11.00 | 9.72 | 3"o.d. | 16.85 | 15.35 |
| 4-1/2"o.d. | 11.75 | 10.40 | 3-1/2"o.d. | 17.60 | 16.05 |
| 5-1/2"o.d. | 12.80 | 11.35 | 4"o.d. | 18.50 | 16.95 |
| 7"o.d. | 14.20 | 12.70 | 4-1/2"o.d. | 19.95 | 18.40 |
| 8"o.d. | 15.20 | 13.60 | 5-1/2"o.d. | 25.00 | 23.65 |
| 9"o.d. | 16.25 | 14.60 | 7"o.d. | 27.50 | 26.00 |
| 10"o.d. | 17.30 | 15.55 | 8"o.d. | 31.50 | 30.00 |
| 11"o.d. | 18.30 | 16.45 | 9"o.d. | 35.25 | 34.00 |
| 12"o.d. | 19.45 | 17.60 | 10"o.d. | 41.25 | 39.75 |
| 13"o.d. | 20.65 | 18.70 | 11"o.d. | 45.25 | 43.75 |
| 15"o.d. | 22.20 | 20.05 | 12"o.d. | 50.00 | 49.25 |
| 15-1/2"o.d. | 23.10 | 20.95 | 13"o.d. | 56.00 | 55.00 |
| | | | 13-1/2"o.d. | 68.00 | 67.00 |
| | | | 14"o.d. | 74.00 | 73.00 |

GREEN ADDITIONS

SECTION UIP 15

PLUMBING & FIXTURES

| Costs Each | COM | RES |
|--|-------|-------|
| Pipe fitting cover, Insulated, Aluminum, Ips, Tee, | | |
| 1-1/2"o.d. | 37.50 | 35.75 |
| 2"o.d. | 38.00 | 36.25 |
| 2-1/2"o.d. | 38.50 | 37.00 |
| 3"o.d. | 39.00 | 37.25 |
| 3-1/2"o.d. | 39.50 | 37.75 |
| 4"o.d. | 40.00 | 38.25 |
| 4-1/2"o.d. | 41.50 | 39.50 |
| 5-1/2"o.d. | 46.50 | 45.00 |
| 7"o.d. | 48.75 | 47.00 |
| 8"o.d. | 50.00 | 48.25 |
| 9"o.d. | 56.00 | 55.00 |
| 10"o.d. | 58.00 | 56.00 |
| 11"o.d. | 60.00 | 58.00 |
| 12"o.d. | 62.00 | 60.00 |
| 13"o.d. | 64.00 | 62.00 |
| 13-1/2"o.d. | 72.00 | 71.00 |
| 14"o.d. | 74.00 | 73.00 |

| Costs/Lin. Ft. | COM | RES |
|---|---------|---------|
| Insulation, Pipe, Polyethylene, P/c with ssl, | | |
| 3/8"o.d. x 3/8"wall | \$ 5.85 | \$ 4.87 |
| 1/2"o.d. x 3/8"wall | 6.13 | 5.12 |
| 3/4"o.d. x 3/8"wall | 6.46 | 5.42 |
| 1"o.d. x 3/8"wall | 6.81 | 5.74 |
| 1-1/4"o.d. x 3/8"wall | 7.19 | 6.08 |
| 1-3/4"o.d. x 3/8"wall | 7.92 | 6.76 |
| 1/4"o.d. x 1/2"wall | 6.20 | 5.22 |
| 3/8"o.d. x 1/2"wall | 6.48 | 5.46 |
| 1/2"o.d. x 1/2"wall | 6.81 | 5.75 |
| 3/4"o.d. x 1/2"wall | 7.16 | 6.07 |
| 1"o.d. x 1/2"wall | 7.52 | 6.39 |
| 1-3/4"o.d. x 1/2"wall | 7.95 | 6.81 |
| 1-1/4"o.d. x 1/2"wall | 8.85 | 7.64 |
| 2"o.d. x 1/2"wall | 9.22 | 7.98 |
| 2-1/4"o.d. x 1/2"wall | 9.73 | 8.47 |
| 2-3/4"o.d. x 1/2"wall | 10.80 | 9.47 |
| 3/8"o.d. x 3/4"wall | 7.21 | 6.18 |
| 1/2"o.d. x 3/4"wall | 7.59 | 6.56 |
| 3/4"o.d. x 3/4"wall | 8.19 | 7.14 |
| 1"o.d. x 3/4"wall | 8.73 | 7.65 |
| 1-1/4"o.d. x 3/4"wall | 9.76 | 8.68 |
| 1-3/4"o.d. x 3/4"wall | 11.10 | 10.00 |
| Pipe Insulation - Fiberglass Wrap, | | |
| 1/2" pipe | 5.47 | 4.46 |
| 3/4" pipe | 5.77 | 4.71 |
| 1" pipe | 6.08 | 4.98 |
| 1-1/2" pipe | 6.53 | 5.38 |

