



# 2020 NATIONAL BUILDING COST MANUAL

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44th Edition

Edited by  
**Ben Moselle**

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# Contents of This Manual

<b>Explanation of the Cost Tables .....</b>	<b>4</b>
<b>Area Modification Factors .....</b>	<b>7</b>
<b>Construction Cost Index .....</b>	<b>9</b>

**Residential Structures Section .....10**

Single Family Residences .....	10
Manufactured Housing.....	16
Multi-Family Residences .....	19
Motels.....	23
Additional Costs for Residences.....	27
Multi-Family and Motel Garages .....	31
Cabins and Recreational Dwellings .....	32
Conventional Recreational Dwellings.....	33
“A-Frame” Cabins .....	38
Additional Costs for Recreational Dwellings .....	42
Life in Years and Depreciation for Residences .....	43

**Public Buildings Section .....44**

Elementary Schools .....	44
Secondary Schools .....	53
Government Buildings.....	56
Public Libraries.....	62
Fire Stations .....	68

**Commercial Structures Section .....74**

Urban Stores, Masonry or Concrete .....	76
Urban Stores, Wood or Wood and Steel .....	82
Suburban Stores, Masonry or Concrete .....	89
Suburban Stores, Wood or Wood and Steel.....	94
Supermarkets, Masonry or Concrete .....	103
Supermarkets, Wood or Wood and Steel .....	105
Small Food Stores, Masonry or Concrete.....	107
Small Food Stores, Wood Frame.....	109
Discount Houses, Masonry or Concrete.....	111
Discount Houses, Wood or Wood and Steel .....	113
Banks and Savings Offices, Masonry or Concrete .....	115
Banks and Savings Office, Wood Frame.....	120
Department Stores, Reinforced Concrete.....	126
Department Stores, Masonry or Concrete .....	129
Department Stores, Wood Frame .....	132
General Office Buildings, Masonry or Concrete .....	135
General Office Buildings, Wood Frame .....	143
Medical-Dental Buildings, Masonry or Concrete .....	151
Medical-Dental Buildings, Wood Frame .....	159
Convalescent Hospitals, Masonry or Concrete .....	167
Convalescent Hospitals, Wood Frame .....	169
Funeral Homes.....	171
Ecclesiastic Buildings .....	173
Self Service Restaurants .....	175
Coffee Shop Restaurants .....	178
Conventional Restaurants .....	181
“A-Frame” Restaurants .....	183

Theaters, Masonry or Concrete.....	185
Mobile Home Parks.....	195
Service Stations, Wood, Masonry or Steel.....	198
Service Stations, Porcelain Finished Steel .....	200
Service Stations, Ranch or Rustic .....	202
Additional Costs for Service Stations.....	204
Service Garages, Masonry or Concrete .....	208
Service Garages, Wood Frame.....	213
Auto Service Centers, Masonry or Concrete.....	218

**Industrial Structures Section..... 222**

Warehouses .....	224
Light Industrial Buildings.....	225
Factory Buildings .....	226
Internal Offices .....	227
External Offices .....	227
Steel Buildings.....	228
Alternate Costs for Steel Buildings.....	230
Commercial and Industrial Building Lives.....	235
Additional Commercial and Industrial Costs.....	236
Material Handling System .....	242
Display Fronts .....	242
Satellite Receiver Systems .....	245
Signs .....	246
Yard Improvements .....	247

**Agricultural Structures Section ..... 249**

General Purpose Barns.....	250
Hay Storage Barns .....	251
Feed Barns.....	252
Shop Buildings.....	253
Machinery and Equipment Sheds.....	254
Small Sheds .....	255
Pole Barns .....	256
Low Cost Dairy Barns.....	257
Stanchion Dairy Barns.....	258
Walk-Through Dairy Barns .....	259
Modern Herringbone Barns .....	260
Miscellaneous Dairy Costs.....	261
Poultry Houses, Conventional.....	262
Poultry Houses, Modern Type.....	263
Poultry Houses, High Rise Type .....	264
Poultry Houses, Deep Pit Type .....	265
Poultry House Equipment .....	266
Green Houses .....	267
Migrant Worker Housing .....	268
Miscellaneous Agricultural Structures.....	269
Typical Lives for Agricultural Buildings.....	269

**Military Construction Section..... 270**

<b>Facility Costs .....</b>	<b>271</b>
<b>Index.....</b>	<b>273</b>

# Explanation of the Cost Tables

This manual shows construction or replacement costs for a wide variety of residential, commercial, industrial, public, agricultural and military buildings. For your convenience and to minimize the chance of an error, all the cost and reference information you need for each building type is brought together on two or three pages. After reading pages 4 to 6, you should be able to turn directly to any building type and create an error-free estimate or appraisal of the construction or replacement cost.

The costs are per square foot of floor area for the basic building and additional costs for optional or extra components that differ from building to building. Building shape, floor area, design elements, materials used, and overall quality influence the basic structure cost. These and other cost variables are isolated for the building types. Components included in the basic square foot cost are listed with each building type. Instructions for using the basic building costs are included above the cost tables. These instructions include a list of components that may have to be added to the basic cost to find the total cost for your structure.

The figures in this manual are intended to reflect the amount that would be paid by the first user of a building completed in mid 2020.

Costs in the tables include all construction costs: labor, material, equipment, plans, building permit, supervision, overhead and profit. Cost tables do not include land value, site development costs, government mandated fees (other than the building permit) or the cost of modifying unusual soil conditions or grades. Construction expense may represent as much as 60% or as little as 40% of the cost to the first building owner. Site preparation, utility lines, government fees and mandates, finance cost and marketing are not part of the construction cost and may be as much as 20% of the cost to the first building owner.

## Building Quality

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Structures vary widely in quality and the quality of construction is the most significant variable in the finished cost. For estimating purposes the structure should be placed in one or more quality classes. These classes are numbered from 1 which is the highest quality generally encountered. Each section of this manual has a page describing typical specifications which define the quality class.

Each number class has been assigned a word description (such as best, good, average or low) for convenience and to help avoid possible errors.

The quality specifications do not reflect some design features and construction details that can make a building both more desirable and more costly. When substantially more than basic design elements are present, and when these elements add significantly to the cost, it is appropriate to classify the quality of the building as higher than would be warranted by the materials used in construction.

Many structures do not fall into a single class and have features of two quality classes. The tables have "half classes" which apply to structures which have some features of one class and some features of a higher or lower class. Classify a building into a "half class" when the quality elements are fairly evenly divided between two classes. Generally, quality elements do not vary widely in a single building. For example, it would be unusual to find a top quality single family residence with minimum quality roof cover. The most weight should be given to quality elements that have the greatest cost. For example, the type of wall and roof framing or the quality of interior finish are more significant than the roof cover or bathroom wall finish. Careful evaluation may determine that certain structures fall into two distinct classes. In this case, the cost of each part of the building should be evaluated separately.

## Building Shapes

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Shape classification considers any cost differences that arise from variations in building outline. Shape classification considerations vary somewhat with different building types. Where the building shape often varies widely between buildings and shape has a significant effect on the building cost, basic building costs are given for several shapes. Use the table that most closely matches the shape of the building you are evaluating. If the shape falls near the division between two basic building cost tables, it is appropriate to average the square foot cost from those two tables.

# Explanation of the Cost Tables

## Area of Buildings

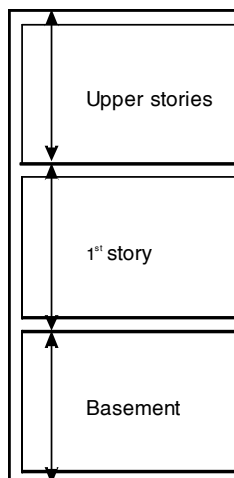
The basic building cost tables reflect the fact that larger buildings generally cost less per square foot than smaller buildings. The cost tables are based on square foot areas which include the following:

1. All floor area within and including the exterior walls of the main building.
2. Inset areas such as vestibules, entrances or porches outside of the exterior wall but under the main roof.
3. Any enclosed additions, annexes or lean-tos with a square foot cost greater than three-fourths of the square foot cost of the main building.

Select the basic building cost listed below the area which falls closest to the actual area of your building. If the area of your building falls nearly mid-way between two listed building areas, it is appropriate to average the square foot costs for the listed areas.

## Wall Heights

Building costs are based on the wall heights given in the instructions for each building cost table. Wall height for the various floors of a building are computed as follows: The basement is measured from the bottom of the first floor slab or joist to the bottom of the first floor slab or joist. The main or first floor extends from the bottom of the first floor slab or joist to the top of the roof slab or ceiling joist. Upper floors are measured from the top of the floor slab or floor joist to the top of the roof slab or ceiling joist. These measurements may be illustrated as follows:



Square foot costs of most building design types must be adjusted if the actual wall height differs from the listed wall height. Wall height adjustment tables are included for buildings requiring this adjustment. Wall height adjustment tables list square foot costs for a foot of difference in perimeter wall height of buildings of various areas. The amount applicable to the actual building area is added or deducted for each foot of difference from the basic wall height.

Buildings such as residences, medical-dental buildings, funeral homes and convalescent hospitals usually have a standard 8-foot ceiling height except in chapels or day room areas. If a significant cost difference exists due to a wall height variation, this factor should be considered in establishing the quality class.

## Other Adjustments

A common wall exists when two buildings share one wall. Common wall adjustments are made by deducting the in-place cost of the exterior wall finish plus one-half of the in-place cost of the structural portion of the common wall area.

If an owner has no ownership in a wall, the in-place cost of the exterior wall finish plus the in-place cost of the structural portion of the wall should be deducted from the total building costs. Suggested common wall and no wall ownership costs are included for many of the building types.

Some square foot costs include the cost of expensive veneer finishes on the entire perimeter wall. When these buildings butt against other buildings, adjustments should be made for the lack of this finish. Where applicable, linear foot cost deductions are provided.

The square foot costs in this manual are based on composite costs of total buildings including usual work room or storage areas. They are intended to be applied on a 100% basis to the total building area even though certain areas may or may not have interior finish. Only in rare instances will it be necessary to modify the square foot cost of a portion of a building.

Multiple story buildings usually share a common roof structure and cover, a common foundation and common floor or ceiling structures. The costs of these components are included in the various floor levels as follows:

## Explanation of the Cost Tables

The first or main floor includes the cost of a floor structure built at ground level, foundation costs for a one-story building, a complete ceiling and roof structure, and a roof cover. The basement includes the basement floor structure and the difference between the cost of the first floor structure built at ground level and its cost built over a basement. The second floor includes the difference between the cost of a foundation for a one-story building and the cost of a foundation for a two-story building and the cost of the second story floor structure.

### Location Adjustments

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The figures in this manual are intended as national averages for metropolitan areas of the United States. Use the information on page 7 to adapt the basic building costs to any area listed. Frequently building costs outside metropolitan areas are 2% to 6% lower if skilled, productive, lower cost labor is available in the area. The factors on page 7 can be applied to nearly all the square foot costs and some of the "additional" costs in this book.

Temporary working conditions in any community can affect construction and replacement costs. Construction which must be done under deadline pressure or in adverse weather conditions or after a major fire, flood, or hurricane or in a thin labor market can temporarily inflate costs 25% to 50%. Conditions such as these are usually temporary and affect only a limited area. But the higher costs are real and must be considered, no matter how limited the area and how transient the condition.

### Depreciation

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Depreciation is the loss in value of a structure from all causes and is caused primarily by three forms of obsolescence: (1) physical (2) functional, and (3) economic.

Physical obsolescence is the deterioration of building components such as paint, carpets or roofing. Much of this deterioration is totally curable. The physical life tables on pages 43, 235 and 269 assume normal physical obsolescence. Good judgment is required to evaluate how deferred maintenance or rehabilitation will reduce or extend the anticipated physical life of a building.

Functional obsolescence is due to some deficiency or flaw in the building. For example, too few bathrooms for the number of bedrooms or an

exceptionally high ceiling can reduce the life expectancy of a residence. Some functional obsolescence can be cured. The physical life tables do not consider functional obsolescence.

Economic obsolescence is caused by conditions that occur off site and are beyond control of the owner. Examples of economic obsolescence include a store in an area of declining economic activity or obsolescence caused by governmental regulation (such as a change in zoning). Because this kind of obsolescence is particularly difficult to measure, it is not considered in the physical life tables.

"Effective age" considers all forms of depreciation. It may be less than chronological age, if recently remodeled or improved, or more than the actual age, if deterioration is particularly bad. Though effective age is not considered in the physical life tables, it may yield a better picture of a structure's life than the actual physical age. Once the effective age is determined, considering physical, functional and economic deterioration, use the percent good tables on pages 43, 235 or 269 to determine the present value of a depreciated building. Present value is the result of multiplying the replacement cost (found by using the cost tables) by the appropriate percent good.

### Limitations

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This manual will be a useful reference for anyone who has to develop budget estimates or replacement costs for buildings. Anyone familiar with construction estimating understands that even very competent estimators with complete working drawings, full specifications and precise labor and material costs can disagree on the cost of a building. Frequently exhaustive estimates for even relatively simple structures can vary 10% or more. The range of competitive bids on some building projects is as much as 20%. Estimating costs is not an exact science and there's room for legitimate disagreement on what the "right" cost is. This manual can not help you do in a few minutes what skilled estimators may not be able to do in many hours. This manual will help you determine a reasonable replacement or construction cost for most buildings. It is not intended as a substitute for judgment or as a replacement for sound professional practice, but should prove a valuable aid to developing an informed opinion of value.

# Area Modification Factors

Construction costs are higher in some cities than in other cities. Add or deduct the percentage shown on this page or page 8 to adapt the costs in this book to your job site. Adjust your estimated total project cost by the percentage shown for the appropriate city in this table to find your total estimated cost. Where 0% is shown it means no modification is required. Factors for Canada adjust to Canadian dollars.

These percentages were compiled by comparing the construction cost of buildings in nearly 600 communities throughout North America. Because these percentages are based on completed projects, they consider all

construction cost variables, including labor, equipment and material cost, labor productivity, climate, job conditions and markup.

Modification factors are listed alphabetically by state and city, followed by the first three digits of the postal zip code.

These percentages are composites of many costs and will not necessarily be accurate when estimating the cost of any particular part of a building. But when used to modify costs for an entire structure, they should improve the accuracy of your estimates.

<b>Alabama Average</b> -4%	Salinas 939 1%	Atlanta 303 12%	Muncie 473 -8%	Camden 048 -10%
Anniston 362 -8%	San Bernardino 923-924 2%	Augusta 308-309 -2%	South Bend 466 -2%	Cutler 046 -7%
Auburn 368 -4%	San Diego 919-921 8%	Buford 305 -2%	Terre Haute 478 -3%	Dexter 049 -4%
Bellamy 369 5%	San Francisco 941 27%	Calhoun 307 -9%		Northern Area 047 -8%
Birmingham 350-352 2%	San Jose 950-951 17%	Columbus 318-319 -3%	<b>Iowa Average</b> -3%	Portland 041 2%
Dothan 363 -7%	San Mateo 943-944 21%	Dublin/Fort Valley 310 -8%	Burlington 526 1%	
Evergreen 364 -10%	Santa Barbara 931 7%	Hinesville 313 -6%	Carroll 514 -11%	<b>Maryland Average</b> 2%
Gadsden 359 -9%	Santa Rosa 954 16%	Kings Bay 315 -10%	Cedar Falls 506 -4%	Annapolis 214 8%
Huntsville 358 -1%	Stockton 952 4%	Macon 312 -4%	Dubuque 522-524 2%	Baltimore 210-212 7%
Jasper 355 -8%	Sunnyvale 940 20%	Marietta 300-302 4%	Cherokee 510 1%	Bethesda 208-209 13%
Mobile 365-366 -2%	Van Nuys 913-916 8%	Savannah 314 -4%	Council Bluffs 515 -1%	Church Hill 216 -4%
Montgomery 360-361 -2%	Whittier 906 8%	Statesboro 304 -11%	Davenport 508 1%	Cumberland 215 -8%
Scottsboro 357 -4%		Valdosta 316 -1%	Decorah 527-528 1%	Elkton 219 -5%
Selma 367 -5%	<b>Colorado Average</b> 1%		Des Moines 521 -8%	Frederick 217 7%
Sheffield 356 0%	Aurora 800-801 7%	<b>Hawaii Average</b> 20%	Des Moines 500-503 5%	Laurel 206-207 8%
Tuscaloosa 354 -4%	Boulder 803-804 4%	Aliamanu 968 22%	Dubuque 520 -4%	Salisbury 218 -6%
	Colorado Springs 808-809 0%	Ewa 967 20%	Fort Dodge 505 -3%	
<b>Alaska Average</b> 23%	Denver 802 8%	Halawa Heights 967 20%	Mason City 504 -3%	<b>Massachusetts Average</b> 12%
Anchorage 995 26%	Durango 813 -1%	Hilo 967 20%	Ottumwa 525 -6%	Ayer 015-016 6%
Fairbanks 997 27%	Fort Morgan 807 -2%	Honolulu 968 22%	Sheldon 512 -7%	Bedford 017 15%
Juneau 998 19%	Glenwood Springs 816 4%	Kailua 968 22%	Shenandoah 516 -14%	Boston 021-022 37%
Ketchikan 999 18%	Grand Junction 814-815 0%	Lualualei 967 20%	Sioux City 511 5%	Brockton 023-024 20%
King Salmon 996 23%	Greeley 806 5%	Mililani Town 967 20%	Spencer 513 -7%	Cape Cod 026 4%
	Longmont 805 2%	Pearl City 967 20%	Waterloo 507 -3%	Chicopee 010 7%
<b>Arizona Average</b> -4%	Pagosa Springs 811 -4%	Wahiawa 967 20%		Dedham 019 18%
Chambers 865 -8%	Pueblo 810 0%	Waianae 967 20%	<b>Kansas Average</b> 0%	Fitchburg 014 11%
Douglas 855 -8%	Salida 812 -6%	Wailuku (Maui) 967 20%	Colby 677 -8%	Hingham 020 19%
Flagstaff 860 -7%			Concordia 669 -12%	Lawrence 018 14%
Kingman 864 -5%	<b>Connecticut Average</b> 8%	<b>Idaho Average</b> -9%	Dodge City 678 -4%	Nantucket 025 9%
Mesa 852 3%	Bridgeport 066 6%	Boise 837 -5%	Emporia 668 8%	New Bedford 027 6%
Phoenix 850 3%	Bristol 060 12%	Coeur d'Alene 838 -10%	Fort Scott 667 -6%	Northfield 013 2%
Prescott 863 -6%	Fairfield 064 9%	Idaho Falls 834 -9%	Hays 676 -13%	Pittsfield 012 1%
Show Low 859 -7%	Hartford 061 11%	Lewisville 835 -11%	Hutchinson 675 -6%	Springfield 011 8%
Tucson 856-857 -5%	New Haven 065 7%	Meridian 836 -9%	Independence 673 29%	
Yuma 853 2%	Norwich 063 3%	Pocatello 832 -10%	Kansas City 660-662 5%	
	Stamford 068-069 12%	Sun Valley 833 -8%	Liberal 679 14%	<b>Michigan Average</b> 1%
<b>Arkansas Average</b> -7%	Waterbury 067 6%		Salina 674 -7%	Battle Creek 490-491 -1%
Batesville 725 -9%	West Hartford 062 5%	<b>Illinois Average</b> 4%	Topeka 664-666 -1%	Detroit 481-482 7%
Camden 717 -2%		Arlington Heights 600 14%	Wichita 670-672 -4%	Flint 484-485 -4%
Fayetteville 727 -4%	<b>Delaware Average</b> 2%	Aurora 605 14%		Grand Rapids 493-495 1%
Fort Smith 729 -7%	Dover 199 -4%	Belleville 622 0%	<b>Kentucky Average</b> -4%	Grayling 497 -7%
Harrison 726 -12%	Newark 197 6%	Bloomington 617 -1%	Ashland 411-412 -4%	Jackson 492 -1%
Hope 718 -8%	Wilmington 198 4%	Carbondale 629 -4%	Bowling Green 421 -5%	Campton 488-489 0%
Hot Springs 719 -13%		Carol Stream 601 14%	Campton 413-414 -11%	Marquette 498-499 3%
Jonesboro 724 -9%	<b>District of Columbia</b>	Centralia 628 -3%	Covington 410 2%	Pontiac 483 12%
Little Rock 720-722 -3%	<b>Average</b> 12%	Champaign 618 -2%	Elizabethtown 427 -10%	Royal Oak 480 7%
Pine Bluff 716 -11%	Washington 200-205 12%	Chicago 606-608 15%	Frankfort 406 7%	Saginaw 486-487 -5%
Russellville 728 -4%		Decatur 623 -7%	Hazard 417-418 -10%	Traverse City 496 -2%
West Memphis 723 -2%	<b>Florida Average</b> -5%	Galesburg 614 -4%	Hopkinsville 422 -5%	
	Altamonte Springs 327 -3%	Granite City 620 3%	Lexington 403-405 1%	<b>Minnesota Average</b> -1%
<b>California Average</b> 9%	Bradenton 342 -6%	Green River 612 5%	London 407-409 -7%	Bemidji 566 -6%
Alhambra 917-918 8%	Brooksville 346 -7%	Joliet 604 13%	Louisville 400-402 2%	Brainerd 564 -3%
Bakersfield 932-933 2%	Daytona Beach 321 -9%	Kankakee 609 -3%	Owensboro 423 -4%	Duluth 556-558 2%
El Centro 922 0%	Fort Lauderdale 333 2%	Lawrenceville 624 -6%	Paducah 420 0%	Fergus Falls 565 -10%
Eureka 955 7%	Fort Myers 339 -6%	Oak Park 603 18%	Pikeville 415-416 -8%	Magnolia 561 -8%
Fresno 936-938 -2%	Fort Pierce 349 -10%	Peoria 615-616 6%	Somerseset 425-426 -11%	Mankato 560 -4%
Herlong 961 9%	Gainesville 326 -9%	Peru 613 2%	White Plains 424 -4%	Minneapolis 553-555 13%
Inglewood 902-905 9%	Jacksonville 322 -2%	Quincy 602 16%		Rochester 559 -1%
Irvine 926-927 13%	Lakeland 338 -8%	Rockford 610-611 3%	<b>Louisiana Average</b> 2%	St Cloud 563 2%
Lompoc 934 3%	Melbourne 329 -8%	Springfield 625-627 0%	Alexandria 713-714 4%	St Paul 550-551 12%
Long Beach 907-908 9%	Miami 330-332 1%	Urbana 619 -4%	Baton Rouge 707-708 10%	Thief River Falls 567 -2%
Los Angeles 900-901 8%	Naples 341 -2%		Houma 703 4%	Willmar 562 -6%
Marysville 959 9%	Ocala 344 -12%	<b>Indiana Average</b> -3%	Lafayette 705 8%	
Modesto 953 1%	Orlando 328 1%	Aurora 470 -5%	Lake Charles 706 13%	<b>Mississippi Average</b> -6%
Mojave 935 5%	Panama City 324 -11%	Bloomington 474 -2%	Mandeville 704 -3%	Clarksdale 386 -9%
Novato 949 18%	Pensacola 325 -8%	Columbus 472 -4%	Minden 710 -5%	Columbus 397 0%
Oakland 945-947 24%	Saint Augustine 320 -2%	Elkhart 465 -4%	Monroe 712 -8%	Greenville 387 -14%
Orange 928 12%	Saint Cloud 347 -2%	Evansville 476-477 4%	New Orleans 700-701 2%	Greenwood 389 -10%
Oxnard 930 2%	St Petersburg 337 -6%	Fort Wayne 467-468 -1%	Shreveport 711 -4%	Gulfport 395 -6%
Pasadena 910-912 9%	Tallahassee 323 -6%	Gary 463-464 8%		Jackson 390-392 -3%
Rancho Cordova 956-957 4%	Tampa 335-336 -1%	Indianapolis 460-462 4%	<b>Maine Average</b> -5%	Laurel 394 -7%
Redding 960 -3%	West Palm Beach 334 -2%	Jasper 475 -8%	Auburn 042 -4%	McComb 396 -11%
Richmond 948 17%		Jeffersonville 471 -5%	Augusta 043 -5%	Meridian 393 3%
Riverside 925 4%	<b>Georgia Average</b> -4%	Kokomo 469 -8%	Bangor 044 -6%	Tupelo 388 -7%
Sacramento 958 3%	Albany 317 -6%	Lafayette 479 -5%	Bath 045 -6%	
	Athens 306 -5%		Brunswick 039-040 -1%	



# Area Modification Factors

<p><b>Missouri Average</b> <span style="float: right;">-3%</span></p> <p>Cape Girardeau 637 -5%</p> <p>Caruthersville 638 -7%</p> <p>Chillicothe 646 -4%</p> <p>Columbia 652 -4%</p> <p>East Lynne 647 4%</p> <p>Farmington 636 -8%</p> <p>Hannibal 634 -2%</p> <p>Independence 640 5%</p> <p>Jefferson City 650-651 -5%</p> <p>Joplin 648 -6%</p> <p>Kansas City 641 6%</p> <p>Kirksville 635 -15%</p> <p>Knob Noster 653 3%</p> <p>Lebanon 654-655 -12%</p> <p>Poplar Bluff 639 -10%</p> <p>Saint Charles 633 1%</p> <p>Saint Joseph 644-645 -1%</p> <p>Springfield 656-658 -8%</p> <p>St Louis 630-631 8%</p>	<p>Binghamton 137-139 -2%</p> <p>Bronx 104 10%</p> <p>Brooklyn 112 7%</p> <p>Buffalo 142 1%</p> <p>Elmira 149 -3%</p> <p>Flushing 113 15%</p> <p>Garden City 115 15%</p> <p>Hicksville 118 14%</p> <p>Ithaca 148 -5%</p> <p>Jamaica 114 14%</p> <p>Jamestown 147 -7%</p> <p>Kingston 124 -4%</p> <p>Long Island 111 30%</p> <p>Montauk 119 7%</p> <p>New York (Manhattan) 100-102 31%</p> <p>New York City 100-102 31%</p> <p>Newcomb 128 0%</p> <p>Niagara Falls 143 -6%</p> <p>Plattsburgh 129 -1%</p> <p>Poughkeepsie 125-126 1%</p> <p>Queens 110 17%</p> <p>Rochester 144-146 2%</p> <p>Rockaway 116 10%</p> <p>Rome 133-134 -4%</p> <p>Staten Island 103 8%</p> <p>Stewart 127 -5%</p> <p>Syracuse 130-132 2%</p> <p>Tonawanda 141 -1%</p> <p>Utica 135 -6%</p> <p>Watertown 136 -1%</p> <p>West Point 109 6%</p> <p>White Plains 105-108 14%</p>	<p><b>Oregon Average</b> <span style="float: right;">-3%</span></p> <p>Adrian 979 -12%</p> <p>Bend 977 -5%</p> <p>Eugene 974 -3%</p> <p>Grams Pass 975 -5%</p> <p>Klamath Falls 976 -8%</p> <p>Pendleton 978 -3%</p> <p>Portland 970-972 10%</p> <p>Salem 973 -2%</p>	<p><b>Pennsylvania Average</b> <span style="float: right;">-1%</span></p> <p>Allentown 181 3%</p> <p>Altoona 166 -8%</p> <p>Beaver Springs 178 -5%</p> <p>Bethlehem 180 4%</p> <p>Bradford 167 -8%</p> <p>Butler 160 -2%</p> <p>Chambersburg 172 -7%</p> <p>Clearfield 168 -3%</p> <p>DuBois 158 -10%</p> <p>East Stroudsburg 183 -5%</p> <p>Erie 164-165 -6%</p> <p>Genesee 169 -4%</p> <p>Greensburg 156 -4%</p> <p>Harrisburg 170-171 3%</p> <p>Hazleton 182 -3%</p> <p>Johnstown 159 -9%</p> <p>Kittanning 162 -6%</p> <p>Lancaster 175-176 -1%</p> <p>Lebanon 163 -9%</p> <p>Montrose 188 -4%</p> <p>New Castle 161 -3%</p> <p>Philadelphia 190-191 11%</p> <p>Pittsburgh 152 6%</p> <p>Pottsville 179 -8%</p> <p>Punxsutawney 157 -3%</p> <p>Reading 195-196 2%</p> <p>Scranton 184-185 1%</p> <p>Somerset 155 -9%</p> <p>Southeastern 193 8%</p> <p>Uniontown 154 -6%</p> <p>Valley Forge 194 11%</p> <p>Warminster 189 11%</p> <p>Warrendale 150-151 5%</p> <p>Washington 153 8%</p> <p>Wilkes Barre 186-187 -1%</p> <p>Williamsport 177 -2%</p> <p>York 173-174 -1%</p>	<p>Arlington 760 1%</p> <p>Austin 786-787 12%</p> <p>Bay City 774 39%</p> <p>Beaumont 776-777 18%</p> <p>Brownwood 768 -8%</p> <p>Bryan 778 8%</p> <p>Childress 792 -14%</p> <p>Corpus Christi 783-784 18%</p> <p>Dallas 751-753 6%</p> <p>Del Rio 788 0%</p> <p>El Paso 798-799 -7%</p> <p>Fort Worth 761-762 2%</p> <p>Galveston 775 24%</p> <p>Giddings 789 6%</p> <p>Greenville 754 3%</p> <p>Houston 770-772 26%</p> <p>Huntsville 773 26%</p> <p>Longview 756 1%</p> <p>Lubbock 793-794 -7%</p> <p>Lufkin 759 8%</p> <p>McAllen 785 -6%</p> <p>Midland 797 10%</p> <p>Palestine 758 2%</p> <p>Plano 750 7%</p> <p>San Angelo 769 -6%</p> <p>San Antonio 780-782 8%</p> <p>Texarkana 755 -8%</p> <p>Tyler 757 -7%</p> <p>Victoria 779 12%</p> <p>Waco 765-767 -3%</p> <p>Wichita Falls 763 -9%</p> <p>Woodson 764 -3%</p>	<p>Lewisburg 249 -14%</p> <p>Martinsburg 254 -5%</p> <p>Morgantown 265 -4%</p> <p>New Martinsville 262 -9%</p> <p>Parkersburg 261 1%</p> <p>Romney 267 -7%</p> <p>Sugar Grove 268 -8%</p> <p>Wheeling 260 5%</p>																	
<p><b>Montana Average</b> <span style="float: right;">-3%</span></p> <p>Billings 590-591 -2%</p> <p>Butte 597 -3%</p> <p>Fairview 592 12%</p> <p>Great Falls 594 -6%</p> <p>Havre 595 -9%</p> <p>Helena 596 -2%</p> <p>Kalispell 599 -6%</p> <p>Miles City 593 -6%</p> <p>Missoula 598 -6%</p>	<p><b>Nebraska Average</b> <span style="float: right;">-8%</span></p> <p>Alliance 693 -10%</p> <p>Columbus 686 -7%</p> <p>Grand Island 688 -8%</p> <p>Hastings 689 -9%</p> <p>Lincoln 683-685 -4%</p> <p>McCook 690 -9%</p> <p>Norfolk 687 -10%</p> <p>North Platte 691 -6%</p> <p>Omaha 680-681 0%</p> <p>Valentine 692 -15%</p>	<p><b>Nevada Average</b> <span style="float: right;">1%</span></p> <p>Carson City 897 -4%</p> <p>Elko 898 9%</p> <p>Ely 893 -3%</p> <p>Fallon 894 0%</p> <p>Las Vegas 889-891 3%</p> <p>Reno 895 -1%</p>	<p><b>New Hampshire Average</b> <span style="float: right;">-1%</span></p> <p>Charlestown 036 -5%</p> <p>Concord 034 -3%</p> <p>Dover 038 1%</p> <p>Lebanon 037 -3%</p> <p>Littleton 035 -6%</p> <p>Manchester 032-033 2%</p> <p>New Boston 030-031 3%</p>	<p><b>New Jersey Average</b> <span style="float: right;">9%</span></p> <p>Atlantic City 080-084 4%</p> <p>Brick 087 2%</p> <p>Dover 078 9%</p> <p>Edison 088-089 13%</p> <p>Hackensack 076 10%</p> <p>Monmouth 077 12%</p> <p>Newark 071-073 11%</p> <p>Passaic 070 12%</p> <p>Paterson 074-075 7%</p> <p>Princeton 085 10%</p> <p>Summit 079 16%</p> <p>Trenton 086 7%</p>	<p><b>New Mexico Average</b> <span style="float: right;">-8%</span></p> <p>Alamogordo 883 -11%</p> <p>Albuquerque 870-871 -3%</p> <p>Clovis 881 -11%</p> <p>Farmington 874 -1%</p> <p>Fort Sumner 882 -2%</p> <p>Gallup 873 -7%</p> <p>Holman 877 -10%</p> <p>Las Cruces 880 -8%</p> <p>Santa Fe 875 -8%</p> <p>Socorro 878 -14%</p> <p>Truth or Consequences 879 -8%</p> <p>Tucumcari 884 -8%</p>	<p><b>New York Average</b> <span style="float: right;">6%</span></p> <p>Albany 120-123 7%</p> <p>Amityville 117 9%</p> <p>Batavia 140 1%</p>	<p><b>North Carolina Average</b> <span style="float: right;">-4%</span></p> <p>Asheville 287-289 -7%</p> <p>Charlotte 280-282 7%</p> <p>Durham 277 0%</p> <p>Elizabeth City 279 -8%</p> <p>Fayetteville 283 -6%</p> <p>Goldsboro 275 0%</p> <p>Greensboro 274 -3%</p> <p>Hickory 286 -8%</p> <p>Kinston 285 -9%</p> <p>Raleigh 276 3%</p> <p>Rocky Mount 278 -7%</p> <p>Wilmington 284 -6%</p> <p>Winston-Salem 270-273 -5%</p>	<p><b>North Dakota Average</b> <span style="float: right;">4%</span></p> <p>Bismarck 585 3%</p> <p>Dickinson 586 15%</p> <p>Fargo 580-581 0%</p> <p>Grand Forks 582 -1%</p> <p>Jamestown 584 -4%</p> <p>Minot 587 9%</p> <p>Nekoma 583 -10%</p> <p>Williston 588 21%</p>	<p><b>Ohio Average</b> <span style="float: right;">0%</span></p> <p>Akron 442-443 1%</p> <p>Canton 446-447 -2%</p> <p>Chillicothe 456 -2%</p> <p>Cincinnati 450-452 3%</p> <p>Cleveland 440-441 3%</p> <p>Columbus 432 5%</p> <p>Dayton 453-455 1%</p> <p>Lima 458 -5%</p> <p>Marietta 457 -5%</p> <p>Marion 433 -6%</p> <p>Newark 430-431 3%</p> <p>Sandusky 448-449 -3%</p> <p>Steubenville 439 1%</p> <p>Toledo 434-436 7%</p> <p>Warren 444 -5%</p> <p>Youngstown 445 -3%</p> <p>Zanesville 437-438 -1%</p>	<p><b>Oklahoma Average</b> <span style="float: right;">-5%</span></p> <p>Adams 739 -10%</p> <p>Ardmore 734 -1%</p> <p>Clinton 736 -3%</p> <p>Durant 747 -11%</p> <p>Enid 737 -4%</p> <p>Lawton 735 -8%</p> <p>McAlester 745 -7%</p> <p>Muskogee 744 -8%</p> <p>Norman 730 -4%</p> <p>Oklahoma City 731 -3%</p> <p>Ponca City 746 -1%</p> <p>Poteau 749 -7%</p> <p>Pryor 743 -6%</p> <p>Shawnee 748 -8%</p> <p>Tulsa 740-741 0%</p> <p>Woodward 738 5%</p>	<p><b>Rhode Island Average</b> <span style="float: right;">5%</span></p> <p>Bristol 028 5%</p> <p>Coventry 028 5%</p> <p>Cranston 029 6%</p> <p>Davisville 028 5%</p> <p>Narragansett 028 5%</p> <p>Newport 028 5%</p> <p>Providence 029 6%</p> <p>Warwick 028 5%</p>	<p><b>South Carolina Average</b> <span style="float: right;">-1%</span></p> <p>Aiken 298 4%</p> <p>Beaufort 299 -2%</p> <p>Charleston 294 -1%</p> <p>Columbia 290-292 -2%</p> <p>Greenville 296 8%</p> <p>Myrtle Beach 295 -8%</p> <p>Rock Hill 297 -6%</p> <p>Spartanburg 293 -4%</p>	<p><b>South Dakota Average</b> <span style="float: right;">-6%</span></p> <p>Aberdeen 574 -7%</p> <p>Mitchell 573 -6%</p> <p>Mobridge 576 -9%</p> <p>Pierre 575 -10%</p> <p>Rapid City 577 -8%</p> <p>Sioux Falls 570-571 -1%</p> <p>Watertown 572 -4%</p>	<p><b>Tennessee Average</b> <span style="float: right;">-2%</span></p> <p>Chattanooga 374 2%</p> <p>Clarksville 370 1%</p> <p>Cleveland 373 -1%</p> <p>Columbia 384 -7%</p> <p>Cookeville 385 -8%</p> <p>Jackson 383 -2%</p> <p>Kingsport 376 -5%</p> <p>Knoxville 377-379 -2%</p> <p>McKenzie 382 -8%</p> <p>Memphis 380-381 1%</p> <p>Nashville 371-372 2%</p>	<p><b>Texas Average</b> <span style="float: right;">5%</span></p> <p>Abilene 795-796 -2%</p> <p>Amarillo 790-791 -2%</p>	<p><b>Utah Average</b> <span style="float: right;">-3%</span></p> <p>Clearfield 840 0%</p> <p>Green River 845 -3%</p> <p>Ogden 843-844 -9%</p> <p>Provo 846-847 -6%</p> <p>Salt Lake City 841 1%</p>	<p><b>Vermont Average</b> <span style="float: right;">-5%</span></p> <p>Albany 058 -7%</p> <p>Battleboro 053 -4%</p> <p>Beecher Falls 059 -8%</p> <p>Bennington 052 -6%</p> <p>Burlington 054 4%</p> <p>Montpelier 056 -4%</p> <p>Rutland 057 -7%</p> <p>Springfield 051 -6%</p> <p>White River Junction 050 -5%</p>	<p><b>Virginia Average</b> <span style="float: right;">-4%</span></p> <p>Abingdon 242 -9%</p> <p>Alexandria 220-223 10%</p> <p>Charlottesville 229 -6%</p> <p>Chesapeake 233 -4%</p> <p>Culpeper 227 -5%</p> <p>Farmville 239 -12%</p> <p>Fredericksburg 224-225 -5%</p> <p>Galax 243 -10%</p> <p>Harrisonburg 228 -6%</p> <p>Lynchburg 245 -9%</p> <p>Norfolk 235-237 -2%</p> <p>Petersburg 238 -3%</p> <p>Radford 241 -9%</p> <p>Reston 201 7%</p> <p>Richmond 232 2%</p> <p>Roanoke 240 -9%</p> <p>Staunton 244 -7%</p> <p>Tazewell 246 -6%</p> <p>Virginia Beach 234 -3%</p> <p>Williamsburg 230-231 -3%</p> <p>Winchester 226 4%</p>	<p><b>Washington Average</b> <span style="float: right;">0%</span></p> <p>Clarkston 994 -8%</p> <p>Everett 982 2%</p> <p>Olympia 985 -2%</p> <p>Pasco 993 1%</p> <p>Seattle 980-981 11%</p> <p>Spokane 990-992 -3%</p> <p>Tacoma 983-984 2%</p> <p>Vancouver 986 3%</p> <p>Wenatchee 988 -6%</p> <p>Yakima 989 -5%</p>	<p><b>West Virginia Average</b> <span style="float: right;">-5%</span></p> <p>Beckley 258-259 -5%</p> <p>Bluefield 247-248 0%</p> <p>Charleston 250-253 4%</p> <p>Clarksburg 263-264 -7%</p> <p>Fairmont 266 -11%</p> <p>Huntington 255-257 -4%</p>	<p><b>Wisconsin Average</b> <span style="float: right;">0%</span></p> <p>Amery 540 -1%</p> <p>Beloit 535 5%</p> <p>Clam Lake 545 -8%</p> <p>Eau Claire 547 -2%</p> <p>Green Bay 541-543 3%</p> <p>La Crosse 546 0%</p> <p>Ladysmith 548 -2%</p> <p>Madison 537 8%</p> <p>Milwaukee 530-534 6%</p> <p>Oshkosh 549 4%</p> <p>Portage 539 0%</p> <p>Prairie du Chien 538 -7%</p> <p>Wausau 544 -3%</p>	<p><b>Wyoming Average</b> <span style="float: right;">-1%</span></p> <p>Casper 826 1%</p> <p>Cheyenne/Laramie 820 -2%</p> <p>Gillette 827 3%</p> <p>Powell 824 -3%</p> <p>Rawlins 823 8%</p> <p>Riverton 825 -6%</p> <p>Rock Springs 829-831 1%</p> <p>Sheridan 828 -3%</p> <p>Wheatland 822 -3%</p>
<b>UNITED STATES TERRITORIES</b>																						
<p>Guam 18%</p> <p>Puerto Rico -21%</p>																						
<b>VIRGIN ISLANDS (U.S.)</b>																						
<p>St. Croix 2%</p> <p>St. John 20%</p> <p>St. Thomas 5%</p>																						
<b>CANADIAN AREA MODIFIERS</b>																						
<p>These figures assume an exchange rate of \$1.00 Canadian to \$.76 U.S.</p>																						
<b>Alberta Average</b> <span style="float: right;">13%</span>																						
<p>Calgary 14%</p> <p>Edmonton 14%</p> <p>Fort McMurray 12%</p>																						
<b>British Columbia Average</b> <span style="float: right;">7%</span>																						
<p>Fraser Valley 6%</p> <p>Okanagan 6%</p> <p>Vancouver 9%</p>																						
<b>Manitoba Average</b> <span style="float: right;">0%</span>																						
<p>North Manitoba 0%</p> <p>Selkirk 0%</p> <p>South Manitoba 0%</p> <p>Winnipeg 0%</p>																						
<b>New Brunswick Average</b> <span style="float: right;">-13%</span>																						
<p>Moncton -13%</p> <p>Newfoundland/Labrador -3%</p>																						
<b>Nova Scotia Average</b> <span style="float: right;">-8%</span>																						
<p>Amherst -8%</p> <p>Nova Scotia -7%</p> <p>Sydney -8%</p>																						
<b>Ontario Average</b> <span style="float: right;">7%</span>																						
<p>London 7%</p> <p>Thunder Bay 6%</p> <p>Toronto 7%</p>																						
<b>Quebec Average</b> <span style="float: right;">-1%</span>																						
<p>Montreal -1%</p> <p>Quebec City -1%</p>																						
<b>Saskatchewan Average</b> <span style="float: right;">4%</span>																						
<p>La Ronge 3%</p> <p>Prince Albert 2%</p> <p>Saskatoon 5%</p>																						



# Building Cost Historical Index

Use this table to find the approximate current dollar building cost when the actual cost is known for any year since 1953. Multiply the figure listed below for the building type and year of construction by the known cost. The result is the estimated 2020 construction cost.

Year	Masonry Buildings	Concrete Buildings	Steel Buildings	Wood-Frame Buildings	Agricultural Buildings	Year of Construction
1953	14.73	15.58	15.68	13.22	12.20	1953
1954	14.45	15.02	15.68	13.22	12.20	1954
1955	13.86	14.33	14.85	12.52	11.67	1955
1956	13.15	13.70	13.67	11.99	11.18	1956
1957	12.77	13.18	13.13	11.91	10.91	1957
1958	12.41	12.69	12.49	11.88	13.01	1958
1959	12.02	12.29	12.20	11.37	10.43	1959
1960	11.74	12.06	12.00	11.20	10.22	1960
1961	11.50	12.01	11.80	11.00	10.19	1961
1962	11.25	11.66	11.51	10.87	10.04	1962
1963	11.08	11.36	11.38	10.66	9.10	1963
1964	10.75	11.22	11.22	10.30	9.56	1964
1965	10.41	10.93	10.83	10.08	9.30	1965
1966	9.94	10.62	10.42	9.64	9.04	1966
1967	9.71	10.11	9.74	9.17	8.68	1967
1968	9.31	9.55	9.30	8.67	8.30	1968
1969	8.79	9.13	8.99	8.34	7.83	1969
1970	8.44	8.73	8.53	7.93	7.44	1970
1971	7.92	7.99	7.92	6.83	6.93	1971
1972	7.36	7.40	7.41	6.85	6.45	1972
1973	6.72	7.01	6.57	6.32	6.06	1973
1974	5.98	6.43	6.17	5.91	5.62	1974
1975	5.44	5.68	5.55	5.56	5.01	1975
1976	5.10	5.41	5.27	5.35	4.75	1976
1977	4.75	5.07	5.00	4.97	4.46	1977
1978	4.42	4.75	4.60	4.57	4.04	1978
1979	4.06	4.22	4.13	4.19	3.83	1979
1980	3.68	3.84	3.68	3.75	3.46	1980
1981	3.46	3.62	3.37	3.58	3.24	1981
1982	3.35	3.46	3.27	3.47	3.12	1982
1983	3.20	3.35	3.20	3.31	2.94	1983
1984	2.99	3.15	3.06	3.05	2.86	1984
1985	2.91	2.99	2.97	2.96	2.81	1985
1986	2.83	2.97	2.92	2.92	2.75	1986
1987	2.82	2.91	2.89	2.86	2.73	1987
1988	2.76	2.80	2.83	2.83	2.68	1988
1989	2.70	2.75	2.70	2.78	2.60	1989
1990	2.54	2.64	2.56	2.58	2.48	1990
1991	2.75	2.60	2.43	2.44	2.35	1991
1992	2.46	2.57	2.40	2.43	2.33	1992
1993	2.40	2.54	2.32	2.40	2.29	1993
1994	2.34	2.37	2.23	2.31	2.13	1994
1995	2.22	2.17	2.06	2.17	2.01	1995
1996	2.14	2.13	2.01	2.12	1.97	1996
1997	2.07	2.07	1.93	2.08	1.92	1997
1998	1.97	1.97	1.85	1.99	1.90	1998
1999	1.90	1.90	1.81	1.96	1.87	1999
2000	1.85	1.85	1.74	1.89	1.81	2000
2001	1.79	1.79	1.71	1.82	1.76	2001
2002	1.74	1.74	1.66	1.80	1.72	2002
2003	1.72	1.72	1.62	1.79	1.69	2003
2004	1.65	1.65	1.58	1.74	1.64	2004
2005	1.53	1.53	1.41	1.56	1.61	2005
2006	1.44	1.44	1.31	1.40	1.44	2006
2007	1.39	1.39	1.24	1.30	1.33	2007
2008	1.31	1.31	1.18	1.24	1.26	2008
2009	1.30	1.30	1.14	1.24	1.26	2009
2010	1.27	1.27	1.07	1.23	1.25	2010
2011	1.28	1.28	1.11	1.25	1.29	2011
2012	1.27	1.27	0.99	1.21	1.26	2012
2013	1.21	1.21	1.05	1.15	1.18	2013
2014	1.20	1.20	1.04	1.13	1.17	2014
2015	1.19	1.19	1.03	1.12	1.16	2015
2016	1.17	1.17	1.13	1.13	1.13	2016
2017	1.14	1.14	1.15	1.14	1.13	2017
2018	1.08	1.08	1.00	1.04	1.06	2018
2019	1.02	1.02	1.04	0.99	1.01	2019
2020	1.00	1.00	1.00	1.00	1.00	2020

# Residential Structures Section

The figures in this section include all costs associated with normal construction:

Foundations as required for normal soil conditions. Excavation for foundations, piers, and other foundation components given a fairly level construction site. Floor, wall, and roof structures. Interior floor, wall, and ceiling finishes. Exterior wall finish and roof cover. Interior partitions as described in the quality class. Finish carpentry, doors, windows, trim, etc. Electric wiring and fixtures. Rough and finish plumbing as described in applicable building specifications. Built-in appliances as described in applicable building specifications. All labor

and materials including supervision. All design and engineering fees, if necessary. Permits and fees. Utility hook-ups. Contractors' contingency, overhead and profit.

The square foot costs do not include heating and cooling equipment or the items listed in the section "Additional Costs for Residential Structures" which appear on pages 27 to 31. The costs of the following should be figured separately and added to the basic structure cost: porches, basements, balconies, exterior stairways, built-in equipment beyond that listed in the quality classifications, garages and carports.

## Single Family Residences

Single family residences vary widely in quality and the quality of construction is the most significant factor influencing cost. Residences are listed in six quality classes. Class 1 is the most expensive commonly encountered and Class 6 is the minimum required under most building codes. Nearly all homes built from stock plans or offered to the public by residential tract developers will fall into Class 3, 4, 5, or 6. For convenience, these classes are labeled *Best Standard*, *Good Standard*, *Average Standard* or *Minimum Standard*. Class 1 residences are labeled *Luxury*. Class 2 residences are labeled *Semi-Luxury*. Class 1 and 2 residences are designed by professional architects, usually to meet preferences of the first owner.

The shape of the outside perimeter also has a significant influence on cost. The more complex the shape, the more expensive the structure per square foot of floor. The shape classification of multiple story or split-level homes should be based on the outline formed by the outer-most exterior walls, including the garage area, regardless of the story level. Most residences that fall into Classes 3, 4, 5 or 6 have 4, 6, 8 or 10 corners, as illustrated below. Small insets that do not require a change in the roof line can be ignored when evaluating the outside perimeter.