HVAC

This area focuses on the efficient use of energy for habitant comfort as it pertains to climate control of a building. Typically items covered may include Minimum Energy Performance, On-site Renewable Energy and Fundamental Refrigerant Management.

| Costs Each | COM | RES |
|---|-------------|-------------|
| High efficiency gas furnace, Forced air, With single stage burner, 92% AFUE, 45 MBH. | ---- | \$ 1,820.00 |
| With 2 stage burner, 95% AFUE, 70 MBH | ---- | 1,930.00 |
| With 2 stage burner, Variable speed blower, 95% AFUE, 115 MBH | ---- | 3,175.00 |
| Heat pump, Geothermal, Forced air, Heat and cooling, | | |
| 2.5 tons | ---- | 5,500.00 |
| 3 tons | ---- | 5,600.00 |
| 4 tons | \$ 6,250.00 | 6,050.00 |
| 5 tons | 6,700.00 | 6,450.00 |
| Heat pump, Geothermal, Hydronic, Heat and cooling, | | |
| 2.5 tons | ---- | 6,800.00 |
| 3 tons | ---- | 6,950.00 |
| 4 tons | 8,400.00 | 8,100.00 |
| 5 tons | 9,550.00 | 9,250.00 |
| 6 tons | 11,400.00 | 11,000.00 |
| Heat pump, Geothermal, Hybrid, Hydronic and forced air, Heating and cooling, | | |
| 3 ton | ---- | 9,950.00 |
| 4 tons | 11,500.00 | 11,200.00 |
| 5 tons | 12,700.00 | 12,400.00 |
| 6 tons | 14,600.00 | 14,200.00 |
| Geothermal, Horizontal ground loop system, With tubing and heat transfer fluid, | | |
| 3 tons | ---- | 5,050.00 |
| 4 tons | 6,500.00 | 6,350.00 |
| 5 tons | 8,050.00 | 7,800.00 |
| 6 tons | 9,250.00 | 9,000.00 |
| Costs/Sq. Ft. | | |
| Radiant floor, Sub-floor, With heat transfer plates, Circulating pump, Brass manifolds, | | |
| 3/4" id BPex tubing at 8" o.c. | ---- | \$ 7.49 |
| With aluminum covered grooved OSB panels, | | |
| 1/2" id BPex tubing at 8" o.c. | ---- | 9.02 |
| Embedded, Light weight concrete, | | |
| 3/4" id BPex tubing, 12" o.c. | ---- | 3.26 |
| 4" concrete, 2" polystyrene insulation, | | |
| 3/4" id BPex tubing, 12" o.c. | ---- | 7.33 |
| Costs Each | | |
| Heat recovery ventilator, 4 port, 56 Max CFM, 18-1/2"x 17-1/4"x 10-1/2". | ---- | \$ 930.00 |
| 4 port, 160 Max CFM, 3 speed, 28"x 17-1/2"x 25-1/2". | ---- | 1,400.00 |
| 4 port, 240 Max CFM, 3 speed, 28"x 20-1/2"x 25-1/2". | ---- | 2,330.00 |
| Combination exhaust fan, With 2- 18W compact fluorescent bulbs, Ceiling mounted, Low profile housing, | | |
| 80 CFM, 25 Watts, 13" x 13" | ---- | 210.00 |
| 80 CFM, 25 Watts | ---- | 230.00 |
| 110 CFM, 36 Watts | ---- | 245.00 |
| Combination exhaust fan, With 26W compact fluorescent bulb, Ceiling mounted, Perimeter grill, | | |
| 110 CFM, 13" x 13" | ---- | 285.00 |
| 150 CFM | ---- | 370.00 |

GREEN ADDITIONS

SECTION UIP 15

HVAC (CONT.)

| Costs Each | COM | RES |
|--|------|--------|
| Fan, Exhaust, Ceiling mounted, Wall timer, Low profile housing, With 2- 18W compact fluorescent bulbs, 80 CFM, 25 Watts, 13" x 13" | ---- | 250.00 |
| Fan, Exhaust, Ceiling mounted, Humidity sensor, 130CFM, 90 Watts | ---- | 205.00 |
| Attic fan, Roof mounted, Solar powered, With thermostat switch, | | |
| 10 watt, 850 CFM | ---- | 620.00 |
| 1200 CFM, 20 Watts | ---- | 880.00 |
| Attic fan, Gable mounted, Solar powered, With thermostat switch, | | |
| 10 watt, 850 CFM | ---- | 575.00 |
| 1275 CFM, 20 Watts | ---- | 825.00 |

ELECTRICAL LIGHTING

| Costs Each | COM | RES |
|---|------|----------|
| Floodlight, Exterior solar powered, Motion/Photo-cell activated, With photovoltaic panel and 4V battery, 2 - 3W LED conical heads, Cast aluminum housing, | | |
| 8" x 9" x 6-3/4"H | ---- | \$130.00 |
| 6V battery, Plastic housing, 80 LED, 7-7/8" x 7-3/4" x 8-5/8"H | ---- | 175.00 |
| 6V battery, Plastic housing, 30 watt, 8"x 7-3/4"x 9"H | ---- | 225.00 |
| Light fixture, Wall mounted, Automatic dusk-to-dawn, With photovoltaic module and battery, 8 LEDs, Aluminum housing, Beveled glass, | | |
| 6-7/8"x 13"H. | ---- | 230.00 |
| Light fixture, Ceiling mounted, Vandal resistant, Motion sensor, With photovoltaic module and battery, 11 watt compact fluorescent, Aluminum housing, | | |
| 8"x 8"x 8"H. | ---- | 860.00 |

EXTERIOR IMPROVEMENTS

Exterior improvements are items typically independent of the building itself, such as equipment associated with Public Transportation Access, Bicycle Storage, Restoration of Habitat, Stormwater Quantity & Quality Control, Non-Roof heat Island Effect and Water Efficient Landscaping.

PERMEABLE / POROUS PAVING

| Costs/Sq. Ft. | COM | RES |
|--|---------|---------|
| Paving, Reclaimed Brick, With 2" sand bed, | | |
| 4"x 8"x 2-1/4" | ---- | \$13.05 |
| Herringbone pattern | \$18.35 | 16.10 |
| Paving, Reclaimed, Granite, With 2" sand bed, | | |
| Random, 4"x 6" to 6"x 10" | 20.60 | 18.90 |
| Herringbone pattern. | 24.55 | 22.15 |
| Permeable pavers, interlocking, 2"gravel base and fill, precast concrete | 14.25 | 12.85 |
| L-shaped, precast concrete | 12.60 | 11.50 |
| Turf block, 8 open cells, | | |
| precast concrete | 10.10 | 9.15 |

EXTERIOR IMPROVEMENTS

WALK/ROAD/PARKING APPURTENANCES

| Costs Each | COM | RES |
|---|-----------|------|
| Bollard, In ground, Round, Hollow, Galvanized, Steel, 5-1/2" dia. x 72"long | \$ 340.00 | ---- |
| Recycled plastic, | | |
| 6" square x 33" high | 130.00 | ---- |
| Bollard, Sphere, Concrete, | | |
| 18" diameter. | 435.00 | ---- |
| 24" diameter. | 710.00 | ---- |
| 30" diameter. | 945.00 | ---- |
| Barrier, Delineator, Plastic, | | |
| 21" high x 60"long | 245.00 | ---- |
| Recycled plastic, HDPE, | | |
| 8' high x 8' long | 315.00 | ---- |
| Bicycle rack, Powder coat, Galvanized steel, | | |
| 7 bike | 300.00 | ---- |
| 9 bike | 385.00 | ---- |
| Double powder coat, Galvanized steel, | | |
| 9 bike | 695.00 | ---- |
| Thermo plastic covered, Galvanized steel, | | |
| 2 bike | 150.00 | ---- |
| 10 bike | 1,740.00 | ---- |
| Recycled plastic, 10 bike | 720.00 | ---- |
| Wave design, 12 ga.steel, 1-5/8" diameter, | | |
| 5 bike | 390.00 | ---- |

DRIP IRRIGATION

| Costs Each | COM | RES |
|---|----------|----------|
| Drip irrigation, Micro sprayer kit, Small lawn, | | |
| Up to 450 sf. | \$170.00 | \$155.00 |
| Medium lawn, Up to 675 sf. | 240.00 | 220.00 |
| Large lawn, Up to 900 sf. | 340.00 | 325.00 |
| System timer, Hose end, Electronic, | | |
| Single station | 43.00 | 41.00 |
| Digital dial, Dual station | 62.00 | 60.00 |
| Digital programmable, Multi station. | 71.00 | 67.00 |

IRRIGATION WEATHER SENSOR

| Costs Each | COM | RES |
|--|----------|----------|
| Irrigation control, Rain/Freeze sensor, | | |
| Wireless | \$125.00 | \$120.00 |
| Rain/solar/freeze sensor, Automatic seasonal adjustment, With 40 ft wiring | 205.00 | 185.00 |
| Sensor, Mini weather station, Automatic seasonal adjustment | 280.00 | 260.00 |