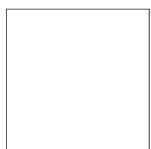
Class 1 and 2 (*Luxury* and *Semi-Luxury*) residences have more than ten corners and are best evaluated by counting the "building masses." A building mass is a group of contiguous rooms on one or more levels with access at varying angles from a common point or

hallway. The illustration at the right below represents a residence with two building masses. Most Class 1 and Class 2 residences have from one to four building masses, ignoring any attached garage. For convenience, cost tables for Class 1 and 2 single family residences with one, two, three or four building masses have been appended to cost tables for Class 3, 4, 5 and 6 residences with 4, 6, 8 and 10 building corners.

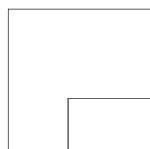
Residences on larger lots often include a separate housekeeping unit, either remote from the main structure (as illustrated below at the right) or joined to the main structure by a hallway (no common wall). Evaluate any separate housekeeping unit as a separate residence. The quality class of separate housekeeping units will usually be the same as the main residence if designed and built at the same time as the main residence.

Residences which have features of two or more quality classes can be placed between two of the six labeled classes. The tables have five half-classes (1 & 2, 2 & 3, etc.) which can be applied to residences with some characteristics of two or more quality classes. If a portion of a residence differs significantly in quality from other portions, evaluate the square footage of each portion separately.

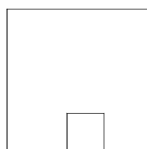
These figures can be applied to nearly all single-family residences built using conventional methods and readily available materials, including the relatively small number of highly decorative, starkly original or exceptionally well-appointed residences.



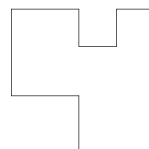
4 corners



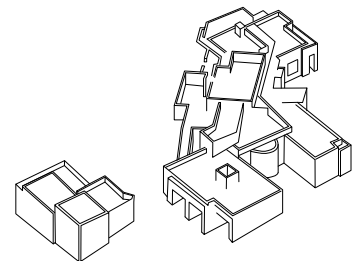
6 corners



8 corners



10 corners



2 building masses and one separate unit

# Single Family Residences

## Quality Classification

	<b>Class 1 Luxury</b>	<b>Class 2 Semi-Luxury</b>	<b>Class 3 Best Std.</b>	<b>Class 4 Good Std.</b>	<b>Class 5 Average Std.</b>	<b>Class 6 Minimum Std.</b>
<b>Foundation</b> (9% of total cost)	Reinforced concrete.	Reinforced concrete.	Reinforced concrete.	Reinforced concrete or concrete block.	Reinforced concrete or concrete block.	Reinforced concrete.
<b>Floor Structure</b> (12% of total cost)	Engineered wood or steel exceeding code minimums.	Engineered wood or steel or reinforced concrete slab.	Engineered wood or steel or reinforced concrete slab.	Wood frame or slab on grade, changes in shape and elevation.	Standard wood frame or slab on grade with elevation changes.	Slab on grade. No changes in elevation.
<b>Wall Framing and Exterior Finish</b> (14% of total cost)	Wood or steel, very irregular walls, stone veneer, many architectural doors and windows.	Wood or steel, irregular shape, masonry veneer, better grade doors and windows.	Wood or steel, several wall offsets, wood or masonry accents, good grade doors and windows.	Wood or steel, stucco or wood siding, some trim or veneer, average doors and windows.	Wood or steel, stucco or wood siding, few offsets, commodity grade doors and windows.	Wood or steel, stucco or hardboard siding, minimum grade doors and windows.
<b>Roof</b> (10% of total cost)	Complex plan, tile, slate or metal, highly detailed.	Multi-level, slate, tile or flat surface, decorative details.	Multi-pitch, shake, tile or flat surface, large closed soffit.	Wood trusses, tile or good shingles, closed soffit.	Wood frame, shingle or built-up cover, open 24" soffit.	Wood frame, composition shingle cover, open soffit.
<b>Floor Finish</b> (5% of total cost)	Terrazzo, marble, granite, or inlaid hardwood or best carpet throughout.	Marble or granite entry, hardwood, good carpet or sheet vinyl elsewhere.	Simulated marble tile entry, good carpet, hardwood or vinyl elsewhere.	Better sheet vinyl and average carpet, some areas with masonry or tile.	Good sheet vinyl and standard carpet, small area with tile or hardwood.	Composition tile or minimum grade sheet vinyl.
<b>Interior Wall and Ceiling Finish</b> (8% of total cost)	Plaster or gypsum wallboard with artistic finish, many offsets and wall openings, decorative details in nearly all rooms.	Plaster on gypsum or metal lath or 2 layers of 5/8" gypsum wallboard, decorative details, many irregular wall openings.	Gypsum wallboard with putty or texture coat finish, some irregular walls, decorative details in living room, entry and kitchen.	1/2" gypsum wallboard with textured finish, several irregular walls and wall openings, some decorative details.	1/2" gypsum wallboard with textured finish, most walls are rectangular, doors and windows are the only openings.	1/2" gypsum wallboard, smooth or orange peel finish. Nearly all walls are regular, no decorative details.
<b>Interior Detail</b> (5% of total cost)	Exposed beams or decorative ceiling, 12' to 16' ceiling in great room, many sky windows, built-in shelving and alcoves for art.	Great room has 12' to 16' ceiling, most rooms have windows on two sides, formal dining area, several framed openings.	Cathedral ceiling at entry, one or more floor level changes, several wall openings or pass-throughs, formal dining area.	8' or 9' ceiling throughout, walk-in closet in master bedroom, separate dining area, some decorative wood trim.	8' or 9' ceiling throughout, sliding mirrored closet doors, standard grade molding and trim, breakfast bar or nook.	Drop ceiling in kitchen, other rooms have 7'6" to 8' ceiling, minimum grade molding and trim.
<b>Bath Detail</b> (4% of total cost)	Custom large tile showers, separate elevated spa in master bathroom.	Large tile showers, at least one bathtub, glass block or large window by each bath.	Tile or fiberglass shower, at least one built-in bathtub, window in bathroom.	Good plastic tub and shower in at least one bathroom, one small window in each bath.	Average plastic tub and shower in at least one bathroom.	Minimum plastic tub and shower in one bathroom.
<b>Kitchen Detail</b> (8% of total cost)	Over 30 LF of deluxe wall and base cabinets, stone counter top, island work area, breakfast bar.	Over 25 LF of good custom base and wall cabinets, synthetic stone counter top, desk and breakfast bar.	Over 20 LF of good stock wall and base cabinets, tile or acrylic counter top, desk and breakfast bar or nook.	Over 15 LF of stock standard grade wall and base cabinets, low-cost tile or acrylic counter top, breakfast nook.	Over 10 LF of stock standard grade wall and base cabinets, low-cost acrylic or laminated plastic counter top.	Less than 10 LF of low-cost wall and base cabinets, laminated plastic counter top, space for table.
<b>Plumbing</b> (12% of total cost)	4 deluxe fixtures per bathroom, more bathrooms than bedrooms.	4 good fixtures per bathroom, more bathrooms than bedrooms.	3 good fixtures per bathroom, as many bathrooms as bedrooms.	3 standard fixtures per bathroom, less bathrooms than bedrooms.	3 standard fixtures per bathroom, less bathrooms than bedrooms.	3 minimum fixtures per bathroom, 2 bathrooms.
<b>Special Features</b> (3% of total cost)	10 luxury built-in appliances, wet bar, home theater, pantry, wine cellar.	8 good built-in appliances, wet bar, walk-in pantry, central vacuum.	6 good built-in appliances, walk-in pantry, wet bar, central vacuum.	5 standard built-in appliances, sliding glass or French doors, laundry room.	4 standard grade kitchen appliances.	4 minimum grade kitchen appliances.
<b>Electrical System</b> (10% of total cost)	Over 100 recessed or track lights, security system, computer network.	80 to 100 recessed lighting fixtures, security system, computer network.	Ample recessed lighting on dimmers, computer network, multiple TV outlets.	Limited recessed lighting on dimmers, multiple TV outlets.	12 lighting fixtures, switch-operated duplex plug outlets in bedrooms.	10 or less lighting fixtures, switch-operated plug outlets in most rooms.
<b>If Exterior Walls are Masonry</b>	Reinforced split face concrete block or brick with face brick veneer.	Reinforced block or brick with masonry veneer or stucco coat.	Textured or coated concrete block or good quality detailed brick.	Colored or coated concrete block or good quality brick.	Colored concrete block or painted common brick.	Painted concrete block or common brick.

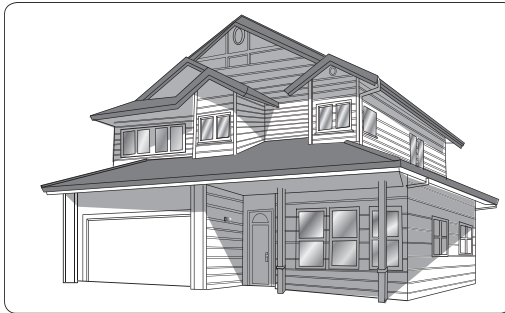
**Note:** Use the percent of total cost to help identify the correct quality classification.

# Single Family Residences

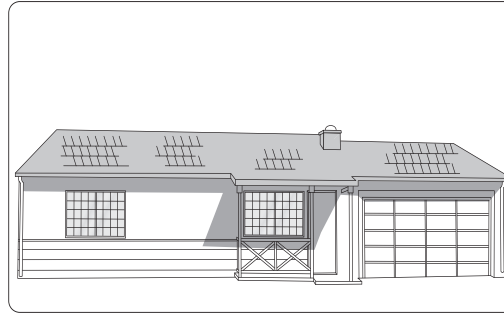
## 4 Corners (Classes 3, 4, 5 and 6) or One Building Mass (Classes 1 and 2 Only)

### Estimating Procedure

1. Establish the structure quality class by applying the information on page 11.
2. Multiply the structure floor area (excluding the garage) by the appropriate square foot cost below.
3. Multiply the total from step 2 by the correct location factor listed on page 7 or 8.
4. Add, when appropriate, the cost of a porch, garage, heating and cooling equipment, basement, fireplace, carport, appliances and plumbing fixtures beyond that listed in the quality classification. See the cost of these items on pages 27 to 31.



**Single Family Residence, Class 4**



**Single Family Residence, Class 6**

### Square Foot Area

Quality Class	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800	2,000
1, Luxury	528.70	506.57	488.28	472.49	460.20	449.23	439.51	430.76	424.23	417.81	411.96	407.00	397.74
1, & 2	459.74	440.50	424.60	410.87	400.20	390.57	382.19	374.57	368.89	363.34	358.16	353.85	345.84
2, Semi-Luxury	321.30	307.87	296.75	287.15	279.69	273.03	267.14	261.83	257.83	253.81	250.36	247.37	241.66
2 & 3	235.84	226.01	217.83	210.83	205.34	200.41	196.07	192.18	189.22	186.36	183.72	181.60	177.43
3, Best Std.	205.81	197.25	190.08	183.99	179.10	174.87	171.12	167.73	165.15	162.65	160.37	158.42	154.82
3 & 4	176.01	168.54	162.50	157.32	153.13	149.50	146.31	143.34	141.20	138.93	137.13	135.44	132.41
4, Good Std.	151.65	145.19	140.03	135.52	132.00	128.86	126.02	123.50	121.57	119.77	118.11	116.57	114.06
4 & 5	136.59	130.85	126.18	122.08	118.87	115.98	113.46	111.31	109.56	107.88	106.41	105.13	102.66
5 Avg. Std.	122.93	117.85	113.58	109.95	107.12	104.52	102.24	100.14	98.62	97.12	95.77	94.65	92.47
5 & 6	106.74	102.28	98.60	95.44	92.91	90.69	88.71	86.89	85.63	84.28	83.26	82.14	80.27
6, Min. Std.	97.04	92.95	89.61	86.73	84.47	82.43	80.66	79.04	77.83	76.61	75.63	74.64	72.93

### Square Foot Area

Quality Class	2,200	2,400	2,600	2,800	3,000	3,200	3,400	3,600	4,000	4,200	4,400	4,600	5,000+
1, Luxury	390.80	384.25	378.97	374.25	370.91	367.80	364.44	361.99	356.89	353.65	350.83	348.39	344.89
1, & 2	339.93	334.14	329.53	325.43	322.51	319.83	316.90	314.76	310.36	307.52	305.07	302.94	299.91
2, Semi-Luxury	237.66	233.52	230.34	227.46	225.39	223.47	221.44	219.98	216.89	214.92	213.19	211.73	209.61
2 & 3	174.36	171.44	169.09	166.99	165.42	163.99	162.59	161.47	159.23	157.79	156.51	155.42	153.87
3, Best Std.	152.17	149.57	147.49	145.73	144.41	143.19	141.86	140.88	138.92	138.93	137.82	136.85	135.50
3 & 4	130.11	127.91	126.17	124.63	123.45	122.35	121.36	120.51	118.82	117.76	116.80	115.99	114.82
4, Good Std.	112.10	110.17	108.72	107.30	106.41	105.45	104.55	103.73	102.34	101.43	100.57	99.89	98.89
4 & 5	100.94	99.31	97.79	96.68	95.76	95.02	94.05	93.50	92.22	91.38	90.68	90.03	89.14
5 Avg. Std.	90.91	89.41	88.19	86.98	86.28	85.53	84.74	84.17	83.02	81.82	81.62	81.06	80.27
5 & 6	78.92	77.61	76.51	75.54	74.93	74.18	73.51	72.98	72.07	71.33	70.86	70.32	69.68
6, Min. Std.	71.64	70.50	69.56	68.74	68.09	67.47	66.88	66.39	65.49	64.82	64.40	63.92	63.31

**Note:** Tract work and highly repetitive jobs may reduce the cost 8 to 12%. Add 4% to the square foot cost of floors above the second floor level. Work outside metropolitan areas may cost 2 to 6% less. When the exterior walls are masonry, add 9 to 10% for class 2 and 1 structures and 5 to 8% for class 3, 4, 5 and 6 structures. The building area includes all full story (7'6" to 9' high) areas within and including the exterior walls of all floor areas of the building, including small inset areas such as entrances outside the exterior wall but under the main roof. For areas with a ceiling height of less than 80", see the section on half-story areas on page 30.

# Single Family Residences

## 10 Corners (Classes 3, 4, 5 and 6) or Four Building Masses (Classes 1 and 2 only)

### Estimating Procedure

1. Establish the structure quality class by applying the information on page 11.
2. Multiply the structure floor area (excluding the garage) by the appropriate square foot cost below.
3. Multiply the total from step 2 by the correct location factor listed on page 7 or 8.
4. Add, when appropriate, the cost of a porch, garage, heating and cooling equipment, basement, fireplace, carport, appliances and plumbing fixtures beyond that listed in the quality classification. See the cost of these items on pages 27 to 31.



**Single Family Residence, Class 2 & 3**



**Single Family Residence, Class 1**

### Square Foot Area

Quality Class	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800	2,000
1, Luxury	561.30	537.83	518.39	503.09	488.61	477.29	467.95	460.03	452.32	445.95	440.35	435.24	426.11
1, & 2	488.11	467.79	450.81	437.49	424.88	415.07	406.89	400.04	393.31	388.26	382.98	378.50	370.55
2, Semi-Luxury	338.19	324.78	313.85	304.26	296.95	290.08	284.40	279.57	274.90	271.01	267.63	264.47	258.93
2 & 3	248.27	238.45	230.40	223.41	217.95	212.91	208.71	205.17	201.79	198.85	196.44	194.12	190.09
3, Best Std.	216.65	208.03	201.04	194.90	190.18	185.84	182.16	179.06	176.11	173.59	171.44	169.45	165.86
3 & 4	185.24	177.75	171.92	166.65	162.65	158.82	155.76	153.07	150.50	148.41	146.54	144.89	141.86
4, Good Std.	159.63	153.26	148.21	143.59	140.04	136.87	134.15	131.97	129.68	127.91	126.29	124.77	122.21
4 & 5	143.77	138.03	133.46	129.35	126.21	123.31	120.87	118.84	116.86	115.25	113.70	112.37	110.10
5 Avg. Std.	129.50	124.22	120.23	116.50	113.66	111.10	108.89	107.02	105.26	103.69	102.55	101.26	99.17
5 & 6	112.31	107.85	104.25	101.10	98.62	96.36	94.52	92.87	91.29	90.00	88.91	87.77	86.08
6, Min. Std.	102.17	98.03	94.85	91.93	89.65	87.59	85.85	84.45	82.97	81.78	80.82	79.83	78.21

### Square Foot Area

Quality Class	2,200	2,400	2,600	2,800	3,000	3,200	3,400	3,600	4,000	4,200	4,400	4,600	5,000+
1, Luxury	419.24	417.40	407.57	402.68	399.16	395.87	392.65	390.08	385.08	381.61	378.55	375.90	372.10
1, & 2	364.59	359.07	354.46	350.12	347.21	344.24	341.49	339.19	334.95	330.98	328.36	326.09	322.86
2, Semi-Luxury	254.76	250.95	247.69	244.76	242.62	240.57	238.64	237.13	234.05	231.96	230.06	228.46	226.17
2 & 3	187.00	184.17	181.79	179.64	178.04	176.62	175.14	174.00	171.83	165.08	163.79	162.62	161.02
3, Best Std.	163.20	160.78	158.69	156.74	155.37	154.05	152.84	151.85	149.96	148.60	147.41	146.39	144.92
3 & 4	139.47	137.45	135.66	134.05	132.86	131.71	130.72	129.82	128.10	126.96	125.95	125.06	123.81
4, Good Std.	120.23	118.44	116.99	115.42	114.43	113.48	112.60	112.01	110.44	109.46	108.20	107.08	106.02
4 & 5	108.34	106.65	105.28	104.00	103.08	102.24	101.44	100.82	99.43	98.54	97.75	97.08	96.09
5 Avg. Std.	97.44	96.05	94.84	93.67	92.80	92.13	91.34	90.83	89.54	88.71	88.01	87.39	86.53
5 & 6	84.63	83.36	82.24	81.24	80.49	79.92	79.27	78.77	77.74	77.05	76.42	75.89	75.15
6, Min. Std.	76.96	75.75	74.81	73.88	73.23	72.65	72.07	71.60	70.68	70.03	69.47	68.98	68.32

**Note:** Tract work and highly repetitive jobs may reduce the cost 8 to 12%. Add 4% to the square foot cost of floors above the second floor level. Work outside metropolitan areas may cost 2 to 6% less. When the exterior walls are masonry, add 9 to 10% for class 2 and 1 structures and 5 to 8% for class 3, 4, 5 and 6 structures. The building area includes all full story (7'6" to 9' high) areas within and including the exterior walls of all floor areas of the building, including small inset areas such as entrances outside the exterior wall but under the main roof. For areas with a ceiling height of less than 80", see the section on half-story areas on page 30.

# Manufactured Housing

## Quality Classification

	<b>Class 1 Best Quality</b>	<b>Class 2 Good Quality</b>	<b>Class 3 Average Quality</b>	<b>Class 4 Low Quality</b>	<b>Class 5 Lowest Quality</b>
<b>Design</b>	Indistinguishable from site-built construction, good floor plan and sight lines, superior fit and finish	Comparable to site-built construction, good floor plan, shelves and alcoves, good fit and finish	Clearly manufactured housing but with good design and materials, adequate fit and finish	Mobile home design, utilitarian floor plan, commodity-grade materials	Poor design, often sold unfinished, common only in Sun Belt states
<b>Roof</b> (12% of total cost)	Complex roof line, 30-year architectural shingles, roof pitch at least 4" in 12", good overhang on all sides, R-38 insulation	Decorative roof line, gable accents, 25-year shingles, 4" in 12" pitch, 12" overhang on all sides, R-33 insulation	Gable accents, 25-year shingles, 4" in 12" pitch, 8" to 12" overhang front and back, R-21 insulation	Simple roof line, less than 4" in 12" pitch, small overhang front and back, R-19 insulation	Straight roof line, minimum pitch, little or no overhang, minimum roof cover, R-7 insulation
<b>Exterior Walls</b> (18% of total cost)	Good fiber-cement siding, 9' to 10' high, decorative trim, 6" exterior walls, R-19 insulation, 7/16" plywood sheathing	Painted fiber cement siding, 9' high, some trim, 6" exterior walls, R-15 insulation, 7/16" OSB sheathing	Good foam-backed vinyl siding, 8' to 9' high, 4" exterior walls, R-13 insulation, 7/16" OSB sheathing	Vinyl siding, 8' high, 4" exterior walls, R-11 insulation, 3/8" plywood sheathing	Hardboard or economy siding, 7' high, 4" exterior walls, R-7 insulation
<b>Doors and Windows</b> (9% of total cost)	Two 36" wide insulated steel panel exterior doors, solid core wood panel interior doors, good hardware, large insulated low-E vinyl sash windows, recessed entry	Two 36" wide insulated steel exterior doors, hollow core wood interior doors, good hardware, good insulated low-E vinyl sash windows, recessed entry	36" wide steel front door with deadbolt, hollow core wood interior doors, average hardware, insulated vinyl windows, recessed entry	36" wide steel front door, hollow core wood interior doors, economy hardware, smaller dual glazed vinyl windows, 6' sliding bedroom door	34" or 32" wide aluminum exterior doors, hollow core wood interior doors, economy hardware, aluminum windows with storm sash
<b>Interior</b> (5% of total cost)	Hardwood paneling or 1/2" gypsum board with good workmanship and trim throughout, coffered/vaulted/beamed ceilings, plank-type acoustical tile, mirrored walls, built-in buffet cabinets, custom drapes, skylights, window sills, good drapes with sheers throughout	Pre-finished hardwood paneling and trim or 1/2" gypsum board in all rooms, vaulted/beamed, ceiling in main rooms, good floor to ceiling drapes over sheer underlays in living room and dining room, several wall mirrors, some acoustic treatments	Pre-finished and grooved hardwood, plywood paneling or 1/2" gypsum board, no exposed fasteners, coordinated drapes in all rooms except kitchen and baths, one vaulted ceiling, acoustic tile, pre-finished wood trim	Pre-finished fire rated plywood paneling or 3/8" gypsum board, some exposed fasteners, acoustical tile ceiling, economy drapes in living room, dining room, and bedrooms, vinyl on composition molding.	Stapled 3/8" vinyl-covered wallboard with battens at seams and corners, exposed fasteners or holding strips, unit may have been sold with interior finishing incomplete.
<b>Floors</b> (8% of total cost)	Hardwood or ceramic tile entry, 30-50 oz. carpet, good vinyl in utility and guest bath. Good vinyl or hardwood in kitchen.	26-30 oz. carpet with 1/2" pad in all rooms except guest bath and utility, vinyl in kitchen, utility, and guest bath	22-26 oz. carpet with 1/2" rebond pad in all rooms except baths and kitchen, vinyl in kitchen and baths	16-22 oz. carpet with 5 lb. pad in living, dining and bedrooms, economy vinyl sheet or tile in other areas	Glued or stapled foam-backed carpet in living room and bedroom, economy vinyl elsewhere
<b>Heating</b> (7% of total cost)	110,000 BTU upflow air-condition-ready forced air furnace with exterior access door, metal ducting to all rooms, fireplace, dual-zone heating	80,000 to 110,000 BTU upflow or downflow air-condition-ready furnace with exterior access door, metal ducting to all rooms, fireplace	80,000 BTU upflow or downflow forced air condition-ready furnace, ducting to all rooms, simulated fireplace	Forced air furnace, fiberglass attic ducting to all rooms, under-door return vents, ready for air conditioning unit.	Forced air furnace, minimum taped fiberglass duct, registers at the room center, return vents under doors
<b>Kitchen</b> (23% of total cost)	18± LF of 25" wide stone or ceramic counter, 4" splash, luxury cabinets, roller drawers, dropped luminous ceiling, island work space, walk-in pantry, name-brand fixtures, cast iron sink, wet bar	16± LF of tile or Corian counter, 4" splash, quality wood cabinets, dropped luminous ceiling, island work space, walk-in pantry, good quality fixtures, stainless or integrated 8" deep sink	14± LF of Corian counter, 2" splash, average quality wood-face cabinets and hardware, built-in range and oven with hood and fan, pantry cabinet, 7" deep stainless or porcelain sink	12± LF laminate counter, smaller commodity-grade cabinets with wood raised panel doors, no lining, built-in range and oven, hood and fan, add for dishwasher if present	10± LF of 24" wide laminate counter, plastic-faced MDF cabinets, stapled and glued, economy range and oven, minimum grade sink and fixtures, add for dishwasher if present
<b>Baths and Plumbing</b> (14% of total cost)	2 to 2¾ baths, 8 fixtures, master bath with two basins, sunken 60" tub, fiberglass shower with glass door, quality medicine cabinets, 6± feet of mirror over 8± feet of cultured marble or ceramic tile lavatory top, decorative faucets, 40-gal. water heater, separate commode closet	2 baths, vent fans, master bath will have two basins, sunken 60" tub and stall shower, quality medicine cabinets and fixtures, cultured marble vanities, good cabinets, 60" one-piece shower in guest bath, 30- to 40-gallon water heater, separate commode closet	2 baths, vent fans, fiberglass shower with glass or plastic door, fiberglass 60" tub, acrylic round toilets, 6 to 8 LF cultured marble vanity in each bath, twin basin master bath with 4± foot mirror, good cabinets, 30- to 40-gallon water heater	1¾ baths, fiberglass shower with plastic door, fiberglass one-piece 54" tub, acrylic round toilets, 4 to 5 linear foot cultured marble vanity with single basin, average quality cabinets and hardware, 30-gallon water heater	1¾ baths, fiberglass 54" one-piece tub and shower with curtain, acrylic round toilets, small 4' plastic marble vanity, minimum quality cabinets and hardware, 20-gallon electric water heater, plastic supply and drain pipe
<b>Bedrooms</b> (4% of total cost)	9 to 14 linear foot floor-to-ceiling sliding mirrored wardrobe doors, or large walk-in closets, phone and cable TV jacks	9 to 14 linear foot floor-to-ceiling mirrored sliding wardrobe doors in master bedroom or walk-in closets, phone and cable TV jacks	10± linear foot wardrobe, floor-to-ceiling mirrored sliding doors in master bedroom, cable TV jacks	8± linear foot wardrobe, pre-finished and grooved plywood doors, mirrored wardrobe door in master bedroom	Five to six linear foot wardrobe, plain plywood sliding doors