GREEN ADDITIONS
SECTION UIP 15
EXTERIOR IMPROVEMENTS

RAINWATER HARVESTING SYSTEM

| Costs Each | COM | RES |
|---|------------|------------|
| Rain barrel, Brass spigot, 54 gallon . | ---- | \$320.00 |
| Rain barrel, Recycled wood, Brass hose bib, 55 gallon | ---- | 650.00 |
| Stained, 55 gallon | ---- | 900.00 |
| Rainwater storage tank, Recycled plastic, Modular, 50 gallon | ---- | 700.00 |
| Cistern, Above ground, 100 gallon, HDPE, 28" wide x 45" high \$ | 255.00 | ---- |
| 150 gallon, 36" wide x 41" high . . . | 355.00 | ---- |
| 300 gallon, 46" wide x 50" high . . . | 410.00 | ---- |
| 500 gallon, 46" wide x 76" high . . . | 565.00 | ---- |
| 1000 gallon, 72" wide x 66" high . . | 940.00 | ---- |
| 2000 gallon, 90" wide x 79" high . . | 1,360.00 | ---- |
| 3000 gallon, 96" wide x 109" high . | 1,740.00 | ---- |
| 4000 gallon, 96" wide x 141" high . | 3,325.00 | ---- |
| 10,000 gallon, 141" wide x 160" high | 7,200.00 | ---- |

PLANTING ACCESSORIES

| Costs Each | COM / RES |
|---|------------------|
| Planter box, Recycled plastic, White, 12" long | \$245.00 |
| Cedar, 17" long | 315.00 |
| Planter box, Recycled plastic lumber, Small, 19" x 19" x 17" | 250.00 |
| Large, 24" x 24" x 19" | 310.00 |

PLANT PREP-MULCH

| Costs/Sq. Ft. | COM | RES |
|------------------------------------|------------|------------|
| Mulch, Straw, Hand spread, 1" deep | \$1.69 | \$1.54 |
| Bark, Mixed hardwood | 5.44 | 5.00 |
| Bark, Pine mini nuggets | 6.46 | 6.06 |
| Bark, Aromatic red cedar | 7.70 | 7.38 |

GROUND COVER AND VINES (NO PREP)

| Costs Each | COM | RES |
|---|------------|------------|
| Ground Cover, Standard pot, Euonymus fortunei | \$ 5.39 | \$ 5.01 |
| Vinca major | 10.15 | 10.10 |
| Kamtschaticum | 9.48 | 9.31 |
| Xeriscape, Drought resistant, Potted, Plant ready, Sedum, 2" pot | 5.17 | 4.84 |
| 4" pot | 6.55 | 6.28 |
| 1 gallon | 8.50 | 8.29 |
| 24 plug tray | 97.00 | 90.00 |

SHRUBS AND TREES

| Costs Each | COM / RES |
|---|------------------|
| Tree, Evergreen, Potted, DeGroot's spire, 5 gal, 1-2' tall | \$ 95.00 |
| DeGroot's spire, 10 gal, 2-3' tall | 150.00 |
| Fir, 15 gal, 4-5' tall | 190.00 |
| Fir, 5-6' tall | 405.00 |
| Fir, 6-7' tall | 550.00 |
| Juniper spartan, 15 gal, 4-5' tall | 300.00 |
| Pine, Austrian, 15 gal, 4-5' tall | 205.00 |
| Pine, Austrian, 5-6' tall | 250.00 |
| Pine, Austrian, 6-7' tall | 440.00 |
| Adler, 15 gal, 2-3' tall | 230.00 |
| Ash autumn purple, 15 gal, 2-3' tall . | 205.00 |
| Ash marshall, 15 gal, 2-3' tall | 185.00 |
| Hawthorn, 15 gal, 2-3' tall | 215.00 |
| Maple, 15 gal, 2-3' tall | 215.00 |
| Oak, 15 gal, 4-5' tall | 235.00 |
| Willow weeping, 15 gal, 4-5' tall | 210.00 |

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GENERAL INFORMATION

SECTION UIP 16

PERCENTAGE BREAKDOWN OF BASE COST

AVERAGE QUALITY FAST FOOD RESTAURANT

The following percentages indicate the approximate portions of the total cost attributable to each component in a typical fast food restaurant of average size and quality.

| | |
|--|---------------|
| Plans, engineering and supervision | 2.5% |
| Permits | 1.8% |
| Survey | .7% |
| Clearing, excavation and fill | 2.3% |
| Concrete | .8% |
| Footings | 1.2% |
| Foundations | 2.0% |
| Slab on grade | 1.9% |
| Masonry | 4.3% |
| Wall insulation | .7% |
| Steel frame and decking | 8.4% |
| Doors, frames and hardware | 1.6% |
| Carpentry | 5.5% |
| Roofing and roof insulation | 7.0% |
| HVAC | 10.6% |
| Electrical, including fixtures | 8.6% |
| Plumbing | 6.4% |
| Sprinkler system | .3% |
| Toilet partitions and equipment | .6% |
| Glass storefront | 4.9% |
| Exterior ornamentation | 2.7% |
| Drywall and partitions | 2.3% |
| Tile, (FRP) and marlite | 4.0% |
| Acoustic ceilings | 1.6% |
| Floor coverings | 4.6% |
| Painting | 1.8% |
| Cleanup and miscellaneous | .5% |
| Tax and freight | .5% |
| Contractors' overhead and profit | <u>9.9%</u> |
| TOTAL | 100.0% |

The 9.9% listed for the general contractors' overhead and profit is the percentage of total cost. This is the equivalent of 11.6% of labor, material and subcontracts, excluding plans, engineering, permits and survey.

AVERAGE QUALITY NEIGHBORHOOD SHOPPING CENTER

The percentages listed below indicate typical costs attributable to various components in an average quality and size neighborhood shopping center.

| | |
|--|---------------|
| Plans, engineering and supervision | 5.5% |
| Clearing and excavation | 3.1% |
| Foundations | 6.5% |
| Steel frame and decking | 11.5% |
| Carpentry | 3.9% |
| Insulation and waterproofing | 1.5% |
| Masonry | 13.6% |
| Aluminum storefronts | 4.0% |
| Roofing | 6.1% |
| Doors and frames | 1.7% |
| Interior finish: gypsum board | 5.7% |
| Floor cover | 2.5% |
| Painting | .5% |
| Acoustic ceilings | 1.3% |
| Plumbing | 5.6% |
| Toilet accessories and partitions | .3% |
| Heating and air conditioning | 7.7% |
| Electrical, including fixtures | 10.2% |
| Contractors' overhead and profit | <u>8.8%</u> |
| TOTAL | 100.0% |

The 8.8% listed for the general contractors' overhead and profit is the percentage of total cost. This is the equivalent of 10.3% of labor, material and subcontracts, excluding plans, engineering and supervision.

GENERAL INFORMATION

SECTION UIP 16

AVERAGE QUALITY MULTIPLE RESIDENCE

The following percentages indicate approximate portions of the total cost of average quality multiple residences attributable to each component listed, as derived from an analysis of several 10 to 40 unit, 1 to 3 story, wood frame buildings. Cost of plans are normally on a flat fee basis and includes simple details with no supervision by architect.

| | |
|---|--------------|
| Plans and engineering | 1.7% |
| Plan check and permit | 1.1% |
| Survey | .5% |
| Water meter and temporary facilities | .4% |
| Excavations, forms, concrete and backfill | 4.5% |
| Lightweight concrete | 1.2% |
| Rough carpentry (material) | 8.9% |
| Rough carpentry (labor) | 8.9% |
| Roofing | 1.1% |
| Insulation and weatherstripping | 1.5% |
| Siding, stucco and masonry veneer | 5.7% |
| Plaster and drywall | 5.8% |
| Sash and doors | 3.6% |
| Finish carpentry (material) | 1.5% |
| Finish carpentry (labor) | 2.2% |
| Hardware, rough | .3% |
| Hardware, finish | .7% |
| Cabinets | 3.9% |
| Countertops/tile | 2.1% |
| Floor covering: carpeting | 2.2% |
| Resilient | .9% |
| Plumbing and sewer connections | 9.2% |
| Tub enclosures and toilet accessories | .3% |
| Electrical | 8.3% |
| Light fixtures | .7% |
| Built-in appliances | 2.9% |
| Heating | 3.7% |
| Sheet metal | .7% |
| Ornamental iron | .8% |
| Painting | 2.2% |
| Miscellaneous (TV antenna, etc.) | .6% |
| Cleanup | .4% |
| General contractors' overhead and profit | <u>11.5%</u> |
| TOTAL | 100% |

The 11.5% listed for the general contractors' overhead and profit is the percentage of the total cost. This is the equivalent of 13.5% of the labor, material and subcontract costs, excluding costs of plans, survey, plan check and permit, and engineering, with a range from 8.6% to 18.5%.