# Manufactured Housing

A manufactured home is a structure in one or more sections intended to be delivered for erection as a unit on a construction site. No wheels, axles or towbars are included in these costs. Units can be from 8 to 36 feet wide and up to 80 feet long. Manufactured homes assembled from two or three sections are referred to as double wide or triple wide units. The cost FOB the manufacturer is usually be about 2/3

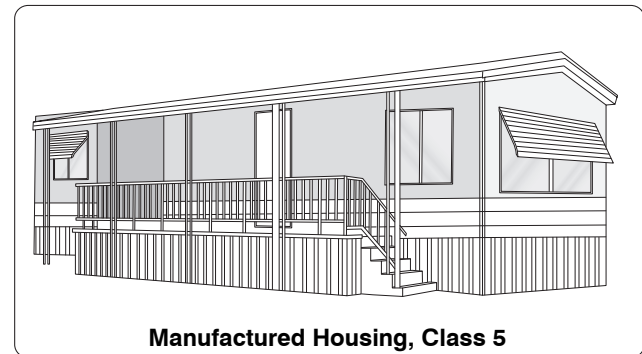
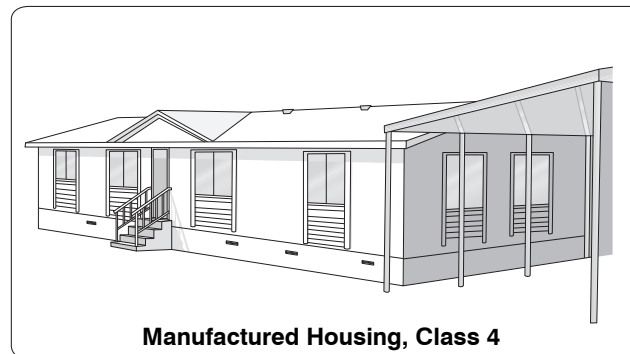
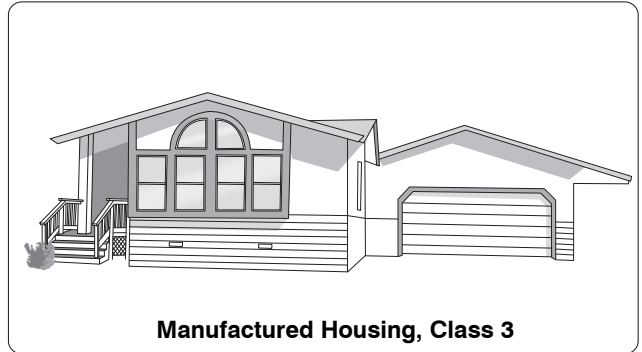
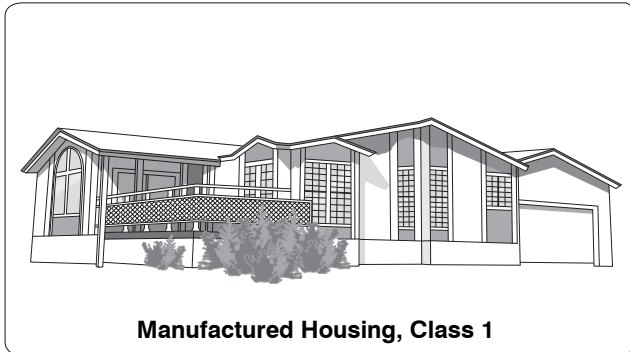
of the installed cost. These figures include all costs: typical delivery to the site, setting on piers, finishing ("button up"), connection to utility lines, permits and inspections. Tip-out, expando, or tag-a-long units have one or more telescoping or attached rooms to the side. Include this floor areas in your calculations. Do not use area modification factors for manufactured housing.

## Estimating Procedure

1. Establish the structure quality class by applying the information on page 16.
2. Multiply the structure floor area (excluding any garage or storage area) by the appropriate square foot cost below.
3. Add, when appropriate, the cost of a permanent foundation, air conditioning, built-ins, porch, skirting, tie-downs, carport, garage or storage building, screen walls and roof snow load rating. See the following page.

### Square Foot Area

Quality Class	500	700	900	1100	1300	1500	1700	1900	2100	2300	2500
1, Best	117.88	116.40	114.98	113.48	112.03	110.58	109.15	107.64	106.23	104.78	103.31
1, & 2	110.96	109.51	108.07	106.68	105.15	103.66	102.16	100.80	99.30	97.88	96.39
2, Good	104.00	102.57	101.14	96.89	95.54	94.16	92.66	91.29	89.81	88.45	87.05
2 & 3	97.16	95.64	94.25	88.52	87.12	85.76	84.36	83.00	81.59	80.17	78.84
3, Average	90.58	89.18	87.60	82.29	78.60	77.20	75.92	74.57	73.21	71.88	70.52
3 & 4	84.77	83.27	81.89	76.78	73.21	71.88	70.52	69.15	67.80	66.46	65.07
4, Low Average	78.92	77.51	76.02	71.20	67.80	66.46	65.07	63.72	62.42	61.05	59.70
4 & 5	74.20	72.68	71.29	66.63	63.41	62.07	60.74	59.38	58.05	56.71	55.29
5 Lowest	69.81	68.40	66.94	60.74	59.38	58.05	56.71	55.29	53.95	52.64	51.29





# Manufactured Housing

## Additional Costs

### Permanent Foundation, in place of setting on piers

Single Story	
Less than 1,000 square feet of floor area	\$8,750 to \$15,450
Over 1,000 square feet to 1,800 square feet of floor area	\$15,450 to \$28,300
Over 1,800 square feet to 2,500 square feet of floor area	\$28,300 to \$46,200

For two-story units, use the footprint of the first floor and select a figure higher in the range of costs. For difficult site conditions, such as a high water table, heavy clay soil, rock, over 3' foundation depth or a sloping site, use a figure in the higher range of costs.

### Air Conditioning

Central air for use by existing furnace and ducts	
2 ton, up to 1,100 S.F.	\$3,600
2-1/2 to 3 ton, over 1,100 to 1,600 S.F.	\$4,130
4 to 5 ton, over 1,600 to 2,500 S.F.	\$4,535 to \$5,340
Cost per unit	
Thru-wall small unit 1/2 H.P., 6,000 Btu	\$1,250
Thru-wall large unit 1 H.P., 12,000 Btu	\$1,660
Evaporative cooler, roof mounted	\$1,180 to \$1,870
Wiring for air conditioning	\$227 to \$478

### Built-Ins

Dishwasher (included in classes 1, 2 & 3)	\$970 - \$1,290
Garbage disposal (included in all base cost, deduct if missing)	\$200 - \$1,200
Built-in microwave oven	\$540 - \$750
Trash compactor	\$880 - \$1,110
Wet bar (walk-up – if not included in class)	\$770 - \$930
Wet bar (walk behind – if not included in class)	\$2,540 - \$2,770
Separate shower in master bath	\$880 - \$1,110
One-half bath: toilet, sink, and pullman	\$1,740 - \$1,850
Bathroom sink or laundry sink	\$370
Fireplace (permanent – includes flue)	\$3,400 - \$4,600
Fireplace (free standing – includes flue)	\$1,550 - \$2,770
Built-in buffet-hutch (included in classes 1 and 2)	\$1,170 - \$1,475
Whirlpool tub in master bath	\$1,420 - \$1,740

### Porches and Decks (no roofs included)

Wood deck at home floor level with handrail, skirting, steps and outdoor carpet, per square foot of porch or deck	\$19.30 to \$27.00
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### Skirting, cost per linear foot of skirt

Lightweight aluminum panels	\$6.70
Lap aluminum siding	\$11.95
Painted hardboard panels	\$15.50
Flagstone-type aluminum panels	\$12.00
Concrete composite panels	\$20.05 - \$25.00
Vinyl panels	\$13.33
Brick or stone	\$21.01

### Storage Buildings, Garages, per S.F. of floor

Aluminum exterior	\$20.80
Enameled steel exterior	\$16.40
Hardboard panel exterior	\$36.45
Figure the garage cost per SF at 2/3 of the home cost per SF.	

### Tie Downs

Cork screw anchor and straps, per each	\$105 - \$155
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### Steps and Rails, per flight to 36" high

Fiberglass steps	\$265 - \$415
Handrail	\$60 - \$90

### Carport, Porch, or Deck Roof, per S.F. covered

Aluminum supports and roof cover, free standing	\$15.05 - \$20.00
Aluminum supports and roof cover, attached to house	\$9.70 - \$14.05
Wood supports and enameled steel cover, free standing	\$17.65 - \$22.00

### Screen Wall Enclosure, per linear foot of 8' wall

Wood frame with screen walls and door	\$69.00
Wood or aluminum frame with screen and glass walls, with door	\$120.00

### Roof Snowload Capability

Cost per square foot of roof	
30 pound design load	\$.76 - \$1.21
40 pound design load	\$1.20 - \$2.18
50 pound design load	\$2.18 - \$2.89
60 pound design load	\$2.88 - \$3.85
80 pound design load	\$3.65 - \$5.80
100 pound design load	\$4.81 - \$6.65
175 pound design load	\$6.10 - \$7.35

# Multi-Family Residences – Apartments

## Quality Classification

	<b>Class 1 Best Quality</b>	<b>Class 2 Good Quality</b>	<b>Class 3 High Average Quality</b>	<b>Class 4 Low Average Quality</b>	<b>Class 5 Minimum Quality</b>
<b>Foundation</b> (9% of total cost)	Conventional crawl space built on a sloping site.	Conventional crawl space built on a sloping site.	Conventional crawl space, footing over 40" deep.	Concrete slab or crawl space with 30" footing.	Concrete slab.
<b>Floor Structure</b> (12% of total cost)	Engineered wood, steel or concrete exceeding code requirements, complex plan, changes in elevation.	Engineered wood or steel built to meet code requirements, changes in shape and elevation.	Standard wood frame with irregular shape and changes in elevation.	Standard wood frame or concrete slab, simple floor plan.	Simple slab on grade with no changes in elevation.
<b>Walls and Exterior Finish</b> (12% of total cost)	Complex wood or light steel frame, stone or masonry veneer, 10' average wall height.	Wood or light steel frame, masonry veneer at entrance, good wood or stucco siding.	Wood or light steel frame, decorative trim at entrance, plywood or stucco siding, simple framing plan.	Wood frame, some ornamental details at entrance, plywood or hardboard siding.	Wood frame, little or no ornamentation, inexpensive stucco or hardboard siding.
<b>Roof &amp; Cover</b> (10% of total cost)	Complex roof plan, good insulation, tile or good shake cover.	Good insulation, good shake, tile or 5-ply built-up roof.	4-ply built-up roof, some portions heavy shake or tile.	4-ply built-up roof, some portions shake or composition shingles.	4-ply built-up roof or minimum grade composition single.
<b>Windows and Doors</b> (5% of total cost)	Many large, good quality vinyl or metal windows, architectural grade doors.	Large, good-quality vinyl or metal windows, commercial grade doors.	Good quality vinyl or metal windows, residential grade doors.	Standard residential-grade doors and windows.	Minimum grade doors and windows.
<b>Interior Finish</b> (8% of total cost)	Gypsum board with heavy texture or plaster, some paneled walls, cathedral ceiling at entry, built-in cases, several wall offsets and level changes.	Textured gypsum board, some paneled walls, decorative or stain grade trim at entrance or living room, several irregular walls and wall openings.	Textured 1/2" gypsum board, several irregular walls or wall openings, few ornamental details, standard grade trim and wall molding.	Textured 1/2" gypsum board, some wall-cover or hardboard paneling, most walls are rectangular, standard grade trim and wall molding.	1/2" gypsum board with smooth finish, no ornamental details, doors and windows are the only wall openings.
<b>Floor Finish</b> (5% of total cost)	Masonry or stone tile entry, good hardwood or deluxe carpet in most rooms, good sheet vinyl in other rooms.	Masonry or tile at entry, hardwood or good carpet in most rooms, sheet vinyl in other rooms.	Hardwood or tile at entry, standard carpet in most rooms, sheet vinyl in kitchen and bath.	Average quality carpet or hardwood in most rooms, sheet vinyl or resilient tile in kitchen.	Minimum carpet or resilient tile throughout.
<b>Interior Features</b> (5% of total cost)	Breakfast bar or nook, formal dining room, one walk-in closet, linen closet utility room or pantry.	Formal dining room ample closet space linen closet and utility closet, extra shelving.	Separate dining area, good closet space, linen closet and small utility closet.	Dining area is in the kitchen, small closet in each bedroom, linen closet.	Dining area is part of kitchen, minimum closet space, minimum shelving.
<b>Bath Detail</b> (4% of total cost)	Good tile shower, 8' simulated marble top.	Tile shower, 6' vanity cabinet and top.	Better vanity cabinet and good wall cabinet.	Good vanity cabinet, good medicine cabinet.	Vanity and one small medicine cabinet.
<b>Kitchen</b> (8% of total cost)	16 LF of better hardwood wall and base cabinets, synthetic stone top, 6 very good built-in appliances.	12 LF of good hardwood wall and base cabinets, tile or acrylic top, 5 good built-in appliances.	8 LF of standard hardwood wall and base cabinets, acrylic top, 4 standard grade built-in appliances.	6 LF of low-cost wall and base cabinets, laminate counter top, 4 standard grade appliances.	5 LF of low-cost wall & base cabinets, laminate counter top, low cost appliances.
<b>Electrical</b> (10% of total cost)	Ample recessed lighting, task lighting in kitchen and bath, security & computer, networks, good chandelier.	Recessed lighting in most rooms, good task lighting in kitchen & bath, security & computer networks.	Recessed lighting in kitchen and living room, switched receptacles in bedrooms, wired for cable TV.	Low-cost recessed lighting in kitchen and living room, switched receptacles in other rooms, cable TV.	Fluorescent ceiling fixture in kitchen, switched receptacles in other rooms.
<b>Plumbing</b> (12% of total cost)	Four excellent fixtures per bathroom, copper supply and drain lines.	Three good fixtures per bathroom, copper supply and drain lines.	Three standard fixtures per bathroom, copper supply and plastic drain lines.	Three low cost fixtures per bathroom, plastic supply and drain lines.	Three minimum-grade fixtures per bathroom, plastic supply & drains.

Plumbing costs assume 1 bathroom per unit. See page 30 for the costs of additional bathrooms.

**For Masonry Walls** Good textured block, tile or decorative brick. Colored or detailed block tile or decorative brick. Colored concrete block, tile or decorative brick. Colored concrete block or brick. Concrete block or common brick.

When masonry walls are used in lieu of wood or light steel frame walls, add 9% to the appropriate S.F. cost.

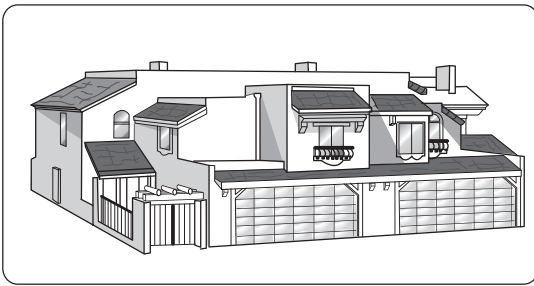
**Note:** Use the percent of total cost to help identify the correct quality classification. Exceptional class multi-family residences have architectural details and features uncommon in conventional apartment buildings. Many exceptional class multi-family structures are designed for sale or conversion to condominium ownership.

# Multi-Family Residences – Apartments

## 2 or 3 Units

### Estimating Procedure

1. Establish the structure quality class by applying the information on page 19.
2. Multiply the average unit area by the appropriate square foot cost below. The average unit area is found by dividing the building area on all floors by the number of units in the building. The building area should include office and utility rooms, interior hallways and interior stairways.
3. Multiply the total from step 2 by the correct location factor listed on page 7 or 8.
4. Add, when appropriate, the cost of balconies, porches, garages, heating and cooling equipment, basements, fireplaces, carports, appliances and plumbing fixtures beyond that listed in the quality classification. See the cost of these items on pages 27 to 31.
5. Costs assume one bathroom per unit. Add the cost of additional bathrooms from page 30.



Multi-Family, Class 2



Multi-Family, Class 4

### Average Unit Area in Square Feet

Quality Class	400	450	500	550	600	650	700	750	800	900	1,000
Exceptional	232.68	222.48	216.93	212.00	208.23	204.79	202.22	199.26	197.53	194.14	190.96
1, Best	204.43	195.41	190.56	186.23	182.82	179.95	177.66	175.05	173.56	170.46	167.80
1, & 2	179.28	171.38	167.08	163.25	160.40	157.81	155.76	153.61	152.18	149.42	147.08
2, Good	156.87	150.02	146.23	142.95	140.36	138.04	136.33	134.40	133.17	130.78	128.74
2 & 3	143.46	137.13	133.79	130.66	128.34	126.36	124.67	122.97	121.81	119.72	117.76
3, Hi Average	131.29	125.43	122.34	119.66	117.48	115.59	114.00	112.55	111.44	109.43	107.73
3 & 4	121.21	115.85	113.02	110.38	108.41	106.77	105.38	103.86	102.94	101.07	99.48
4, Lo Average	111.98	107.00	104.32	101.93	100.14	98.53	97.20	95.88	95.05	93.38	91.82
4 & 5	103.41	98.80	96.34	94.16	92.41	90.95	89.83	88.54	87.78	86.14	84.74
5 Minimum	95.42	91.29	88.97	86.94	85.45	84.03	82.88	81.86	81.05	79.48	78.30

### Average Unit Area in Square Feet

Quality Class	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000	2,200
Exceptional	188.78	186.74	185.09	183.71	182.52	181.44	180.52	179.70	178.93	178.34	177.79
1, Best	165.69	164.16	162.52	161.36	160.27	159.34	158.54	157.96	157.18	156.62	156.19
1, & 2	145.35	143.87	142.55	141.45	140.66	139.75	139.01	138.47	137.85	137.48	137.01
2, Good	127.15	125.92	124.79	123.84	123.07	122.29	121.71	121.13	120.64	120.18	119.87
2 & 3	116.42	115.07	114.23	113.25	112.56	111.86	111.31	110.91	110.35	110.02	109.66
3, Hi Average	106.47	105.38	104.43	103.56	102.95	102.33	101.80	101.48	100.90	100.60	100.31
3 & 4	98.32	97.22	96.38	95.63	95.09	94.46	94.11	93.56	93.18	92.94	92.62
4, Lo Average	90.79	89.83	88.98	88.31	87.80	87.26	86.79	86.41	86.05	85.78	85.52
4 & 5	83.81	82.97	82.27	81.53	81.09	80.56	80.14	79.86	79.44	79.22	78.98
5 Minimum	77.32	76.61	75.90	75.35	74.82	74.35	74.02	73.64	73.42	73.08	72.93

**Note:** Work outside metropolitan areas may cost 2 to 6% less. Add 2% to the costs for second floor areas and 4% for third floor areas. Add 9% when the exterior walls are masonry.

## Suburban Stores

Suburban stores are usually built as part of shopping centers. They differ from urban stores in that they are built in open areas where modern construction techniques, equipment and more economical designs can be used. They are also subject to greater variations in size and shape than are urban stores. Do not use the figures in this section for department stores, discount houses or urban stores. These building types are evaluated in other sections.

**Costs identified “building shell only” do not include permanent partitions, display fronts or finish materials on the front of the building. Costs for “multi-unit buildings” include partitions, display fronts and finish materials on the front of the building. All figures include the following costs:**

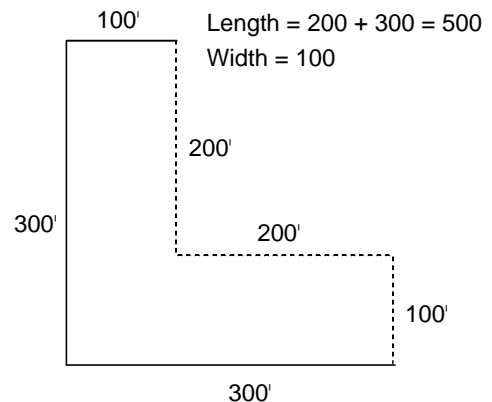
1. Foundations as required for normal soil conditions.
2. Floor, rear wall, side wall and roof structures.
3. A front wall consisting of vertical support columns or pilasters and horizontal beams spanning the area between these members, leaving an open space to receive a display front.
4. Interior floor, wall and ceiling finishes.
5. Exterior wall finish on the side and rear walls.
6. Roof cover.
7. Basic lighting and electrical systems.
8. Rough and finish plumbing.
9. A usual or normal parapet wall.
10. Design and engineering fees.
11. Permits and fees.
12. Utility hook-ups.
13. Contractor's contingency, overhead and mark-up.

**The in-place costs of these extra components should be added to the basic building cost to arrive at total structure cost. See the section “Additional Costs for Commercial, Industrial and Public Structures” on page 236.**

1. Heating and air conditioning systems.
2. Fire sprinklers.
3. All display front components (shell-type buildings only).
4. Finish materials on the front wall of the building (shell-type building only).
5. Canopies.
6. Interior partitions (shell-type buildings only).
7. Exterior signs.
8. Mezzanines and basements.
9. Loading docks and ramps.
10. Miscellaneous yard improvements.
11. Communications systems.

**For valuation purposes suburban stores are divided into two building types: masonry or concrete frame, or wood or wood and steel frame. Each building type is divided into four shape classes:**

1. Buildings in which the depth is greater than the front.
2. Buildings in which the front is between one and two times the depth.
3. Buildings in which the front is between two and four times the depth.
4. Buildings in which the front is greater than four times the depth. Angular buildings should be classed by comparing the sum of the length of all wings to the width of the wings. All areas should be included, but no area should be included as part of two different wings. Note the example at the right.



# Suburban Stores – Masonry or Concrete

## Quality Classification

	<b>Class 1 Best Quality</b>	<b>Class 2 Good Quality</b>	<b>Class 3 Average Quality</b>	<b>Class 4 Low Quality</b>
<b>Foundation</b> (15% of total cost)	Reinforced concrete.	Reinforced concrete.	Reinforced concrete.	Reinforced concrete.
<b>Floor Structure</b> (15% of total cost)	6" reinforced concrete on 6" rock base.	6" reinforced concrete on 6" rock base.	6" reinforced concrete on 6" rock base.	4" reinforced concrete on 6" rock base.
<b>Wall Structure</b> (15% of total cost)	8" reinforced decorative concrete block, 6" concrete tilt-up or 8" reinforced brick.	8" reinforced decorative concrete block, 6" concrete tilt-up or 8" reinforced brick.	8" reinforced concrete block, 6" concrete tilt-up or 8" reinforced common brick.	8" reinforced concrete block or 6" concrete tilt-up.
<b>Roof</b> (15% of total cost)	Glu-lam or steel beams on steel intermediate columns. Panelized roof system, 1/2" plywood sheathing, 5 ply built-up roof with insulation.	Glu-lam or steel beams on steel intermediate columns. Panelized roof system, 1/2" plywood sheathing, 5 ply built-up roof with insulation.	Glu-lam beams on steel intermediate columns. Panelized roof system, 1/2" plywood sheathing, 4 ply built-up roof.	Glu-lam beams on steel intermediate columns. Panelized roof system, 1/2" plywood sheathing, 4 ply built-up roof.
<b>Floor Finish</b> (5% of total cost)	Terrazzo, sheet vinyl or very good carpet.	Resilient tile with 50% solid vinyl tile, terrazzo, or good carpet.	Composition tile.	Minimum grade tile.
<b>Interior Wall Finish</b> (5% of total cost)	Inside of exterior walls furred out with gypsum wallboard or lath and plaster cover. Exterior walls and partitions finished with vinyl wall covers and hardwood veneers.	Interior stucco on inside of exterior walls, gypsum wallboard and texture or paper on partitions, some vinyl wall cover and plywood paneling.	Interior stucco on inside of exterior walls, gypsum wallboard and texture and paint on partitions.	Paint on inside of exterior walls, gypsum wallboard with texture and paint on partitions.
<b>Ceiling Finish</b> (5% of total cost)	Suspended good grade acoustical tile with gypsum wallboard backing.	Suspended acoustical tile with concealed grid system.	Suspended acoustical tile with exposed grid system.	Exposed beams with ceiling tile or paint.
<b>Lighting</b> (5% of total cost)	Recessed fluorescent lighting in modular plastic panels.	Continuous recessed 3 tube fluorescent strips with egg crate diffusers, 8' o.c.	Continuous 3 tube fluorescent strips with egg crate diffusers, 8' o.c.	Continuous exposed 2 tube fluorescent strips, 8' o.c.
<b>Exterior</b> (8% of total cost)	Face brick or stone veneer.	Exposed aggregate, some stone veneer.	Paint on exposed areas, some exposed aggregate.	Paint on exposed areas.
<b>Plumbing</b> (12% of total cost)	6 good fixtures per 5,000 S.F. of floor area, metal toilet partitions.	6 standard fixtures per 5,000 S.F. of floor area, metal toilet partitions.	4 standard fixtures per 5,000 S.F. of floor area, metal toilet partitions.	4 standard fixtures per 5,000 S.F. of floor area wood toilet partitions.