GENERAL INFORMATION

SECTION UIP 16

HOTEL DESIGN AND CONSTRUCTION DEVELOPMENT EXAMPLE

| PLANNING DESIGN ANALYSIS | GROSS AREA | PROJECT COST ANALYSIS | AMOUNT | COST/ROOM |
|--|---------------|--|--------------|-----------|
| SITE AREA (1 acre/50 rooms) | 10 acres | LAND , \$850,000/Acre | \$ 8,500,000 | \$ 17,000 |
| HOTEL | | BASE BUILDING COSTS | | |
| | Net Area | Sitetwork | | |
| | (sq. ft.) | Clearing, grubbing, fill, drainage .. | | |
| 500 Room facility | 69,130 | Site amenities | | |
| 223 Doubles @ 310 | 69,130 | Pools and decks, gazebos | | |
| 160 Kings @ 375 | 60,000 | Tennis Courts | | |
| 32 Suites @ 585 | 18,720 | Parking and paving | | |
| 85 Various @ 555 | <u>47,150</u> | Landscape and waterscape | | |
| Circulation (net to gross) 1.4 x | 195,000 | Exterior signs and lighting | | |
| | 273,000 | HOTEL HARD CONSTRUCTION COSTS (Percent of base costs) | | |
| Public facilities | | Clearing and excavation (.8) | | |
| Lobby, 18 sq. ft./room | 9,000 | Structural steel | | |
| Function, ballroom,meeting, conference | | Miscellaneous metals | | |
| space, 1,200 seats @ 15 sq. ft. | 18,000 | Reinforcing steel | | |
| prefunction and support | | Exterior walls | | |
| (net to gross) x 2 | 36,000 | Carpentry | | |
| Food and beverage,dining, lounge and | | Millwork | | |
| bar space, | | Concrete | | |
| 600 seats @ 25 sq. ft. | 15,000 | Roofing and sheetmetal (1.3) | | |
| Preparation and support | | Metal decking | | |
| (net to gross) x 1.4 | 21,000 | Windows, doors and hardware (1.0) | | |
| Retail, 500 sq. ft. (net to gross) x 1.35 | 675 | Plaster and drywall | | |
| Recreational, | | Painting | | |
| 2,000 sq. ft. (net to gross) x 1.4 | 2,800 | Elevators | | |
| Circulation | 11,525 | Marble and tile | | |
| Staff support facilities | | Plumbing | | |
| Housekeeping @ 25 sq. ft./room | 12,500 | Heating and air conditioning . (7.8) | | |
| Misc. support and storage | | Electrical | | |
| @ 20 sq. ft./ room | 10,000 | Miscellaneous and cleanup . (.6) | | |
| Administration @ 15 sq. ft./room | <u>7,500</u> | General contractors' | | |
| Circulation (net to gross) 1.4 x | 30,000 | overhead and profit | | |
| Mechanical facilities | | TOTAL | | |
| H.V.A.C., electrical, maintenance | | TOTAL (100%) \$48,283,250 \$ 96,567 | | |
| areas @ 30 sq. ft./room | 15,000 | SOFT CONSTRUCTION COSTS | | |
| Circulation | <u>16,500</u> | Architectural, engineering and design fees, | | |
| TOTAL SQUARE FEET | 412,500 | project management, surveys, | | |
| Gross area per room (square feet) | 825 | inspections | | |
| SITE AMENITIES | | Contingency | | |
| Swimming pools, 15 sq. ft./room, 7,500 sq. ft. | | INDIRECT COSTS | | |
| Tennis courts, 4 | | Construction interest and fees | | |
| Gazebo, whirlpool spa | | Utility connection, impact fees | | |
| Surface parking, 1.4 spaces/room, 700 spaces | | Real estate taxes | | |
| Landscaped and waterscaped | | Special consultants/feasibility | | |
| | | Legal, title, insurance | | |
| | | Developers' overhead, venture accounting | | |
| | | misc. reimbursables, etc. | | |
| | | CAPITAL COSTS | | |
| | | Furniture, fixtures and equipment ... | | |
| | | Operating equipment | | |
| | | Pre-opening expenses | | |
| | | Working capital | | |
| CONSTRUCTION PERIOD , approximately 24 months | | TOTAL PROJECT COST | | |