**Note:** Use the percent of total cost to help identify the correct quality classification.

The costs on pages 90 to 93, and 95 to 102 include display fronts. The quality of the display front will help establish the quality class of the building as a whole. Display fronts are classified as follows:

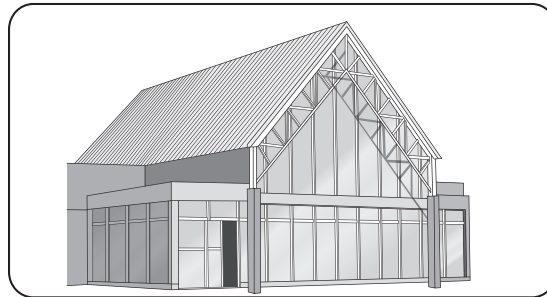
	<b>Class 1 Best Quality</b>	<b>Class 2 Good Quality</b>	<b>Class 3 Average Quality</b>	<b>Class 4 Low Quality</b>
<b>Bulkhead</b> (0 to 4' high)	Vitrolite, domestic marble or stainless steel.	Black flagstone, terrazzo or good ceramic tile.	Average ceramic tile, Roman brick or imitation flagstone.	Stucco, wood or common brick.
<b>Window Frame</b>	Bronze or stainless steel.	Heavy aluminum.	Aluminum.	Light aluminum with with stops.
<b>Glass</b>	1/4" float glass with mitered joints.	1/4" float glass, some mitered joints.	1/4" float glass.	Crystal or 1/4" float glass.
<b>Sign Area</b> (4' high)	Vitrolite, domestic marble or stainless steel.	Black flagstone, terrazzo, or good ceramic tile.	Average ceramic tile, Roman brick or imitation flagstone.	Stucco.
<b>Pilasters</b>	Vitrolite, domestic marble.	Black flagstone, terrazzo or good ceramic tile.	Average ceramic tile, Roman brick or imitation flagstone.	Stucco.

# Suburban Stores – Masonry or Concrete

## Building Shell Only

### Estimating Procedure

1. Use these figures to estimate the cost of shell-type buildings without permanent partitions, display fronts or finish material on the front wall of the building.
2. Establish the structure quality class by applying the information on page 89.
3. Compute the building floor area. This should include everything within the exterior walls and all inset areas outside the main walls but under the main roof.
4. Add to or subtract from the cost below the appropriate amount from the Wall Height Adjustment Table (at the bottom of this page) if the wall height is more or less than 16 feet.
5. Multiply the adjusted square foot cost by the building area.
6. Deduct, if appropriate, for common walls, using the figures at the bottom of page 91.
7. Multiply the total cost by the location factor on page 7 or 8.
8. Add the cost of the appropriate additional components from page 236 to 248: heating and cooling equipment, fire sprinklers, display fronts, finish materials on the front wall, canopies, interior partitions, exterior signs, mezzanines and basements, loading docks and ramps, yard improvements, and communication systems.



**Suburban Store, Class 2**

### Depth greater than length of front – Square Foot Area

Quality Class	500	1,000	2,000	2,500	3,000	4,000	5,000	7,500	10,000	12,500	15,000
1, Best	204.34	170.43	146.49	140.44	135.95	129.67	125.35	118.65	114.66	111.97	109.92
1 & 2	189.14	157.78	135.67	130.00	125.83	119.98	116.01	109.84	106.10	103.62	101.76
2, Good	177.06	147.71	126.94	121.68	117.82	112.39	108.65	102.84	99.35	97.02	95.26
2 & 3	167.65	139.87	120.26	115.27	111.60	106.40	102.88	97.38	94.12	91.87	90.21
3, Average	161.12	134.42	115.52	110.71	107.22	102.24	98.83	93.56	90.45	88.33	86.71
3 & 4	151.85	126.68	108.96	104.36	101.01	96.31	93.12	88.18	85.24	83.20	81.71
4, Low	144.65	120.59	103.67	99.37	96.22	91.72	88.65	84.00	81.13	79.25	77.81

### Length of front between 1 and 2 times depth – Square Foot Area

Quality Class	500	1,000	2,000	3,000	5,000	7,500	10,000	15,000	20,000	25,000	35,000
1, Best	195.24	163.98	142.05	132.32	122.66	116.48	112.79	108.48	105.96	104.14	101.84
1 & 2	180.41	151.60	131.21	122.28	113.24	107.65	104.26	100.26	97.87	96.24	94.04
2, Good	168.90	141.89	122.91	114.48	106.03	100.76	97.55	93.87	91.65	90.05	88.09
2 & 3	159.85	134.30	116.28	108.35	100.39	95.28	92.36	88.76	86.66	85.28	83.35
3, Average	153.87	129.27	111.97	104.31	96.58	91.85	88.90	85.49	83.46	82.12	80.23
3 & 4	145.78	122.50	106.07	98.78	91.52	87.03	84.26	80.98	79.09	77.80	76.06
4, Low	137.54	115.55	100.03	93.14	86.31	82.05	79.47	76.41	74.59	73.30	71.71

**Wall Height Adjustment:** Costs above are based on a 16' wall height, measured from the bottom of the floor slab or floor joists to the top of the roof cover. Add or subtract the amount listed to or from the square foot cost for each foot more or less than 16 feet.

Area	500	1,000	2,000	2,500	3,000	4,000	5,000	7,500	10,000	12,500
Cost	2.16	1.97	1.85	1.64	1.45	1.29	1.20	.95	.82	.72

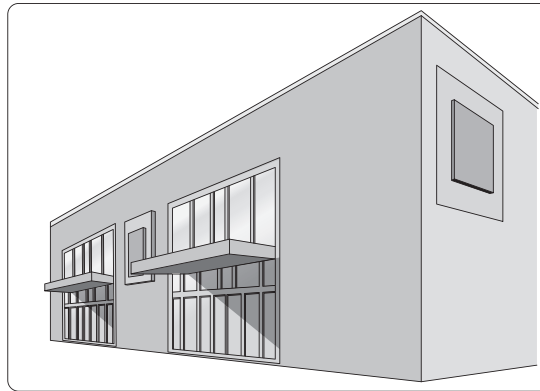
Area	15,000	20,000	25,000	30,000	35,000	50,000	70,000	75,000	100,000	150,000
Cost	.68	.67	.61	.59	.55	.49	.42	.40	.29	.27

# Suburban Stores – Masonry or Concrete

## Building Shell Only

### Estimating Procedure

1. Use these figures to estimate the cost of shell-type buildings without permanent partitions, display fronts or finish material on the front wall of the building.
2. Establish the structure quality class by applying the information on page 89.
3. Compute the building floor area. This should include everything within the exterior walls and all inset areas outside the main walls but under the main building roof.
4. Add to or subtract from the cost below the appropriate amount from the Wall Height Adjustment Table on page 90 if the wall height is more or less than 16 feet.
5. Multiply the adjusted square foot cost by the building area.
6. Deduct, if appropriate, for common walls, using the figures at the bottom of this page.
7. Multiply the total cost by the location factor on page 7 or 8.
8. Add the cost of the appropriate additional components from page 236 to 248: heating and cooling equipment, fire sprinklers, display fronts, finish materials on the front wall, canopies, interior partitions, exterior signs, mezzanines and basements, loading docks and ramps, yard improvements, and communication systems.



**Suburban Store, Class 1**

### Length between 2 and 4 times depth – Square Foot Area

Quality Class	1,000	2,000	3,000	5,000	7,500	10,000	15,000	20,000	30,000	50,000	70,000
1, Best	170.09	146.72	136.38	126.02	119.45	115.61	111.03	107.97	104.94	101.70	99.90
1 & 2	156.65	135.07	125.55	116.03	110.03	106.46	102.16	99.66	96.61	93.65	91.98
2, Good	145.83	125.79	116.91	108.02	102.41	99.14	95.14	92.77	89.96	87.18	85.70
2 & 3	138.14	119.15	110.72	102.34	97.05	93.87	90.11	87.91	85.27	82.58	81.13
3, Average	132.66	114.48	106.49	98.32	93.28	90.15	86.57	84.51	81.88	79.29	77.98
3 & 4	126.02	108.74	101.03	93.36	88.55	85.69	82.20	80.17	77.80	75.32	73.99
4, Low	118.98	102.66	95.36	88.15	83.58	80.87	77.66	75.75	73.38	71.15	69.96

### Length greater than 4 times depth – Square Foot Area

Quality Class	2,000	3,000	5,000	10,000	15,000	20,000	30,000	50,000	75,000	100,000	150,000
1, Best	154.76	143.09	131.41	119.63	114.42	111.32	107.68	103.99	101.69	100.30	98.71
1 & 2	140.96	130.32	119.65	108.89	104.16	101.43	98.06	94.67	92.57	91.34	89.87
2, Good	131.18	121.25	111.30	101.37	96.98	94.36	91.24	88.09	86.13	84.94	83.54
2 & 3	124.15	114.75	105.38	95.93	91.78	89.30	86.34	83.43	81.53	80.39	79.14
3, Average	119.25	110.30	101.24	92.20	88.15	85.76	82.95	80.15	78.37	77.30	76.03
3 & 4	112.74	104.28	95.76	87.15	83.32	81.10	78.41	75.77	74.04	73.06	71.90
4, Low	106.73	98.72	90.59	82.51	78.87	76.78	74.24	71.71	70.11	69.19	67.98

**Perimeter Wall Adjustment:** A common wall exists when two buildings share one wall. Adjust for common walls by deducting \$291 per linear foot of common wall from the total structure cost. In some structures one or more walls are not owned at all. In this case, deduct \$570 per linear foot of wall not owned.



# Suburban Stores – Masonry or Concrete

## Multi-Unit Buildings

### Estimating Procedure

1. Use these square foot costs to estimate the cost of stores designed for multiple occupancy. These costs include all components of shell buildings plus the cost of display fronts, finish materials on the front of the building and normal interior partitions.
2. Establish the structure quality class by applying the information on page 89. Evaluate the quality of the display front to help establish the correct quality class of the building as a whole. See also pages 242 to 245.
3. Compute the building floor area. This should include everything within the building exterior walls and all inset areas outside the main walls but under the main building roof.
4. Add to or subtract from the cost below the appropriate amount from the Wall Height Adjustment Table (at the bottom of this page) if the wall height is more or less than 16 feet.
5. Multiply the adjusted square foot cost by the building area.
6. Deduct, if appropriate, for common walls, using the figures at the bottom of page 93.
7. Multiply the total cost by the location factor on page 7 or 8.
8. Add the cost of the appropriate additional components from page 236 to 248: heating and cooling equipment, fire sprinklers, canopies, exterior signs, mezzanines and basements, loading docks and ramps, yard improvements, and communications systems.

### Depth greater than length of front – Square Foot Area

Quality Class	500	1,000	2,000	2,500	3,000	4,000	5,000	7,500	10,000	12,500	15,000
1, Best	290.98	237.51	199.81	190.17	183.04	173.17	166.38	155.77	149.45	145.22	142.02
1 & 2	260.61	212.79	179.00	170.39	163.99	155.13	149.00	139.60	133.94	130.10	127.23
2, Good	234.23	191.15	160.83	153.07	147.40	139.37	133.88	125.41	120.33	116.88	114.28
2 & 3	221.61	175.64	147.72	140.64	135.35	128.01	122.99	115.12	110.53	107.33	105.02
3, Average	199.01	162.44	136.69	130.10	125.28	118.44	113.75	106.57	102.26	99.35	97.17
3 & 4	184.55	150.66	126.69	120.62	116.11	109.84	105.47	98.78	94.80	92.10	90.05
4, Low	170.00	138.76	116.74	111.13	107.03	101.10	97.23	91.05	87.34	84.83	83.01

### Length of front between 1 and 2 times depth – Square Foot Area

Quality Class	500	1,000	2,000	3,000	5,000	7,500	10,000	15,000	20,000	25,000	35,000
1, Best	320.11	259.15	215.78	196.43	177.00	164.71	157.35	148.67	143.47	139.87	135.26
1 & 2	284.49	230.31	191.73	174.58	157.29	146.37	139.85	132.07	127.47	124.29	120.21
2, Good	252.98	204.85	170.53	155.25	139.84	130.15	124.33	117.51	113.36	110.57	106.87
2 & 3	230.87	186.94	155.62	141.69	127.65	118.78	113.52	107.23	103.45	100.93	97.50
3, Average	219.71	177.90	148.11	134.82	121.50	113.10	108.05	102.03	98.51	96.03	92.80
3 & 4	207.90	168.34	140.14	127.62	115.01	106.97	102.26	96.55	93.17	90.87	87.87
4, Low	189.67	153.60	127.86	116.42	104.88	97.62	93.29	88.09	85.02	82.92	80.17

**Wall Height Adjustment:** Costs above are based on a 16' wall height, measured from the bottom of the floor slab or floor joists to the top of the roof cover. Add or subtract the amount listed to or from the square foot cost for each foot more or less than 16 feet.

### Square Foot Area

Class	2,000	3,000	5,000	10,000	15,000	25,000	35,000	50,000	75,000	100,000	150,000
1, Best	8.26	6.72	5.21	3.64	3.05	2.34	2.01	1.74	1.48	1.41	1.31
2, Good	6.16	5.04	3.87	2.70	2.33	1.74	1.48	1.34	1.13	1.06	.94
3, Average	4.73	3.85	2.98	2.12	1.75	1.40	1.20	1.00	.87	.84	.78
4, Low	3.72	3.02	2.34	1.62	1.41	1.07	.88	.82	.73	.64	.62

# Suburban Stores – Masonry or Concrete

## Multi-Unit Buildings

### Estimating Procedure

1. Use these square foot costs to estimate the cost of stores designed for multiple occupancy. These costs include all components of shell buildings plus the cost of display fronts, finish materials on the front of the building and normal interior partitions.
2. Establish the structure quality class by applying the information on page 89. Evaluate the quality of the display front to help establish the correct quality class of the building as a whole. See also pages 236 to 248.
3. Compute the building floor area. This should include everything within the building exterior walls and all inset areas outside the main walls but under the main building roof.
4. Add to or subtract from the cost below the appropriate amount from the Wall Height Adjustment Table (at the bottom of page 92) if the wall height is more or less than 16 feet.
5. Multiply the adjusted square foot cost by the building area.
6. Deduct, if appropriate, for common walls, using the figures at the bottom of this page.
7. Multiply the total cost by the location factor on page 7 or 8.
8. Add the cost of the appropriate additional components from page 236 to 248: heating and cooling equipment, fire sprinklers, canopies, exterior signs, mezzanines and basements, loading docks and ramps, yard improvements, and communications systems.



**Suburban Store, Class 3**



**Suburban Store, Class 4**

### Length of front between 2 and 4 times depth – Square Foot Area

Quality Class	1,000	2,000	3,000	5,000	7,500	10,000	15,000	20,000	30,000	50,000	70,000
1, Best	292.28	239.74	216.34	192.74	177.80	168.88	158.36	151.98	144.53	136.95	132.93
1 & 2	260.56	213.78	192.91	171.88	158.55	150.59	141.14	135.55	128.81	122.11	118.50
2, Good	230.85	189.34	170.84	152.19	140.39	133.35	125.01	120.04	114.10	108.11	104.93
2 & 3	209.42	171.85	155.09	138.18	127.45	121.07	113.51	108.97	103.51	98.16	95.26
3, Average	197.27	156.99	141.69	126.28	116.38	110.60	103.65	99.52	94.64	89.68	87.04
3 & 4	176.56	144.87	130.65	116.47	107.39	102.06	95.66	91.86	87.27	82.72	80.34
4, Low	161.60	132.55	119.63	106.62	98.34	93.39	87.48	84.04	79.87	75.75	73.50

### Length of front greater than 4 times depth – Square Foot Area

Quality Class	2,000	3,000	5,000	10,000	15,000	20,000	30,000	50,000	75,000	100,000	150,000
1, Best	267.98	239.15	210.34	181.66	168.96	161.47	152.59	143.67	138.08	134.72	130.82
1 & 2	237.02	211.49	186.02	160.61	149.45	142.83	134.99	127.12	122.12	119.16	115.70
2, Good	209.60	187.02	164.56	142.08	132.22	126.33	119.32	112.42	107.99	105.42	102.32
2 & 3	189.86	169.44	149.08	128.69	119.78	114.44	108.10	101.78	97.85	95.50	92.68
3, Average	173.82	155.10	136.41	117.80	109.64	104.72	98.94	93.17	89.51	87.35	84.83
3 & 4	160.48	143.20	125.94	108.78	101.21	96.69	91.34	86.02	82.69	80.62	78.31
4, Low	146.43	130.64	114.94	99.25	92.36	88.24	83.32	78.50	75.47	73.59	71.49

**Perimeter Wall Adjustment:** A common wall exists when two buildings share one wall. Adjust for common walls by deducting \$295 per linear foot of common wall from the total structure cost. In some structures one or more walls are not owned at all. In this case, deduct \$600 per linear foot of wall not owned.

# Suburban Stores – Wood or Wood and Steel Frame

## Quality Classification

	<b>Class 1 Best Quality</b>	<b>Class 2 Good Quality</b>	<b>Class 3 Average Quality</b>	<b>Class 4 Low Quality</b>
<b>Foundation</b> (15% of total cost)	Reinforced concrete.	Reinforced concrete.	Reinforced concrete.	Reinforced concrete.
<b>Floor Structure</b> (15% of total cost)	6" reinforced concrete on 6" rock base.	6" reinforced concrete on 6" rock base.	6" reinforced concrete on 6" rock base.	4" reinforced concrete on 6" rock base.
<b>Wall Structure</b> (15% of total cost)	2" x 6" - 16" o.c.	2" x 6" - 16" o.c.	2" x 6" - 16" o.c.	2" x 4" - 16" o.c.
<b>Roof</b> (15% of total cost)	Glu-lams or steel beams on steel intermediate columns. Panelized roof system, 1/2" plywood sheathing, 5 ply built-up roof with insulation.	Glu-lams or steel beams on steel intermediate columns. Panelized roof system, 1/2" plywood sheathing, 5 ply built-up roof with insulation.	Glu-lams on steel intermediate columns.  Panelized roof system, 1/2" plywood sheathing, 4 ply built-up roof.	Glu-lams on steel intermediate columns.  Panelized roof system, 1/2" plywood sheathing, 4 ply built-up roof.
<b>Floor Finish</b> (5% of total cost)	Terrazzo, sheet vinyl, or very good carpet.	Resilient tile with 50% solid vinyl tile, terrazzo, or good carpet.	Composition tile.	Minimum grade tile.
<b>Interior Wall Finish</b> (5% of total cost)	Gypsum wallboard or lath and plaster on exterior walls and partitions, finished with vinyl wall covers and hardwood veneers.	Gypsum wallboard, texture and paper on exterior walls and partitions, some vinyl wall cover and plywood paneling.	Gypsum wallboard, texture and paint on interior walls and partitions.	Gypsum wallboard, texture and paint on interior walls and partitions.
<b>Ceiling Finish</b> (5% of total cost)	Suspended good grade acoustical tile with gypsum board backing.	Suspended acoustical tile with concealed grid system.	Suspended acoustical tile with exposed grid system.	Exposed beams with ceiling tile or painted.
<b>Lighting</b> (5% of total cost)	Recessed fluorescent lighting in modular plastic panels.	Continuous recessed 3 tube fluorescent strips with egg crate diffusers, 8' o.c.	Continuous 3 tube fluorescent strips with egg crate diffusers, 8' o.c.	Continuous exposed 2 tube fluorescent strips, 8' o.c.
<b>Exterior</b> (8% of total cost)	Face brick or stone veneer.	Wood siding, some stone veneer.	Stucco on exposed areas, some brick trim.	Stucco on exposed areas.
<b>Plumbing</b> (12% of total cost)	6 good fixtures per 5,000 S.F. of floor area, metal toilet partitions.	6 standard fixtures per 5,000 S.F. of floor area, metal toilet partitions.	4 standard fixtures per 5,000 S.F. of floor area, metal toilet partitions.	4 standard fixtures per 5,000 S.F. of floor area wood toilet partitions.

**Note:** Use the percent of total cost to help identify the correct quality classification

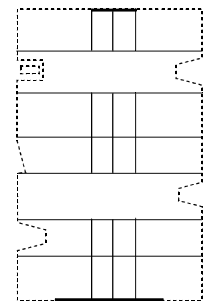
### Strip and Island Suburban Stores

For estimating purposes, wood frame suburban stores should be divided into strip type units or island type units. Strip type buildings have a front wall made up of display fronts. The side and rear walls, except for delivery or walk-through doors, are made up of solid, continuous wood frame walls. If there are any display areas in the sides or rear of these buildings, the cost of the display front must be added to the building cost and the cost of the wall that it replaces must be deducted from the building costs.

Island type suburban store buildings have display fronts on the major portion of all four sides. Stores may be arranged so that one store fronts on two sides or they may be partitioned in such a way that there are two separate stores fronting on each side of the building.



**Strip Type**



**Island Type**

# Suburban Stores – Wood or Wood and Steel Frame

## Building Shell Only, Island Type

### Estimating Procedure

1. Use these figures to estimate the cost of shell-type buildings without permanent partitions, display fronts or finish material on the front wall of the building.
2. Establish the structure quality class by applying the information on page 94.
3. Compute the building floor area. This should include everything within the exterior walls and all inset areas outside the main walls but under the main roof.
4. Add to or subtract from the square foot cost below the appropriate amount from the Wall Height Adjustment Table (at the bottom of this page) if the wall height is more or less than 16 feet.
5. Multiply the adjusted square foot cost by the building area.
6. Deduct, if appropriate, for common walls, using the figures at the bottom of this page.
7. Multiply the total cost by the location factor on page 7 or 8.
8. Add the cost of the appropriate additional components from page 236 to 248: heating and cooling equipment, fire sprinklers, display fronts, finish materials on the front wall, canopies, interior partitions, exterior signs, mezzanines and basements, loading docks and ramps, yard improvements, and communication systems.

### Length less than 1-1/2 times depth – Square Foot Area

Quality Class	3,500	5,000	7,500	10,000	12,500	15,000	20,000	30,000	40,000	50,000	75,000
1, Best	116.37	114.46	112.55	111.48	110.71	110.11	109.36	108.39	107.83	107.48	106.89
1 & 2	105.44	103.68	101.96	100.99	100.25	99.77	99.09	98.18	97.69	97.33	96.84
2, Good	96.08	94.54	92.96	92.07	91.46	91.00	90.36	89.55	89.10	88.81	88.28
2 & 3	92.80	89.66	86.71	85.89	85.29	84.90	84.29	83.51	83.06	82.80	82.37
3, Average	84.77	83.43	82.02	81.23	80.68	80.23	79.68	79.02	78.64	78.33	77.87
3 & 4	77.83	76.57	75.28	74.52	74.00	73.71	73.13	72.50	72.11	71.89	71.44
4, Low	70.74	69.53	68.41	67.77	67.23	66.95	66.45	65.90	65.54	65.35	64.92

### Length between 1-1/2 and 2 times depth – Square Foot Area

Quality Class	4,500	5,000	7,500	10,000	15,000	20,000	30,000	40,000	50,000	75,000	100,000
1, Best	115.81	115.17	112.95	111.75	110.33	109.53	108.51	108.03	107.66	107.07	106.78
1 & 2	104.85	104.27	102.30	101.08	99.88	99.13	98.30	97.78	97.47	96.94	96.70
2, Good	95.66	95.12	93.31	92.31	91.06	90.42	89.64	89.19	88.91	88.45	88.18
2 & 3	89.11	88.60	86.89	85.98	84.90	84.27	83.51	83.09	82.86	82.46	82.18
3, Average	84.27	83.74	82.17	81.30	80.19	79.65	78.99	78.62	78.31	77.89	77.71
3 & 4	77.33	76.85	75.44	74.58	73.66	73.11	72.52	72.11	71.89	71.55	71.27
4, Low	70.13	69.73	68.41	67.69	66.85	66.34	65.75	65.44	65.16	64.86	64.68

**Wall Height Adjustment:** Add or subtract the amount listed to or from the square foot costs above for each foot of wall height more or less than 16 feet.

Area	3,500	5,000	7,500	10,000	12,500	15,000	Over 20,000
Cost	.28	.26	.21	.17	.14	.13	.12

**Perimeter Wall Adjustment:** For common wall deduct \$64 per linear foot of common wall. For no wall ownership, deduct \$133 per linear foot of wall.

# Suburban Stores – Wood or Wood and Steel Frame

## Multi-Unit, Strip Type

### Estimating Procedure

1. Use these figures to estimate the cost of stores designed for multiple occupancy. These costs include all components of shell buildings plus the cost of display fronts, finish materials on the front of the building and normal interior partitions.
2. Establish the structure quality class by applying the information on page 94. Evaluate the quality of the display front to help establish the correct quality class of the building as a whole. The building classes have display fronts as classified on page 89. See also pages 242 to 245.
3. Compute the building floor area. This should include everything within the exterior walls and all inset areas outside the main walls but under the main roof.
4. Add to or subtract from the square foot cost below the appropriate amount from the Wall Height Adjustment Table (at the bottom of this page) if the wall height is more or less than 16 feet.
5. Multiply the adjusted square foot cost by the building area.
6. Deduct, if appropriate, for common walls, using the figures at the bottom of this page.
7. Multiply the total cost by the location factor on page 7 or 8.
8. Add the cost of the appropriate additional components from page 236 to 248: heating and cooling equipment, fire sprinklers, canopies, exterior signs, mezzanines and basements, loading docks and ramps, yard improvements, and communication systems.

### Length less than 1-1/2 times depth – Square Foot Area

Quality Class	500	1,000	2,000	2,500	3,000	4,000	5,000	7,500	10,000	12,500	15,000
1, Best	266.40	222.09	190.94	182.96	177.12	168.87	163.28	154.61	149.41	145.82	143.23
1 & 2	236.01	196.81	169.11	162.10	156.90	149.57	144.61	136.91	132.29	129.16	126.84
2, Good	208.08	173.50	149.07	142.85	138.34	131.85	127.56	120.73	116.67	113.84	111.81
2 & 3	189.43	157.92	135.76	130.08	125.97	120.04	116.09	109.88	106.18	103.71	101.78
3, Average	173.50	144.66	124.37	119.24	115.34	110.02	106.36	100.70	97.28	94.98	93.28
3 & 4	159.84	133.24	114.55	113.81	106.27	101.33	97.96	92.73	89.60	87.49	85.95
4, Low	145.25	121.12	104.06	99.74	96.53	92.03	89.02	84.27	81.43	79.54	78.04

### Length between 1-1/2 and 2 times depth – Square Foot Area

Quality Class	500	1,000	2,000	3,000	5,000	7,500	10,000	15,000	20,000	25,000	35,000
1, Best	297.54	244.89	207.56	191.02	174.42	163.97	157.73	150.34	145.92	142.90	138.94
1 & 2	262.49	216.04	183.14	168.57	153.91	144.65	139.14	132.63	128.75	126.04	122.60
2, Good	230.55	189.73	160.79	148.03	135.16	127.03	122.27	116.51	113.07	110.76	107.67
2 & 3	209.29	172.20	145.99	134.35	122.71	115.33	110.93	105.73	102.57	100.52	97.74
3, Average	190.58	156.85	132.96	122.32	111.69	105.01	101.04	96.85	93.44	91.56	89.02
3 & 4	174.37	143.51	121.61	111.94	102.20	96.07	92.47	88.01	85.52	83.74	81.43
4, Low	158.43	130.33	110.42	101.66	92.81	87.24	83.93	80.01	77.68	76.04	73.94

**Wall Height Adjustment:** Add or subtract the amount listed to or from the square foot of floor cost for each foot of wall height more or less than 16 feet.

### Square Foot Area

Quality Class	500	1,000	2,000	3,000	5,000	7,500	10,000	15,000	20,000	25,000	35,000
1, Best	18.30	12.73	8.98	7.32	5.73	4.64	4.03	3.36	2.88	2.60	2.38
2, Good	11.99	8.36	5.89	4.81	3.69	3.05	2.66	2.19	1.95	1.69	1.58
3, Average	8.79	6.12	4.32	3.54	2.78	2.25	1.98	1.59	1.41	1.29	1.18
4, Low	6.41	4.41	3.10	2.55	1.99	1.60	1.41	1.18	.96	.86	.83

**Perimeter Wall Adjustment:** For a common wall, deduct \$218 per linear foot. For no wall ownership, deduct \$436 per linear foot.

# Suburban Stores – Wood or Wood and Steel Frame

## Multi-Unit, Strip Type

### Estimating Procedure

1. Use these figures to estimate the cost of stores designed for multiple occupancy. These costs include all components of shell buildings plus the cost of display fronts, finish materials on the front of the building and normal interior partitions.
2. Establish the structure quality class by applying the information on page 94. Evaluate the quality of the display front to help establish the correct quality class of the building as a whole. The building classes have display fronts as classified on page 89. See also pages 242 to 245.
3. Compute the building floor area. This should include everything within the exterior walls and all inset areas outside the main walls but under the main roof.
4. Add to or subtract from the square foot cost below the appropriate amount from the Wall Height Adjustment Table (at the bottom of this page) if the wall height is more or less than 16 feet.
5. Multiply the adjusted square foot cost by the building area.
6. Deduct, if appropriate, for common walls, using the figures at the bottom of this page.
7. Multiply the total cost by the location factor on page 7 or 8.
8. Add the cost of the appropriate additional components from page 236 to 248: heating and cooling equipment, fire sprinklers, canopies, exterior signs, mezzanines and basements, loading docks and ramps, yard improvements, and communication systems.

### Length between 2 and 3 times depth – Square Foot Area

Quality Class	1,000	2,000	3,000	5,000	7,500	10,000	15,000	20,000	30,000	50,000	70,000
1, Best	282.62	234.70	213.52	192.29	178.97	170.96	161.48	155.87	149.18	142.57	139.01
1 & 2	249.06	206.84	188.19	169.50	157.70	150.72	142.32	137.41	131.53	125.65	122.48
2, Good	218.05	181.05	164.77	148.35	138.05	131.88	124.66	120.29	115.13	109.97	107.23
2 & 3	197.45	163.93	149.13	134.35	125.02	119.48	112.88	108.92	104.28	99.61	97.11
3, Average	178.97	148.61	135.17	121.74	113.27	108.29	102.29	98.69	94.48	90.25	88.00
3 & 4	163.75	135.95	123.71	111.34	103.61	99.05	93.51	90.32	86.46	82.57	80.48
4, Low	148.22	123.06	112.02	100.88	93.78	89.68	84.72	81.75	78.36	74.75	72.91

### Length greater than 3 times depth – Square Foot Area

Quality Class	2,000	3,000	5,000	10,000	15,000	20,000	30,000	50,000	75,000	100,000	150,000
1, Best	257.92	232.11	206.55	181.24	170.19	163.58	155.75	148.02	143.16	140.27	136.80
1 & 2	227.12	204.41	181.82	159.54	149.82	144.01	137.18	130.35	126.08	123.50	120.48
2, Good	198.60	178.73	159.05	139.58	131.03	125.98	119.98	114.02	110.24	108.03	105.39
2 & 3	173.39	155.99	138.89	121.81	114.43	109.97	104.76	99.50	96.29	94.36	91.96
3, Average	162.49	146.22	130.13	114.16	107.16	103.07	98.15	93.28	90.18	88.37	86.22
3 & 4	149.55	134.58	119.80	105.07	98.62	94.80	90.36	85.83	83.01	81.32	79.40
4, Low	136.17	122.56	109.09	95.72	89.87	86.40	82.28	78.17	75.61	74.16	72.29

**Wall Height Adjustment:** Add or subtract the amount listed to or from the square foot cost above for each foot of wall height more or less than 16 feet.

### Square Foot Area

Quality Class	2,000	3,000	5,000	10,000	15,000	20,000	30,000	50,000	75,000	100,000	150,000
1, Best	8.71	7.10	5.55	3.98	3.33	2.86	2.35	1.96	1.59	1.45	1.27
2, Good	5.59	4.60	3.54	2.55	2.09	1.84	1.56	1.24	1.02	.94	.77
3, Average	4.11	3.40	2.61	1.92	1.57	1.38	1.16	.87	.77	.69	.59
4, Low	3.07	2.47	1.96	1.38	1.17	1.04	.82	.68	.58	.54	.44

**Perimeter Wall Adjustment:** For a common wall, deduct \$218 per linear foot. For no wall ownership, deduct \$436 per linear foot.

# Supermarkets – Masonry or Concrete

## Quality Classification

	<b>Class 1 Best Quality</b>	<b>Class 2 Good Quality</b>	<b>Class 3 Average Quality</b>	<b>Class 4 Low Quality</b>
<b>Foundation</b> (15% of total cost)	Reinforced concrete.	Reinforced concrete.	Reinforced concrete.	Reinforced concrete.
<b>Floor Structure</b> (12% of total cost)	4" reinforced concrete on 6" rock fill.	4" reinforced concrete on 6" rock fill.	4" reinforced concrete on 6" rock fill.	4" reinforced concrete on 6" rock fill.
<b>Wall Structure</b> (15% of total cost)	6" concrete tilt-up or ornamental block or brick.	6" concrete tilt-up, colored concrete block or brick.	6" concrete tilt-up or 8" concrete block.	6" concrete tilt-up or 8" concrete block.
<b>Roof Structure</b> (10% of total cost)	Glu-lams or steel "I" beams on steel intermediate columns, 2" x 12" purlins 16" o.c., 1/2" plywood sheathing.	Glu-lams or steel "I" beams on steel intermediate columns, 2" x 12" purlins 16" o.c., 1/2" plywood sheathing.	Glu-lams or steel "I" beams on steel intermediate columns, 2" x 12" purlins 16" o.c., 1/2" plywood sheathing.	Glu-lams or steel "I" beams on steel intermediate columns, 3" x 12" purlins 3' o.c., 1/2" plywood sheathing.
<b>Floor Finish</b> (5% of total cost)	Terrazzo in sales area. Sheet vinyl or carpet in cashiers' area.	Resilient tile in sales area. Terrazzo, solid vinyl tile or carpet in cashiers' area.	Composition tile in sales area.	Minimum grade tile in sales area.
<b>Interior Wall Finish</b> (5% of total cost)	Inside of exterior walls furred out with gypsum wallboard and paint or interior stucco, interior stucco or gypsum wallboard and vinyl wall cover on partitions.	Paint on inside of exterior walls, gypsum wallboard and paint or vinyl wall cover on partitions.	Paint on inside of exterior walls, wallboard and paint on partitions.	Paint on inside of exterior walls, wallboard and paint on partitions.
<b>Ceiling Finish</b> (5% of total cost)	Suspended acoustical tile, dropped ceiling over meat and produce departments.	Suspended acoustical tile or gypsum board and acoustical texture, dropped ceiling over meat and produce departments.	Ceiling tile on roof purlins, dropped ceiling over meat department.	Open.
<b>Front</b> (7% of total cost)	A large amount of float glass in good aluminum frames (18'-22' high for 3/4 of width), brick or stone veneer on remainder, 1 pair of good automatic doors per 7,000 S.F. of floor area, anodized aluminum sunshade over glass area, 8' canopy across front, 10'-12' raised walk across front.	A large amount of float glass in good aluminum frames (16'-18' high for 2/3 of width), brick or stone veneer on remainder, 1 pair of good automatic doors per 10,000 S.F. of floor area, 8' canopy across front, 10' raised walk across front.	A moderate amount of float glass in average quality aluminum frames (12'-16' high for 2/3 of width), exposed aggregate on remainder, 1 pair average automatic doors per 10,000 S.F. of floor area, 6' canopy across front, 8' raised walk across front.	Stucco or exposed aggregate with a small amount of float glass in an inexpensive aluminum frame (6'-10' high for 1/2 of width), 6' canopy across front, 6' ground level walk across front.
<b>Exterior Finish</b> (8% of total cost)	Large ornamental rock or brick veneer.	Large ornamental rock or brick veneer.	Paint, some exposed aggregate.	Paint.
<b>Roof Cover</b> (5% of total cost)	5 ply built-up roofing with large rock.	5 ply built-up roofing with tar and rock.	4 ply built-up roofing.	4 ply built-up roofing.
<b>Plumbing</b> (8% of total cost)	2 rest rooms with 3 fixtures, floor piping and drains to refrigerated cases, 2 double sinks with drain board.	2 rest rooms with 3 fixtures each, floor piping and drains to refrigerated cases, 2 double sinks with drain board.	2 rest rooms with 2 fixtures each, floor piping and drains to refrigerated cases, 2 double sinks.	1 rest room with 2 fixtures, floor piping and drains to refrigerated cases.
<b>Electrical</b> (5% of total cost)	Conduit wiring, recessed 4 tube fluorescent fixtures 8' o.c., 30-40 spotlights.	Conduit wiring, 4 tube fluorescent fixtures with diffusers 8' o.c., 30-40 spotlights.	Conduit wiring, 3 tube fluorescent fixtures, 8' o.c., 5 or 10 spotlights.	Conduit wiring, double tube fluorescent fixtures, 8' o.c.

**Note:** Use the percent of total cost to help identify the correct quality classification.

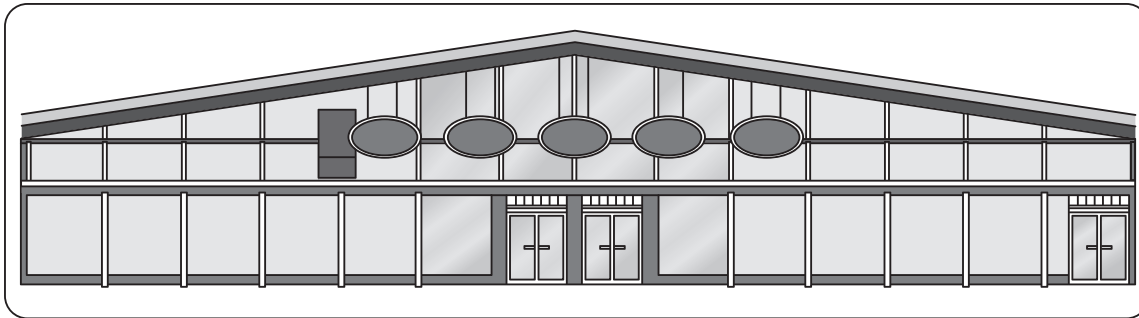
**Square foot costs include the following components:** Foundations as required for normal soil conditions. Floor, wall, and roof structures. Interior floor, wall and ceiling finishes. Exterior wall finish and roof cover. Display fronts. Interior partitions. Entry and delivery doors. A canopy and walk across the front of the building as described in the applicable building specifications. Basic lighting and electrical systems. Rough and finish plumbing. All plumbing, piping and wiring necessary to operate the usual refrigerated cases and vegetable cases. Design and engineering fees. Permits and hook-up fees. Contractor's mark-up.



# Supermarkets – Masonry or Concrete

## Estimating Procedure

1. Establish the structure quality class by using the information on page 103.
2. Compute the building floor area. This should include everything within the building exterior walls and all insets outside the main walls but under the main building roof.
3. Add to or subtract from the square foot cost below the appropriate amount from the Wall Height Adjustment Row (at the bottom of this page) if the wall height is more or less than 20 feet.
4. Multiply the adjusted square foot cost by the building area.
5. Deduct, if appropriate, for common walls, using the figures at the bottom of this page.
6. Multiply the total cost by the location factor listed on page 7 or 8.
7. Add the cost of heating and cooling equipment, fire sprinklers, exterior signs, yard improvements, loading docks, ramps and walk-in boxes if they are an integral part of the building. See pages 236 to 248.



**Supermarket, Class 2**

### Square Foot Area

Quality Class	5,000	7,500	10,000	12,500	15,000	20,000	25,000	30,000	35,000	40,000	50,000
Exceptional	187.61	174.46	166.59	161.18	157.20	151.60	147.71	144.88	142.68	140.89	138.14
1, Best	178.79	166.27	158.75	153.63	149.79	144.46	140.79	138.06	135.98	134.27	131.61
1 & 2	165.77	154.11	147.20	142.38	138.85	133.88	130.50	127.98	126.00	124.44	122.10
2, Good	153.48	142.73	136.28	131.91	128.60	124.07	120.88	118.55	116.74	115.29	113.06
2 & 3	143.22	133.14	127.18	123.05	119.94	115.72	112.77	110.56	108.85	107.53	105.43
3, Average	134.60	125.21	119.51	115.62	112.77	108.81	105.96	103.94	102.35	101.05	99.06
3 & 4	122.11	113.49	108.35	104.88	102.30	98.66	96.12	94.27	92.79	91.70	89.91
4, Low	109.02	101.34	96.79	93.67	91.32	88.07	85.80	84.18	82.90	81.82	80.24
Wall Height Adjustment*	2.03	1.62	1.42	1.31	1.20	1.00	.88	.80	.77	.74	.64

**\*Wall Height Adjustment:** Add or subtract the amount listed in this row to or from the square foot of floor cost for each foot of wall height more or less than 20 feet.

**Perimeter Wall Adjustment:** A common wall exists when two buildings share one wall. Adjust for common walls by deducting the linear foot costs below from the total structure cost. In some structures one or more walls are not owned at all. In this case, deduct the "No Ownership" cost per linear foot of wall not owned. For common wall, deduct \$357 per linear foot. For no wall ownership, deduct \$745 per linear foot.

# Supermarkets – Wood and Steel Frame

## Quality Classification

	Class 1 Best Quality	Class 2 Good Quality	Class 3 Average Quality	Class 4 Low Quality
<b>Foundation</b> (15% of total cost)	Reinforced concrete.	Reinforced concrete.	Reinforced concrete.	Reinforced concrete.
<b>Floor Structure</b> (12% of total cost)	4" reinforced concrete on 6" rock fill.	4" reinforced concrete on 6" rock fill.	4" reinforced concrete on 6" rock fill.	4" reinforced concrete on 6" rock fill.
<b>Wall Structure</b> (10% of total cost)	2" x 6" - 16" o.c.	2" x 6" - 16" o.c.	2" x 4" - 16" o.c.	2" x 4" - 16" o.c.
<b>Roof Structure</b> (10% of total cost)	Glu-lams or steel "I" beams on steel intermediate columns, 2" x 12" purlins 16" o.c., 1/2" plywood sheathing.	Glu-lams or steel "I" beams on steel intermediate columns, 2" x 12" purlins 16" o.c., 1/2" plywood sheathing.	Glu-lams or steel "I" beams on steel intermediate columns, 2" x 12" purlins 16" o.c., 1/2" plywood sheathing.	Glu-lams or steel "I" beams on steel intermediate columns, 3" x 12" purlins 3' o.c., 1/2" plywood sheathing.
<b>Floor Finish</b> (5% of total cost)	Terrazzo in sales area. Sheet vinyl or carpet in cashiers' area.	Resilient tile in sales area. Terrazzo, solid vinyl tile or carpet in cashiers' area.	Composition tile in sales area.	Minimum tile or inexpensive composition tile in sales area.
<b>Interior Wall Finish</b> (7% of total cost)	Gypsum wallboard and vinyl wall cover or interior stucco on inside of exterior walls and on partitions.	Gypsum wallboard, texture and paint or vinyl wall cover on inside of exterior walls, and on partitions.	Gypsum wallboard, texture and paint on inside of exterior walls, and on partitions.	Gypsum wallboard and paint on inside of exterior walls, and on partitions.
<b>Ceiling Finish</b> (5% of total cost)	Suspended acoustical tile, dropped ceiling over meat and produce departments.	Suspended acoustical tile or gypsum board and acoustical texture, dropped ceiling over meat and produce departments.	Ceiling tile on roof purlins, dropped ceiling over meat department.	Open.
<b>Front</b> (10% of total cost)	A large amount of float glass in good aluminum frames (18'-22' high for 3/4 of width), brick or stone veneer on remainder, 1 pair good automatic doors per 7,000 S.F. of floor area, anodized aluminum sunshade over glass area, 8' canopy across front, 10'-12' raised walk across front.	A large amount of float glass in good aluminum frames (16'-18' high for 2/3 of width), brick or stone veneer on remainder, 1 pair good automatic doors per 10,000 S.F. of floor area, 9' canopy across front, 10' raised walk across front.	Moderate amount of float glass in average quality aluminum frames (12'-16' high for 2/3 of width), wood siding on remainder, 1 pair average automatic doors per 10,000 S.F. of floor area, 6' canopy across front, 8' raised walk across front.	Stucco with small amount of float glass in an inexpensive aluminum frame (6'-10' high for 1/2 of width), 6' canopy across front, 6' ground level walk across front.
<b>Exterior Finish</b> (8% of total cost)	Large ornamental rock or brick veneer.	Good wood siding, some masonry veneer.	Stucco or wood siding.	Stucco.
<b>Roof Cover</b> (5% of total cost)	5 ply built-up roofing with large rock.	5 ply built-up roofing with tar and rock.	4 ply built-up roofing.	4 ply built-up roofing.
<b>Plumbing</b> (8% of total cost)	2 rest rooms with 3 fixtures each, floor piping and drains to refrigerated cases, 2 double sinks with drain board.	2 rest rooms with 3 fixtures each, floor piping and drains to refrigerated cases, 2 double sinks with drain board.	2 rest rooms with 2 fixtures each, floor piping and drains to refrigerated cases, 2 double sinks.	1 rest room with 2 fixtures, floor piping and drains to refrigerated cases.
<b>Electrical</b> (5% of total cost)	Conduit wiring, recessed 4 tube fluorescent fixtures, 8' o.c., 30 to 40 spotlights.	Conduit wiring, 4 tube fluorescent fixtures with diffusers, 8' o.c., 30 to 40 spotlights.	Conduit wiring, 3 tube fluorescent fixtures, 8' o.c., 5 or 10 spotlights.	Conduit wiring, double tube fluorescent fixtures, 8' o.c.

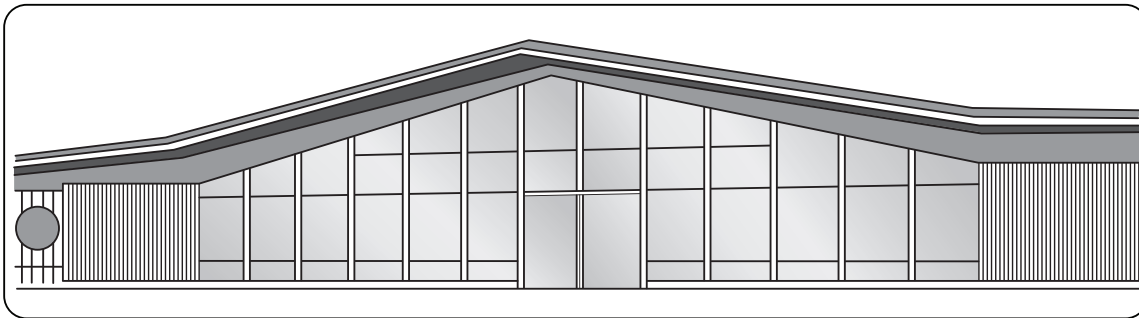
**Note:** Use the percent of total cost to help identify the correct quality classification.

**Square foot costs include the following components:** Foundations as required for normal soil conditions. Floor, wall, and roof structures. Interior floor, wall and ceiling finishes. Exterior wall finish and roof cover. Display fronts. Interior partitions. Entry and delivery doors. A canopy and walk across the front of the building as described in the applicable building specifications. Basic lighting and electrical systems. Rough and finish plumbing. All plumbing, piping and wiring necessary to operate the usual refrigerated cases and vegetable cases. Design and engineering fees. Permits and hook-up fees. Contractor's mark-up.

# Supermarkets – Wood and Steel Frame

## Estimating Procedure

1. Establish the structure quality class by using the information on page 105.
2. Compute the building floor area. This should include everything within the building exterior walls and all insets outside the main walls but under the main building roof.
3. Add to or subtract from the square foot cost below the appropriate amount from the Wall Height Adjustment Row (at the bottom of this page) if the wall height is more or less than 20 feet.
4. Multiply the adjusted square foot cost by the building area.
5. Deduct, if appropriate, for common walls, using the figures at the bottom of this page.
6. Multiply the total cost by the location factor listed on page 7 or 8.
7. Add the cost of heating and cooling equipment, fire sprinklers, exterior signs, yard improvements, loading docks, ramps and walk-in boxes if they are an integral part of the building. See pages 236 to 248.