GENERAL INFORMATION

SECTION UIP 16

OFFICE DESIGN AND CONSTRUCTION DEVELOPMENT EXAMPLE

| PLANNING DESIGN ANALYSIS | GROSS AREA | PROJECT COST ANALYSIS (CONTINUED) | |
|---|---------------|--|-------------------------------------|
| SITE AREA | 5 acres | AMOUNT | COST/SQ. FT. |
| SUBURBAN OFFICE BUILDING (Gross sq. ft.) | 180,000 | Building shell (continued) (Percent of base costs) | |
| Net to gross @ 80% | | Toilet accessories and partitions (.6) | \$ 111,500 \$.62 |
| 10 stories, atrium entry | | Elevators, conveying systems (4.1) | 761,250 4.23 |
| Floor system, underfloor duct with cells | | Plumbing (4.5) | 835,000 4.64 |
| Floor loading, 80 and 100 lbs/sq. ft. | | Heating and air conditioning . (7.3) | 1,355,000 7.53 |
| H.V.A.C., central VAV and perimeter system | | Electrical (5.3) | 983,750 5.47 |
| Four elevators | | Miscellaneous and cleanup . (1.4) | 260,000 1.44 |
| | | General contractor's overhead and profit. (8.5) | <u>1,577,750</u> <u>8.77</u> |
| | | Subtotal (71.0) | \$13,179,000 \$73.22 |
| | | Tenant improvements, work letter | |
| | | Acoustical ceilings, suspended (1.7) | \$ 315,500 \$ 1.75 |
| | | Resilient floor coverings (.6) | 111,500 .62 |
| | | Carpeting (1.7) | 316,500 1.76 |
| | | Frame and drywall partitions (3.8) | 705,250 3.92 |
| | | Carpentry (.6) | 111,500 .62 |
| | | Doors, frames and hardware (.9) | 167,000 .93 |
| | | Paint and wall covering (.8) | 148,500 .83 |
| | | Sprinklers and life safety . . . (1.7) | 309,500 1.72 |
| | | Heating and air conditioning . (4.0) | 742,500 4.13 |
| | | Electrical (4.2) | 779,500 4.33 |
| | | Tenant upgrades | |
| | | Interior finishes (2.7) | \$ 499,500 \$ 2.78 |
| | | Partitions and cabinetry (3.2) | 589,250 3.27 |
| | | Electrical and mechanical . . . (2.0) | 369,500 2.05 |
| | | Security and life safety (1.1) | <u>199,000</u> <u>1.11</u> |
| | | TOTAL (100.0) | <u>\$18,543,500</u> <u>\$103.02</u> |
| | | SOFT CONSTRUCTION COSTS | |
| | | Architectural, engineering and design fees, project management, surveys, inspections | \$1,281,250 \$7.12 |
| | | Contingency | 515,250 2.86 |
| | | INDIRECT COSTS | |
| | | Construction interest and fees | \$1,657,500 \$9.21 |
| | | Utility connection, impact fees | 243,500 1.35 |
| | | Real estate taxes | 81,000 .45 |
| | | Special consultants, feasibility, space planning | 198,250 1.10 |
| | | Legal, title, insurance | 117,000 .65 |
| | | Advertising, leasing commissions . . . | 832,250 4.62 |
| | | Developers' overhead, venture accounting, etc. | 479,250 2.66 |
| | | CAPITAL COSTS | |
| | | Furniture, fixtures and equipment . . . | \$3,647,250 \$20.26 |
| | | Operating expenses | 2,416,250 13.42 |
| | | TOTAL PROJECT COSTS | <u>\$41,015,750</u> <u>\$227.87</u> |
| PROJECT COST ANALYSIS | AMOUNT | COST/SQ. FT. | |
| LAND , 900,000/acre | \$4,500,000 | \$25.00 | |
| BASE BUILDING COSTS | | | |
| Sitework | | | |
| Clearing, grubbing, fill, drainage . . . | \$ 957,500 | \$ 5.32 | |
| Site amenities | | | |
| Parking and paving | 4,640,250 | 25.78 | |
| Landscape and waterscape | 810,250 | 4.50 | |
| Exterior signs and lighting | 95,500 | .53 | |
| OFFICE HARD CONSTRUCTION COSTS | | | |
| Building shell (Percent of base costs) | | | |
| Clearing, excavation and foundation (2.4) | \$ 445,250 | \$ 2.47 | |
| Steel frame and decking . . . (14.0) | 2,598,750 | 14.44 | |
| Miscellaneous steel and iron (1.4) | 260,000 | 1.44 | |
| Concrete, floors and roof . . . (6.5) | 1,206,750 | 6.70 | |
| Masonry backup and partitions (.7) | 129,750 | .72 | |
| Roofing and roof insulation . (.9) | 167,000 | .93 | |
| Building wall panels (4.1) | 761,000 | 4.23 | |
| Sash and glazing (8.6) | 1,596,500 | 8.87 | |
| Marble, tile and terrazzo . . . (.7) | 129,750 | .72 | |

GENERAL INFORMATION

SECTION UIP 16

FLOOR LOADS

The following are typical live floor loads of some of the buildings used in determining cost averages. A majority of the buildings will have more than one design floor load to accommodate various uses. Thus, a hotel will be designed for heavy floor loads in halls and public areas and lighter floor loads in room areas; banks will need heavier floors in computer and equipment rooms than in office areas.

The listed loads are typical of design specifications of a number of buildings built or under construction during recent years.

| OCCUPANCY | POUNDS PER SQUARE FOOT |
|---|--------------------------------------|
| Apartments and dormitories | 40 |
| Attics (no storage) | 10 (20 lbs. for limited storage) |
| Auditoriums and churches | 100 (50 lbs. for fixed seating) |
| Balconies (exterior), stairs and fire escapes | 40 |
| Banks | 100 |
| Computer floors | 150 |
| Corridors and stairways | 100 |
| Dwellings | 40 (30 lbs. for sleeping rooms) |
| Equipment rooms | 125 |
| Garage repair | 100 |
| Garages and automobile parking | 50 |
| Governmental buildings | 80 |
| Gymnasiums | 100 (150 lbs. for drill floors) |
| Hospitals | 50 (40 lbs. for patient rooms) |
| Hotels and clubs | 40 (100 lbs. in public areas) |
| Industrials, light | 100 |
| Medium | 150 (200 to 350 lbs. for cleanrooms) |
| Heavy | 200 |
| Libraries | 60 (150 lbs. in stacked areas) |
| Lofts | 100 |
| Meeting rooms | 100 |
| Offices, low cost | 50 (plus 20 lbs. for partitions) |
| Average | 50 (plus 20 lbs. for partitions) |
| Good | 60 (plus 20 lbs. for partitions) |
| Excellent | 80 (plus 20 lbs. for partitions) |
| Restaurants | 100 |
| Roofs, unoccupied | 20 (plus snow and drift) |
| School, classrooms | 50 |
| Stores, retail | 75 (125 lbs. in appliance floors) |
| Wholesale | 125 |
| Theaters | 100 (150 lbs. for stage floors) |
| Warehouses, light | 125 |
| Medium | 175 |
| Heavy | 250 (and up) |