**Supermarket, Class 3**

### Square Foot Area

Quality Class	5,000	7,500	10,000	12,500	15,000	20,000	25,000	30,000	35,000	40,000	50,000
Exceptional	169.20	159.44	153.56	149.54	146.56	142.40	139.53	137.40	135.80	134.50	132.38
1, Best	161.42	152.10	146.49	142.69	139.86	135.83	133.13	131.13	129.52	128.27	126.32
1 & 2	148.30	139.80	134.57	131.11	128.48	124.81	122.32	120.48	119.01	117.81	116.05
2, Good	136.09	128.14	123.48	120.21	117.92	114.50	112.22	110.46	109.19	108.09	106.45
2 & 3	127.12	119.81	115.41	112.41	110.20	107.03	104.90	103.29	102.02	101.05	99.54
3, Average	119.72	112.83	108.65	105.76	103.68	100.75	98.68	97.20	96.05	95.05	93.63
3 & 4	109.65	103.33	99.52	96.92	94.98	92.28	90.42	89.06	87.97	87.15	85.79
4, Low	98.78	93.09	89.66	87.25	85.54	83.12	81.43	80.18	79.23	78.45	77.27
Wall Height Adjustment*	1.06	.89	.79	.71	.66	.60	.58	.57	.54	.53	.47

**\*Wall Height Adjustment:** Add or subtract the amount listed in this row to or from the square foot of floor cost for each foot of wall height more or less than 20 feet.

**Perimeter Wall Adjustment:** A common wall exists when two buildings share one wall. Adjust for common walls by deducting the linear foot costs below from the total structure cost. In some structures one or more walls are not owned at all. In this case, deduct the “No Ownership” cost per linear foot of wall not owned. For common wall, deduct \$240 per linear foot. For no wall ownership, deduct \$480 per linear foot.

# Small Food Stores – Masonry Construction

## Quality Classification

	Class 1 Best Quality	Class 2 Good Quality	Class 3 Average Quality	Class 4 Low Quality
<b>Foundation</b> (15% of total cost)	Reinforced concrete.	Reinforced concrete.	Reinforced concrete.	Reinforced concrete.
<b>Floor Structure</b> (12% of total cost)	4" reinforced concrete on 6" rock fill.	4" reinforced concrete on 6" rock fill.	4" reinforced concrete on 6" rock fill.	4" reinforced concrete on 6" rock fill.
<b>Wall Structure</b> (10% of total cost)	6" concrete tilt-up or ornamental block or brick.	6" concrete tilt-up, colored concrete block or brick.	6" concrete tilt-up or 8" concrete block.	6" concrete tilt-up or 8" concrete block.
<b>Roof Structure</b> (10% of total cost)	Glu-lams or steel "I" beams on steel intermediate columns, 2" x 12" purlins 16" o.c., 1/2" plywood sheathing.	Glu-lams or steel "I" beams, 2" x 12" purlins 16" o.c., 1/2" plywood sheathing.	Glu-lams, 3" x 12" purlins 3' o.c., 1/2" plywood sheathing.	Glu-lams, 3" x 12" purlins 3' o.c., 1/2" plywood sheathing.
<b>Floor Finish</b> (5% of total cost)	Resilient tile in sales area.	Composition tile in sales area.	Minimum grade tile in sales area.	Concrete.
<b>Interior Wall Finish</b> (7% of total cost)	Paint on inside of exterior walls, gypsum wallboard, texture and paint or vinyl wall cover on partitions.	Paint on inside of exterior walls, gypsum wallboard, texture and paint on partitions.	Paint on inside of exterior walls, gypsum wallboard and paint on partitions.	Paint on inside of exterior walls, gypsum wallboard and paint on partitions.
<b>Ceiling Finish</b> (5% of total cost)	Suspended acoustical tile or gypsum board and acoustical texture.	Ceiling tile on roof purlins.	Open.	Open.
<b>Front</b> (10% of total cost)	A large amount of float glass in good aluminum frames (10'-12' high for 2/3 of width), brick or stone veneer on remainder, 1 pair good aluminum and glass doors per 3,000 S.F. of floor area, 8' canopy across front, 10' raised walk across front.	A moderate amount of float glass in average aluminum frames (8' to 10' high for 2/3 of width), exposed aggregate on remainder, 1 pair average aluminum and glass doors per 3,000 S.F. of floor area, 6' canopy across front, 8' raised walk across front.	Painted concrete block with a small amount of float glass in an inexpensive aluminum frame (6' to 8' high for 1/2 of width), 6' canopy across front, 6' ground level walk across front.	Painted concrete block with small amount of crystal glass in wood frames, wood and glass doors, small canopy over entrance, 6' ground level walk at entrances.
<b>Exterior Finish</b> (8% of total cost)	Colored block.	Paint.	Paint.	Paint.
<b>Roof Cover</b> (5% of total cost)	5 ply built-up roofing with tar and rock.	4 ply built-up roofing.	4 ply built-up roofing.	4 ply built-up roofing.
<b>Plumbing</b> (8% of total cost)	2 rest rooms with 3 fixtures each, floor piping and drains to refrigerated cases.	1 rest room with 3 fixtures, floor piping and drains to refrigerated cases.	1 rest room with 2 fixtures, floor piping and drains to refrigerated cases.	1 rest room with 2 fixtures, floor piping and drains to refrigerated cases.
<b>Electrical</b> (5% of total cost)	Conduit wiring, 4 tube fluorescent fixtures with diffusers, 8' o.c., 5 spotlights.	Conduit wiring, 3 tube fluorescent fixtures, 8' o.c.	Conduit wiring, double tube fluorescent fixtures, 8' o.c.	Conduit wiring, incandescent fixtures, 10' o.c. or single tube fluorescent fixtures, 8' o.c.

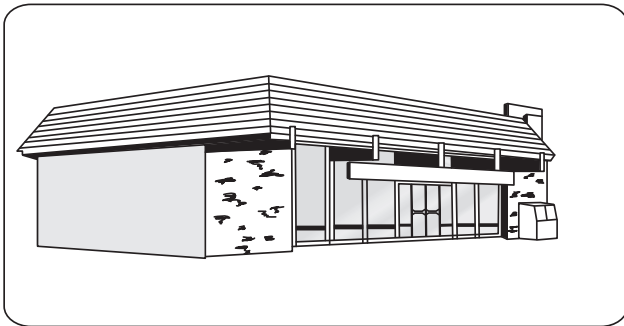
**Note:** Use the percent of total cost to help identify the correct quality classification.

**Square foot costs include the following components:** Foundations as required for normal soil conditions. Floor, wall, and roof structures. Interior floor, wall and ceiling finishes. Exterior wall finish and roof cover. Display fronts. Interior partitions. Entry and delivery doors. A canopy and walk across the front of the building as described in the applicable building specifications. Basic lighting and electrical systems. Rough and finish plumbing. All plumbing, piping and wiring necessary to operate the usual refrigerated cases and vegetable cases. Design and engineering fees. Permits and hook-up fees. Contractor's mark-up.

# Small Food Stores – Masonry Construction

## Estimating Procedure

1. Establish the structure quality class by using the information on page 107.
2. Compute the building floor area. This should include everything within the building exterior walls and all insets outside the main walls but under the main building roof.
3. Add to or subtract from the square foot cost below the appropriate amount from the Wall Height Adjustment Row (at the bottom of this page) if the wall height is more or less than 12 feet.
4. Multiply the adjusted square foot cost by the building area.
5. Deduct, if appropriate, for common walls, using the figures at the bottom of this page.
6. Multiply the total cost by the location factor listed on page 7 or 8.
7. Add the cost of heating and cooling equipment, fire sprinklers, exterior signs, yard improvements, loading docks, ramps and walk-in boxes if they are an integral part of the building. See pages 236 to 248.



**Small Food Store, Class 1 & 2**



**Small Food Store, Class 2**

### Square Foot Area

Quality Class	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	6,000
1, Best	276.53	209.53	183.20	168.43	158.78	151.90	146.78	142.58	139.24	136.41	131.98
1 & 2	254.69	193.41	169.33	155.83	146.99	140.68	135.90	132.18	129.03	126.49	122.40
2, Good	234.81	178.82	156.80	144.40	136.30	130.51	126.13	122.64	119.75	117.42	113.68
2 & 3	221.83	170.11	149.08	137.12	129.20	123.45	119.03	115.55	112.69	110.27	106.43
3, Average	209.56	160.33	140.52	129.29	121.87	116.55	112.51	109.34	106.65	104.41	100.87
3 & 4	173.53	146.21	131.22	121.53	114.59	109.30	104.94	101.57	98.60	96.09	91.91
4, Low	161.67	135.26	121.23	112.11	105.61	100.68	96.70	93.51	90.74	88.45	84.63
Wall Height Adjustment*	6.35	4.48	3.65	3.17	2.78	2.62	2.41	2.22	2.10	2.03	1.90

**\*Wall Height Adjustment:** Add or subtract the amount listed in this row to or from the square foot of floor cost for each foot of wall height more or less than 12 feet.

**Perimeter Wall Adjustment:** For common wall, deduct \$187 per linear foot. For no wall ownership, deduct \$369 per linear foot.

# Small Food Stores – Wood Frame Construction

## Quality Classification

	<b>Class 1 Best Quality</b>	<b>Class 2 Good Quality</b>	<b>Class 3 Average Quality</b>	<b>Class 4 Low Quality</b>
<b>Foundation</b> (15% of total cost)	Reinforced concrete.	Reinforced concrete.	Reinforced concrete.	Reinforced concrete.
<b>Floor Structure</b> (12% of total cost)	4" reinforced concrete on 6" rock fill.	4" reinforced concrete on 6" rock fill.	4" reinforced concrete on 6" rock fill.	4" reinforced concrete on 6" rock fill.
<b>Wall Structure</b> (10% of total cost)	2" x 6" - 16" o.c.	2" x 6" - 16" o.c.	2" x 4" - 16" o.c.	2" x 4" - 16" o.c.
<b>Roof Structure</b> (10% of total cost)	Glu-lams or steel "I" beams on steel intermediate columns, 2" x 12" purlins 16" o.c., 1/2" plywood sheathing.	Glu-lams or steel "I" beams on steel intermediate columns, 2" x 12" purlins 16" o.c., 1/2" plywood sheathing.	Glu-lams, or steel "I" beams, 3" x 12" purlins 3' o.c., 1/2" plywood sheathing.	Glu-lams, 3" x 12" purlins 3' o.c. 1/2" plywood sheathing.
<b>Floor Finish</b> (5% of total cost)	Resilient tile in sales area.	Resilient tile in sales area.	Inexpensive composition tile in sales area.	Concrete.
<b>Interior Wall Finish</b> (7% of total cost)	Gypsum wallboard, texture and paint or vinyl wall cover on inside of exterior walls, and on partitions.	Gypsum wallboard, texture and paint on inside of exterior walls, and on partitions.	Gypsum wallboard and paint on inside of exterior walls, and on partitions.	Gypsum wallboard and paint on inside of exterior walls and on partitions.
<b>Ceiling Finish</b> (5% of total cost)	Suspended acoustical tile or gypsum board and acoustical texture.	Ceiling tile on roof purlins.	Open.	Open.
<b>Front</b> (10% of total cost)	A large amount of float glass in good aluminum frames (10'-12' high for 2/3 of width), brick or stone veneer on remainder, 1 pair good aluminum and glass doors per 3,000 S.F. of floor area, 8' canopy across front, 10' raised walk across front.	A moderate amount of float glass in average quality aluminum frames (8' to 10' high for 2/3 of width), ornamental concrete block on remainder, 1 pair average aluminum and glass doors per 3,000 S.F. of floor area, 6' canopy across front, 8' raised walk across front.	Painted stucco with a small amount of float glass in an inexpensive aluminum frame (6' to 8' high for 1/2 of width) 6' canopy across front. 6' ground level walk across front.	Stucco with small amount of crystal glass in wood frames, wood and glass doors, small canopy over entrance, 6' ground level walk at entrances.
<b>Exterior Finish</b> (8% of total cost)	Stucco and paint or wood siding.	Stucco and paint.	Stucco.	Stucco.
<b>Roof Cover</b> (5% of total cost)	5 ply built-up roofing with tar and rock.	4 ply built-up roofing.	4 ply built-up roofing.	4 ply built-up roofing.
<b>Plumbing</b> (8% of total cost)	2 rest rooms with 3 fixtures each, floor piping and drains to refrigerated cases.	1 rest room with 3 fixtures, floor piping and drains to refrigerated cases.	1 rest room with 2 fixtures, floor piping and drains to refrigerated cases.	1 rest room with 2 fixtures, floor piping and drains to refrigerated cases.
<b>Electrical</b> (5% of total cost)	Conduit wiring, 4 tube fluorescent fixtures with diffusers, 8' o.c., 5 spotlights.	Conduit wiring, 3 tube fluorescent fixtures, 8' o.c.	Conduit wiring, double tube fluorescent fixtures, 8' o.c.	Conduit wiring, incandescent fixtures, 10' o.c. or single tube fluorescent fixtures, 8' o.c.

**Note:** Use the percent of total cost to help identify the correct quality classification.

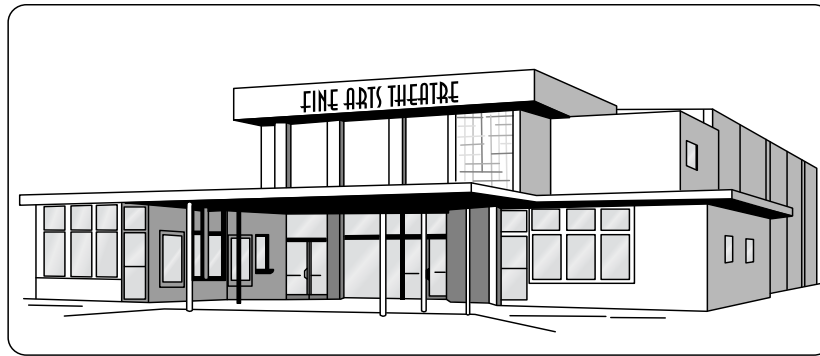
**Square foot costs include the following components:** Foundations as required for normal soil conditions. Floor, wall, and roof structures. Interior floor, wall and ceiling finishes. Exterior wall finish and roof cover. Display fronts. Interior partitions. Entry and delivery doors. A canopy and walk across the front of the building as described in the applicable building specifications. Basic lighting and electrical systems. Rough and finish plumbing. All plumbing, piping and wiring necessary to operate the usual refrigerated cases and vegetable cases. Design and engineering fees. Permits and hook-up fees. Contractor's mark-up.

# Theaters – Wood Frame

## Length Less Than Twice Width

### Estimating Procedure

1. Establish the structure quality class by applying the information on page 191.
2. Compute the building floor area. This should include everything within the main walls and all insets outside the main walls but under the main roof.
3. Add to or subtract from the square foot cost below the appropriate amount from the Wall Height Adjustment Table on page 195 if the wall height is more or less than 20 feet.
4. Multiply the adjusted square foot cost by the building floor area.
5. Deduct, if appropriate, for common walls, using the figures on page 195.
6. Multiply the total cost by the location factor listed on page 7 or 8.
7. Add the cost of heating and air conditioning systems, fire extinguishers, exterior signs, paving and curbing. See the section beginning on page 236.



Theater, Class 4 Front, Class 3 Rear

### Square Foot Area

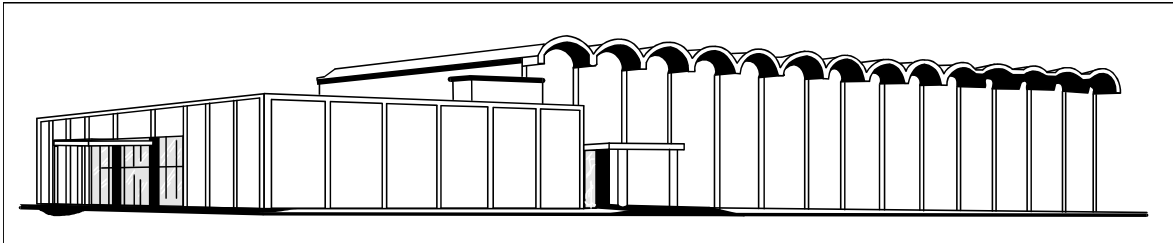
Quality Class	3,000	3,500	4,000	5,000	6,000	7,000	8,000	10,000	12,000	15,000	20,000
1, Best	138.31	133.92	130.50	125.47	122.07	119.38	117.36	114.33	112.25	109.95	107.44
1 & 2	134.00	129.73	126.38	121.59	118.21	115.62	113.63	110.72	108.67	106.45	104.02
2, Good	132.19	128.00	124.74	119.98	116.59	114.11	112.18	109.29	107.19	105.05	102.68
2 & 3	127.99	123.90	120.71	116.21	112.86	110.46	108.58	105.75	103.74	101.66	99.35
3, Average	125.35	121.43	118.31	113.80	110.57	108.24	106.39	103.66	101.68	99.65	97.41
3 & 4	121.61	117.79	114.75	110.43	107.29	105.00	103.17	100.55	98.63	96.63	94.45
4, Low	118.12	114.37	111.48	107.14	104.18	101.95	100.20	97.59	95.79	93.85	91.74

# Theaters – Wood Frame

## Length Between 2 and 4 Times Width

### Estimating Procedure

1. Establish the structure quality class by applying the information on page 191.
2. Compute the building floor area. This should include everything within the main walls and all insets outside the main walls but under the main roof.
3. Add to or subtract from the square foot cost below the appropriate amount from the Wall Height Adjustment Table on page 195 if the wall height is more or less than 20 feet.
4. Multiply the adjusted square foot cost by the building floor area.
5. Deduct, if appropriate, for common walls, using the figures on page 195.
6. Multiply the total cost by the location factor listed on page 7 or 8.
7. Add the cost of heating and air conditioning systems, fire extinguishers, exterior signs, paving and curbing. See the section beginning on page 236.



Theater, Class 3

### Square Foot Area

Quality Class	3,000	3,500	4,000	5,000	6,000	7,000	8,000	10,000	12,000	15,000	20,000
1, Best	147.39	142.77	139.09	133.74	130.05	127.22	125.04	121.79	119.50	117.08	114.41
1 & 2	142.67	138.16	134.67	129.52	125.87	123.15	121.02	117.87	115.67	113.32	110.73
2, Good	140.74	136.26	132.76	127.72	124.13	121.44	119.35	116.26	114.08	111.73	109.24
2 & 3	136.17	131.83	128.45	123.55	120.07	117.52	115.50	112.50	110.38	108.09	105.65
3, Average	133.59	129.34	126.07	121.24	117.82	115.30	113.33	110.43	108.30	106.07	103.69
3 & 4	129.53	125.38	121.08	117.34	114.23	111.79	109.83	107.01	105.05	102.78	100.55
4, Low	125.54	121.59	118.49	113.92	110.72	108.35	106.49	103.72	101.73	99.71	97.45

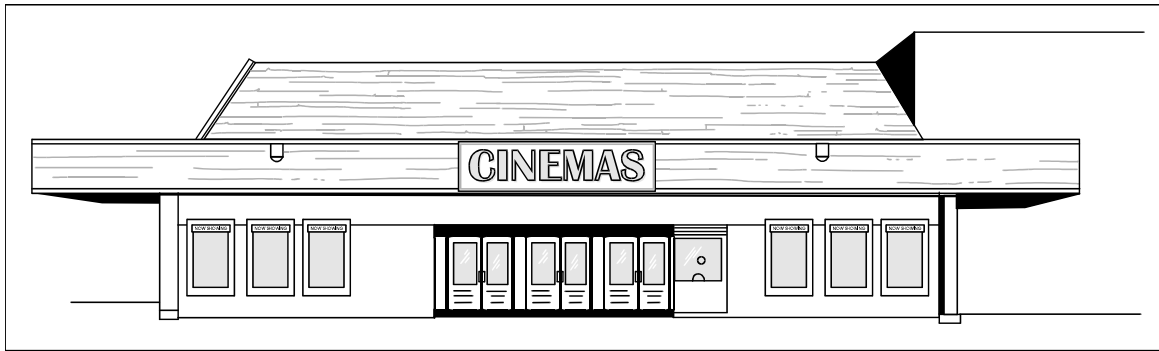


# Theaters – Wood Frame

## Length More Than 4 Times Width

### Estimating Procedure

1. Establish the structure quality class by applying the information on page 191.
2. Compute the building floor area. This should include everything within the main walls and all insets outside the main walls but under the main roof.
3. Add to or subtract from the square foot cost below the appropriate amount from the Wall Height Adjustment Table on page 195 if the wall height is more or less than 20 feet.
4. Multiply the adjusted square foot cost by the building floor area.
5. Deduct, if appropriate, for common walls, using the figures on page 195.
6. Multiply the total cost by the location factor listed on page 7 or 8.
7. Add the cost of heating and air conditioning systems, fire extinguishers, exterior signs, paving and curbing. See the section beginning on page 236.



Theater, Class 3

### Square Foot Area

Quality Class	3,000	3,500	4,000	5,000	6,000	7,000	8,000	10,000	12,000	15,000	20,000
1, Best	156.79	151.76	147.93	142.28	138.28	135.28	132.91	129.57	127.11	124.54	121.64
1 & 2	151.80	147.02	143.25	137.75	133.93	131.09	128.80	125.47	123.14	120.61	117.87
2, Good	149.83	145.06	141.35	135.98	132.15	129.33	127.11	123.83	121.46	119.07	116.37
2 & 3	145.04	140.41	136.89	131.61	127.94	125.21	123.02	119.83	117.67	115.26	112.64
3, Average	142.34	137.75	134.27	129.14	125.57	122.83	120.70	117.67	115.43	113.05	110.50
3 & 4	137.91	133.53	130.13	125.16	121.64	119.07	117.00	113.92	111.83	109.51	107.07
4, Low	134.71	130.41	127.11	122.29	118.88	116.27	114.28	111.40	109.29	107.03	104.59

# Service Garage – Masonry or Concrete

## Quality Classification

	<b>Class 1 Best Quality</b>	<b>Class 2 Good Quality</b>	<b>Class 3 Average Quality</b>	<b>Class 4 Low Quality</b>
<b>Foundation</b> (25% of total cost)	Reinforced concrete or masonry.	Reinforced concrete or masonry.	Reinforced concrete or masonry.	Unreinforced concrete or masonry.
<b>Floor Structure</b> (15% of total cost)	6" rock fill, 4" concrete with reinforcing mesh.	6" rock fill, 4" concrete with reinforcing mesh.	4" rock fill, 4" concrete with reinforcing mesh.	Unreinforced 4" concrete.
<b>Walls</b> (15% of total cost)	8" reinforced concrete block, 12" common brick.	8" reinforced concrete block, 6" reinforced concrete.	8" reinforced concrete block, 6" reinforced concrete or 8" common brick.	8" unreinforced concrete block or 8" clay tile.
<b>Roof Structure</b> (12% of total cost)	Glu-lams or steel trusses on heavy pilasters 20' o.c. 2" x 10" purlins 16" o.c.	Glu-lams or steel trusses on pilasters 20' o.c., 2" x 10" purlins 16" o.c.	Glu-lams or wood trusses with 2" x 8" purlins 16" o.c.	Glu-lams or light wood trusses, 2" x 8" rafters 24" o.c.
<b>Roof Cover</b> (8% of total cost)	5 ply built-up roof on wood sheathing, with small rock.	4 ply built-up roof on wood sheathing, with small rock.	4 ply built-up roof on wood sheathing.	4 ply built-up roof on wood sheathing.
<b>Restrooms</b> (10% of total cost)	Two rest rooms with three average fixtures each.	Two rest rooms with two average fixtures each.	One rest room with two low cost fixtures.	One rest room with two low cost fixtures.
<b>Lighting</b> (10% of total cost)	One incandescent fixture per 300 square feet of floor area.	One incandescent fixture per 300 square feet of floor area.	One incandescent fixture per 300 square feet of floor area.	One incandescent fixture per 300 square feet of floor area.
<b>Windows</b> (5% of total cost)	3% to 5% of wall area.	3% to 5% of wall area.	3% to 5% of wall area.	3% to 5% of wall area.

**Note:** Use the percent of total cost to help identify the correct quality classification.

**Square foot costs include the cost of the following components:** Foundations as required for normal soil conditions. Floor, wall and roof structures. Exterior wall finish and roof cover. Entry doors. Basic lighting and electrical systems. Rough and finish plumbing. Permits and fees. Contractor's mark-up.