GENERAL INFORMATION

SECTION UIP 16

CONSTRUCTION TIME

The following table of average periods of construction lists points on smoothed empirical curves, which have been developed from figures for actual construction jobs. The data was adjusted for time lost due to labor shutdowns with extreme and/or staged construction cases being discarded. No adjustments were made for holidays, inspection delays, weather or other minor shutdowns. Figures are the number of contract (calendar) days from ground breaking to completion of project.

| DESIGNED OCCUPANCY | TOTAL COST OF PROJECT (in thousands of dollars) | | | | | | | | | | | | |
|--|---|------|------|-------|-------|-------|-------|--------|--------|--------|--------|--------|---------|
| | 100 | 200 | 500 | 1,000 | 2,000 | 3,000 | 5,000 | 10,000 | 20,000 | 30,000 | 50,000 | 75,000 | 100,000 |
| Apartments and retirement homes, low rise | 100 | 145 | 200 | 240 | 285 | 310 | 340 | 385 | ---- | ---- | ---- | ---- | ---- |
| Apartments and retirement homes, high rise | ---- | ---- | ---- | 250 | 325 | 370 | 425 | 500 | 575 | 620 | 675 | ---- | ---- |
| Auditoriums and clubhouses | 105 | 135 | 185 | 235 | 300 | 345 | 410 | 520 | 665 | 765 | 910 | 1050 | ---- |
| Banks | 95 | 120 | 165 | 210 | 270 | 310 | 375 | 475 | ---- | ---- | ---- | ---- | ---- |
| Churches | 120 | 160 | 235 | 315 | 420 | 495 | 610 | 815 | 1090 | ---- | ---- | ---- | ---- |
| Department stores and shopping malls | ---- | ---- | ---- | 280 | 330 | 365 | 415 | 490 | 575 | 635 | 720 | ---- | ---- |
| Dormitories | 120 | 150 | 205 | 260 | 330 | 375 | 445 | 565 | 710 | ---- | ---- | ---- | ---- |
| Garages and parking structures | 105 | 135 | 195 | 250 | 325 | 380 | 460 | 600 | ---- | ---- | ---- | ---- | ---- |
| Governmental buildings | 120 | 155 | 220 | 280 | 365 | 425 | 515 | 665 | 860 | 995 | 1200 | 1400 | 1550 |
| Hotels and motels | 115 | 145 | 195 | 245 | 305 | 350 | 415 | 520 | 655 | 750 | 885 | 1010 | 1110 |
| Hospitals | ---- | ---- | 270 | 325 | 395 | 445 | 510 | 620 | 755 | 845 | 975 | 1090 | 1180 |
| Industrial buildings | 100 | 125 | 165 | 205 | 250 | 285 | 335 | 410 | 510 | 575 | 675 | ---- | ---- |
| Libraries | 105 | 190 | 300 | 385 | 470 | 515 | 580 | 665 | 750 | ---- | ---- | ---- | ---- |
| Medical office buildings | 120 | 180 | 260 | 320 | 375 | 410 | 455 | 515 | 575 | ---- | ---- | ---- | ---- |
| Nursing homes | 160 | 195 | 250 | 305 | 370 | 415 | 480 | 585 | 710 | 795 | ---- | ---- | ---- |
| Office buildings | 110 | 135 | 185 | 225 | 280 | 315 | 370 | 460 | 570 | 645 | 760 | 860 | 940 |
| Town houses | 95 | 125 | 180 | 240 | 315 | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- |
| Restaurants | 120 | 155 | 220 | 285 | 365 | 425 | 515 | ---- | ---- | ---- | ---- | ---- | ---- |
| Retail stores, markets and discount stores | 105 | 160 | 235 | 290 | 340 | 375 | 415 | 470 | ---- | ---- | ---- | ---- | ---- |
| Schools and colleges | 145 | 180 | 240 | 295 | 365 | 415 | 485 | 600 | 740 | 840 | 985 | ---- | ---- |
| Veterinary hospitals | 130 | 175 | 255 | 340 | 455 | 535 | 665 | ---- | ---- | ---- | ---- | ---- | ---- |
| Warehouses | 90 | 110 | 150 | 185 | 235 | 265 | 315 | 390 | ---- | ---- | ---- | ---- | ---- |