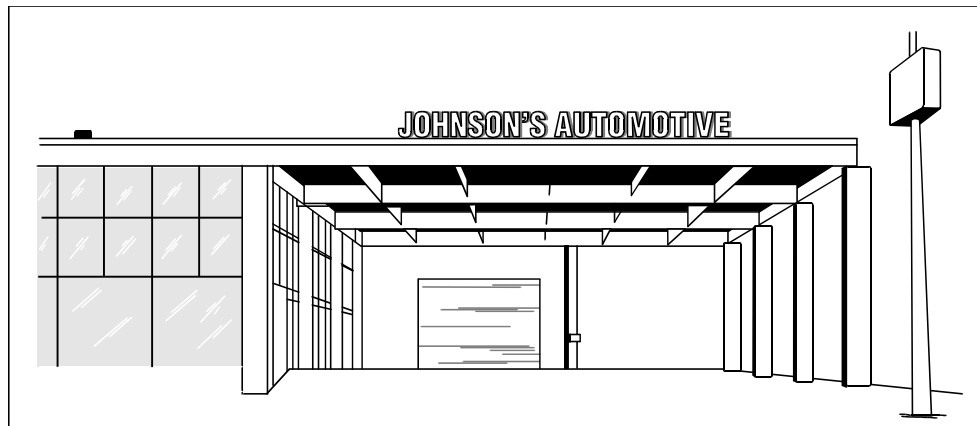
**The in-place cost of these extra components should be added to the basic building cost to arrive at the total structure cost. See page 236 to 248.** Heating and air conditioning systems. Fire sprinklers. Interior finish costs. Interior partitions. Drive-through doors. Canopies and walks. Exterior signs. Paving and curbing. Miscellaneous yard improvements. Hoists, gas pump and compressor costs are listed in the section "Additional Costs for Service Stations" beginning on page 204.

# Service Garage – Masonry or Concrete

## Length Less Than Twice Width

### Estimating Procedure

1. Use these figures to estimate buildings designed primarily for motor vehicle repair. Sales area should be figured separately. Use the costs for urban stores beginning on page 75.
2. Establish the building quality class by applying the information on page 208.
3. Compute the floor area.
4. If the wall height is more or less than 18 feet, add to or subtract from the square foot costs below the appropriate amount from the Wall Height Adjustment Table on page 212.
5. Multiply the adjusted square foot cost by the floor area.
6. Deduct for common walls or no wall ownership. Use the figures on page 212.
7. Multiply the total cost by the location factor on page 7 or 8.
8. Add the cost of heating and air conditioning systems, fire sprinklers, interior finish and partitions, drive-thru doors, canopies and walks, exterior signs, paving, curbing, and yard improvements. See page 236 to 248. Add the cost of hoists, pumps and compressors beginning on page 204.



**Service Garage (rear portion), Class 2**

### Square Foot Area

Quality Class	2,000	2,500	3,000	4,000	5,000	6,000	7,500	10,000	15,000	20,000	30,000
1, Best	77.58	70.45	65.40	58.64	54.18	51.03	47.59	43.86	39.67	37.19	34.44
1 & 2	74.47	67.68	62.75	56.28	52.00	48.94	45.71	42.19	38.07	35.73	33.02
2, Good	72.94	66.26	61.49	55.11	50.93	47.92	44.76	41.29	37.24	34.98	32.36
2 & 3	69.38	63.06	58.52	52.46	48.49	45.65	42.63	39.27	35.48	33.34	30.79
3, Average	67.41	61.21	56.79	50.92	47.04	44.29	41.36	38.09	34.43	32.33	29.90
3 & 4	63.77	57.87	53.70	48.15	44.52	41.93	39.13	36.05	32.52	30.52	28.25
4, Low	60.38	54.89	50.94	45.71	42.23	39.71	37.06	34.21	30.89	28.97	26.83

# Alternate Costs for Steel Buildings

**These costs are to be added to the basic building cost**

### **Skylights, Polycarbonate, with curb**

	2' x 2'	4' x 4'	4' x 8'
Single dome	\$170	\$449	\$566
Double dome	202	510	657
Triple dome	250	588	951
Double, ventilating	486	834	1,082

### **Partitions, Interior, 26 gauge steel, cost per square foot of partition with two sides finished**

Painted drywall finish	\$4.06
Painted plywood, fire retardant	5.93

### **Ventilators, round type, includes screen (gravity type), cost each**

Diameter	Stationary			Rotary		
	Galvanized	Colored	Aluminum	Galvanized	Colored	Aluminum
12"	\$230	\$249	\$411	\$366	\$411	\$517
16"	321	335	480	458	502	641
20"	386	410	550	559	589	730
24"	417	441	611	624	662	834

### **Ventilators, ridge type, includes screen and damper**

Throat Size	4"	9"	12"	14"
Cost per linear foot, galvanized	\$62	\$91	\$116	\$134
Cost per linear foot, colored	64	101	125	144

### **Ventilator-Dampers, cost each**

Diameter	12"	16"	20"	24"
Damper only	\$85	\$115	\$120	\$139
Dampers with cords and pulleys	169	212	261	301

### **Continuous Ridge Ventilator, includes screen and damper, cost per 10 foot unit**

Size & Type	First 10'		Each Additional 10'	
	Galvanized	Color	Galvanized	Color
9" throat	\$878	\$1,004	\$828	\$931
10" throat	1,004	1,105	893	1,004
12" throat	647	1,448	1,190	1,260

### **Steel Sliding Windows, includes glass and screens, cost per window**

3' x 2'6"	\$436
6' x 2'6"	539
6' x 3'8"	623

### **Smoke and Heat Vents, automatic control, cost per 10 foot unit**

Size & Type	First 10'		Each Additional 10'	
	Galvanized	Color	Galvanized	Color
9" ridge mounted	\$3,233	\$3,417	\$2,672	\$2,744
9" slope mounted	3,335	3,580	2,744	2,876

### **Aluminum Industrial Windows, includes glass and screens, cost per window**

Size and Type	Project Out	Fixed
3' x 2'6"	\$424	\$310
2' x 2'8"	454	340
6' x 2'6"	628	416
6' x 3'8"	761	529

#### **Add for operators:**

One or two 10 foot sections	Add \$107.00
Two to seven 10 foot sections	Add \$224.00

### **Aluminum Sliding Windows, includes glass and screens, cost per window**

Width	Height					
	2'	2'6"	3'	3'6"	4'	
2'	\$323	\$353	\$360	\$380	\$402	
3'	353	375	379	402	416	
4'	—	394	416	416	463	
5'	—	417	432	530	549	
6'	—	461	530	571	614	

If window is fixed, deduct \$5.55 per window. For mullions add \$11.00 each.



# Additional Costs for Commercial, Industrial, and Public Structures

## Section Contents

<b>Additional Structure Costs</b>	<b>237</b>
Basements	237
Communications Systems	237
Public Address Systems	237
Burglar Alarms	237
Canopies	237
Docks	237
Doors	238
Draperies	238
Dumbwaiters	238
Elevators	238
Escalators	238
Fill	239
Fire Escapes	239
Fire Extinguishers	239
Fire Sprinklers	239
Fireplaces	239
Heating and Cooling Systems	239
Kitchen Equipment	240
Mezzanines	240
Partitions	240
Pneumatic Tube Systems	240
Seating	240
Skylights	240
Ventilators	241
Walk-in Boxes	242
Material Handling Systems	242
<b>Display Fronts</b>	<b>242</b>
Display Front Illustrations	243
Display Front Classification and Costs	244
Bulkhead Walls	245
Ceiling	245
Entrances	245
Glass	245
Lighting	245
Platforms	245
Wall Finish	245
Satellite Receiver Systems	245
<b>Signs</b>	<b>246</b>
Post Mounting Costs	246
Rotators	247
<b>Yard Improvements</b>	<b>247</b>
Asphaltic Concrete Paving	247
Concrete Paving	247
Curbs	247
Gates	247
Striping	247
Lighting	248
Chain Link Fences	248
Wood Fences	248
Drainage Items	248

# Additional Structure Costs

## Basements

Cost includes concrete floor and walls, open ceiling, minimum lighting, no plumbing, and no wall finish. Cost per square foot of floor at 12' wall height.

Area	500	1,000	1,500	2,000	3,000	4,000	5,000	7,500	10,000	15,000	20,000
Cost	58.19	52.12	45.41	41.14	40.08	34.85	33.70	32.56	28.61	27.35	25.71

Add or subtract the amount listed in the table below to or from the square foot of floor cost for each foot of wall height more or less than 12 feet.

### Wall Height Adjustment Square Foot Area

Area	500	1,000	1,500	2,000	3,000	4,000	5,000	7,500	10,000	15,000	20,000
Cost	3.90	2.86	2.53	2.06	1.69	1.55	1.45	1.12	.92	.71	.67

## Canopies, per S.F. of canopy area

Light frame, flat roof underside, plywood and paint or cheap stucco supported by wood or light steel posts, 4" to 6" wood fascia.	\$20.09 to \$21.62
Average frame, underside of good stucco, flat roof, cantilevered from building or supported by steel posts, 6" to 12" metal fascia.	\$22.43 to \$30.38
Same as above but with sloping shake or tile roof.	\$23.44 to \$32.70
Corrugated metal on steel frame.	\$20.29 to \$30.38

## Canopy Lights, per S.F. based on one row of lights for 5' canopy

Recessed spots (1 each 6 linear feet)	\$3.24
Single tube fluorescent	5.95
Double tube fluorescent	8.34

## Public Address Systems, speakers attached to building. No conduit included.

Base cost, master control	\$904 to \$1,757
Per indoor speaker	188
Per outdoor speaker	376

## Sound Systems, cost per unit

Voice only, per unit	\$101 to \$171
Music (add to above), small units	101 to 131
Music (add to above), large units	131 to 394

Larger installations cost the least per unit.

## Docks for unloading trucks. Cost per S.F. of dock at 4' height

L x W	10'	20'	30'	50'	100'	200'
5'	35.21	31.29	28.53	25.77	23.87	22.17
10'	31.29	27.15	23.75	21.32	19.73	19.09
15'	27.47	23.02	20.36	17.61	16.33	15.16
20'	24.60	19.73	17.07	15.80	14.74	13.89

Cost includes compacted fill, three concrete walls, concrete floor, and rock base.

## Intercommunication Systems

Master control, base cost	\$1,896 to \$5,708
Cost per station	145 to 217
Nurses call system, per station	217 to 397

## Security Systems

Control panel	\$155 to \$309
Each door or window secured	31 to 69
Heat detectors, each	10 to 51
Smoke detectors, each	20 to 101
Motion detectors, each	20 to 41

## Loading Ramps, cost per S.F. of ramp

Size	
Under 300 S.F.	\$9.65
Over 300 S.F.	9.25

## Dock Levelers and Lifts, cost each

Dock leveler, manual	\$7,802
Dock leveler, mechanical	3,798
Powered platform dock leveler	
6' x 6' recessed	3,386
6' x 8' recessed	3,829
Electro-hydraulic, pit recessed scissor lift	
5,000 lb. capacity, 6' x 8'	10,144
10,000 lb. capacity, 8' x 10'	17,934
20,000 lb. capacity, 8' x 12'	29,607

## Additional Structure Costs

### Doors, with hardware

Exterior, commercial, cost per door	
Glass in wood (3' x 7')	\$943 to \$1,474
1/4" plate in aluminum (3' x 7')	1,525 to 2,473
Automatic, tempered glass (3' x 7')	7,253 to 11,023
Residential type (3' x 7')	359 to 660
Interior, commercial and industrial, cost per S.F.	
Hollow core wood	\$15.25 to \$15.97
Solid wood	15.35 to 19.88
Hollow core metal	33.48 to 39.63
Fire, cost per S.F.	
Hollow metal, 1-3/4"	\$52.82 to \$69.99
Metal clad, rolling	43.23 to 70.80
Metal clad, swinging	61.81 to 88.38

**Elevators, Freight, Electric**, car and equipment, per shaft, car speed in feet per minute, 2 stop

Capacity	50 to 75	100 to 150	200
2,500 lbs	\$63,276	—	—
3,000	66,780	\$76,500	\$88,455
3,500	80,240	80,189	90,040
4,000	74,935	83,430	96,450
5,000	80,140	91,470	103,232
6,000	88,330	100,110	111,300
8,000	100,050	111,440	126,495
10,000	114,902	126,445	144,990

For manual doors, **add** \$5,560 for each stop. For power operated doors, **add** \$8,430 for each additional stop. **Add** \$8,430 per car for self-leveling cars. **Add** for double center opening doors, per stop \$355. **Add** for deluxe cab (raised panel, interior, drop ceiling) \$4,220.

### Elevators, Freight,

Hydraulic, 100 F.P.M.

#### Shaft, car, machinery

2,500 lb. capacity	\$59,940
6,000 lb. capacity	100,800
Cost per stop	
Manual doors	9,500
Automatic doors	21,000

**Elevators, Passenger, Electric**, car and machinery cost, per shaft\*

Capacity	200 F.P.M., 5 Stops	350 F.P.M., 5 Stops	500 F.P.M., 5 Stops
2,000 lbs.	\$123,900	\$110,500	\$237,000
2,500 lbs.	127,300	117,800	244,900
3,000 lbs.	128,620	125,900	247,100
3,500 lbs.	129,330	132,360	248,600
4,000 lbs.	130,130	140,210	251,900
4,000 lbs (Hospital)	131,800	143,900	259,000

\*Add for each additional stop: 200 or 350 F.P.M. units, \$7,180; 500 F.P.M. units, \$11,816. Deduct for multi-shaft applications, \$3,393 to \$7,180 per additional shaft. Add for rear-opening door: \$10,200 to base cost, plus \$7,360 per door.

### Roll-Up Metal Warehouse Door with chain operator, cost each

10' x 10'	\$2,677
12' x 12'	3,553
14' x 14'	3,900
Fusible link (add to above)	580
Motor controlled (add to above)	293

### Draperies, cost per square yard of opening

	54" high	68" high	96" high
Minimum	\$22.90	\$23.00	\$25.80
Good quality	51.60	52.80	61.80
Better quality	62.90	68.80	84.50

### Escalators, cost per flight up or down

Total Rise	32" W	40" W	48" W
10' to 13'	\$136,990	\$140,080	\$152,440
14'	141,110	147,290	159,650
15'	146,260	153,470	165,830
16'	150,380	163,770	165,830
17'	156,560	165,830	168,920
18'	159,650	170,980	168,920
19'	164,800	172,010	169,950
20'	170,980	177,160	175,100
21'	176,130	179,220	179,220

**Add** for glass side enclosure: \$15,219 - \$17,923.

### Dumbwaiters, includes door, traction type

	1st Two Stops	Add'l. Stops
Hand operated, 25 fpm (no doors)		
25 lb.	\$2,420 to \$4,410	\$1,840
75 lb.	3,260 to 5,460	1,840
Electrical, with machinery above, floor loading		
100 lb., 50 fpm	\$9,100 to \$14,590	\$3,470
300 lb., 50 fpm	9,460 to 14,560	3,470
500 lb., 50 fpm	9,950 to 15,770	3,470
500 lb., 100 fpm	14,560 to 23,500	(5 stop)



## Additional Structure Costs

**Fill**, compacted under raised floor, includes perimeter retaining wall but not slab, per C.F.

Up to 10,000 S.F.	\$1.06 to \$1.70
Over 10,000 to 50,000 S.F.	.90 to 1.32

### Fire Extinguishers, cost each

Fire hose and cabinet	\$371 to \$733
Extinguisher cabinets	98 to 216
Extinguishers, chemical	78 to 192
Extinguishers, carbon dioxide	221 to 436

### Fire Escapes

Type	Unit	Cost
Second story	Each	\$4,222 to \$5,767
Additional floors	Per story	2,485 to 3,727

**Fire Sprinklers**, cost per S.F. of area served

Area	Wet Pipe System	
	Normal	Special*
to 2,000	\$4.53	\$5.60
2,001 to 4,000	3.15	4.53
4,001 to 10,000	2.79	3.85
Over 10,000	2.45	3.53

Area	Dry Pipe System	
	Normal	Special*
to 2,000	\$4.90	\$5.94
2,001 to 4,000	3.15	4.27
4,001 to 10,000	3.02	4.20
Over 10,000	2.79	3.84

Costs include normal installation, service lines, permit and valves.

\*Special hazard systems are custom engineered to meet code or insurance requirements and are usually so identified by a metal plate attached to the riser.

### Overhead Suspended Heaters, per unit

25 MBTU	\$1,091 to \$1,318
50	1,270 to 1,410
75	1,410 to 1,555
100	1,609 to 1,830
150	1,968 to 2,111
200	2,272 to 2,379
250	2,510 to 2,545

### Fireplace

	1 Story	2 Story
Freestanding wood burning heat circulating prefab fireplace, with interior flue, base and cap.	\$1,662	—
Zero-clearance, insulated prefab metal fireplace, brick face.	2,376	\$3,132
5' base, common brick, on interior face.	3,162	3,550
6' base, common brick, used brick, face brick or natural stone on interior face with average wood mantle.	4,930	5,284
8' base, common brick, used brick or natural stone on interior face, raised hearth.	6,8890	7,730

### Electric Heating Units

Baseboard, per linear foot	\$15.75 to \$31.50
Add for thermostat	42.00
Cable in ceiling, per S.F.	2.38 to 3.06
Wall heaters, per K.W.	52.50 to 105.00

### Heating and Cooling Systems

Type and Use	Cost per S.F. of Floor Area**			
	Heating Only		Heating & Cooling	
Elementary schools	\$7.43 to \$11.54	\$13.45 to \$21.04		
Secondary schools	7.95 to 12.32	14.46 to 22.42		
Government offices	12.87 to 19.98	23.44 to 36.28		
Libraries	8.80 to 16.05	16.05 to 24.72		
Fire stations	7.79 to 14.13	12.24 to 19.03		
Urban stores	4.90 to 7.58	8.91 to 13.81		
Suburban stores	3.92 to 6.06	7.11 to 11.06		
Small food stores	4.16 to 6.47	7.58 to 11.74		
Supermarkets	4.87 to 7.52	8.87 to 13.72		
Discount houses	3.59 to 5.60	6.54 to 10.19		
Bank and savings	6.56 to 10.18	11.89 to 18.43		
Department stores	4.60 to 7.12	8.37 to 13.00		
Reinforced concrete	5.79 to 8.99	10.57 to 16.36		
General offices				
Forced air	5.73 to 8.90	10.44 to 16.20		
Hot & chilled water	—	12.07 to 18.74		
Medical-Dental				
Forced air	6.23 to 9.69	11.34 to 17.69		
Hot & chilled water	—	12.78 to 19.90		
Convalescent hospitals				
Forced air	5.79 to 8.99	10.57 to 16.35		
Hot & chilled water	—	12.42 to 19.29		
Funeral homes	8.35 to 12.90	15.16 to 23.45		
Ecclesiastic buildings	6.44 to 10.01	11.71 to 18.04		
Restaurants	8.59 to 13.36	15.75 to 24.31		
Theaters	5.75 to 8.94	10.49 to 16.25		
Industrial buildings	2.48 to 6.17	—		
Interior offices	2.82 to 3.95	5.11 to 7.95		

\*\*Use the higher figures where more heating and cooling density is required.

## Additional Structure Costs

### Kitchen Equipment, cost per linear foot of stainless steel fixture

Work tables	\$837 to \$1,017
Serving fixtures	347 to 1,939

### Mezzanines, cost per S.F. of floor

Unfinished (min. lighting and plumbing)	2.60 to 31.10
Store mezzanines	43.10 to 54.70
Office mezzanines (without partitions)	46.60 to 60.50
Office mezzanines (with partitions)	60.50 to 95.00

Costs include floor system, floor finish, stairways, lighting, and partitions where applicable.

### Seating, cost per seat space

Theater, economy	\$168
Theater, lodge	308
Pews, bench type	81
Pews, seat type	113

### Partitions, cost per S.F. of surface

Gypsum on wood frame, (finished both sides) 2" x 4" wood studs, 24" on center with 1/2" gypsum board, taped, textures and painted.	\$5.82
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Plaster on wood frame (finished both sides) 2" x 4" wood studs, 24" on center with 2 coats plaster over gypsum lath, painted with primer and 1 coat enamel.	\$10.80
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### Pneumatic Tube Systems

Twin tube, two station system	
2-1/4" round, 500 to 1,500 feet	\$19,988 to \$36,360
3" round, 500 to 1,500 feet	20,604 to 39,663
4" round, 500 to 1,500 feet	21,432 to 45,743
4" x 7" oval, 500 to 1,500 feet	34,098 to 56,762

Automatic System, twin tube, cost per station	
4" round, 500 to 1,500 feet	\$25,452 to \$33,795
4" x 7" oval, 500 to 1,500 feet	34,098 to 36,885

### Skylights, Plastic Rectangular Domes, cost per unit

Size	Single Plastic Panel		Double Plastic Panel	
	Skylight Only	With 4" or 9" Insulated Curb	Skylight Only	With 4" or 9" Insulated Curb
16" x 16"	\$191	\$324	\$232	\$342
16" x 24"	217	367	262	359
16" x 48"	248	423	342	508
24" x 24"	248	393	367	387
24" x 32"	262	423	401	508
24" x 48"	306	479	423	576
28" x 92"	522	774	825	956
32" x 32"	262	423	367	508
32" x 48"	354	492	470	584
32" x 72"	449	697	766	884
39" x 39"	367	492	492	578
39" x 77"	548	774	956	1,026
40" x 61"	508	697	766	1,041
48" x 48"	393	576	576	710
48" x 64"	548	858	858	1,026
48" x 72"	635	987	987	1,160
48" x 92"	831	1,063	1,272	1,616
48" x 122"	1,171	1,404	1,606	1,873
58" x 58"	635	873	1,026	1,181
60" x 72"	796	1,063	1,237	1,415
60" x 92"	1,013	1,293	1,538	1,316
64" x 64"	809	1,026	1,115	1,772
77" x 77"	1,160	1,460	1,873	2,052
94" x 94"	2,062	2,408	3,378	3,745

Triple dome skylights cost about 30% more than double dome skylights.

## Additional Structure Costs

### Plastic Circular Dome Skylights, cost each

Size	Single Plastic Panel		Double Plastic Panel		Additives	
	4" Curb	9" Curb	4" Curb	9" Curb	Ceiling Dome	Wall Liner
30"	\$760	\$775	\$900	\$942	\$365	\$365
36"	775	811	942	1,014	465	390
48"	1,029	1,125	1,316	1,383	623	465
60"	1,304	1,359	1,749	1,772	909	479
72"	1,951	1,929	2,598	2,709	1,160	578
84"	2,675	2,854	3,745	3,946	1,661	683
96"	3,935	4,114	5,483	5,864	1,818	811

The above costs are for single skylights. For three or more, deduct 20%.

### Plastic Pyramid Skylights, cost each

Size	Height	Installed Cost	
		2 or Less	3 or More
39" x 39"	34"	\$1,212	\$1,009
48" x 48"	42"	1,715	1,432
58" x 58"	49"	1,905	2,077

### Plastic Continuous Vaulted Skylights, cost per L.F.

Width	Single Panel	Double Panel
16"	\$126	\$185
20"	134	193
24"	157	220
30"	192	265
36"	207	278
42"	220	289
48"	265	321
54"	278	347
60"	289	369
72"	321	396
84"	383	518

### Ventilators, Roof, Power Type, cost each

Throat Dia.	2 or Less	3 or More	Add for Insulated Curb
6"	\$544	\$528	\$97
8"	878	794	136
10"	1,059	981	166
12"	1,177	1,145	171
18"	1,284	1,210	184
24"	1,457	1,348	225
30"	2,508	2,282	239
36"	2,679	2,325	245
48"	5,904	5,251	302

Above costs are for a single-speed motor installation. Dampers and bird screens are included. Add: Explosive-proof units, add \$390 each. Two-speed motors, add \$679 to \$1,004 each. Plastic coating, depending on size of unit, add \$139 to \$211 each.

### Plastic Ridge Type Skylights, cost per linear foot

Width*	Single Panel	Double Panel
18"	\$285	\$425
24"	316	513
30"	394	584
36"	499	678
42"	524	818
48"	540	1,052

\*Width is from ridge to curb following slope of roof.

### Wire Glass Skylights,

Exterior Aluminum Frame, cost each

24" x 48"	\$437
24" x 72"	527
24" x 96"	703
48" x 48"	711
48" x 72"	872
48" x 96"	1,057

### Ventilators, Roof, Gravity Type, cost each

Throat Dia.	2 or Less	3 or More	Add for Insulated Curb
8"	\$237	\$223	\$115
12"	259	237	129
18"	398	389	182
24"	473	452	195

### Heat and Smoke Vents, cost each

Size	Plastic Dome Lid	Aluminum Covered Lid
32" x 32"	\$1,090	\$1,236
32" x 48"	1,298	1,329
50" x 50"	1,474	1,525
50" x 62"	1,675	1,916
50" x 74"	1,535	1,999
50" x 92"	2,019	2,225
50" x 98"	2,359	2,380
62" x 104"	2,998	3,070
74" x 104"	3,358	3,689

## Additional Structure Costs

### Walk-In Boxes, cost per S.F. of floor area

Temperature Range	50	100	200	300	400	500	600
Over 45°	175	119	92	78	75	68	67
25.50° to 45°	195	139	109	93	83	78	75
0° to 25°	232	172	125	109	93	86	82
-25.50° to 0°	253	206	165	138	119	111	102

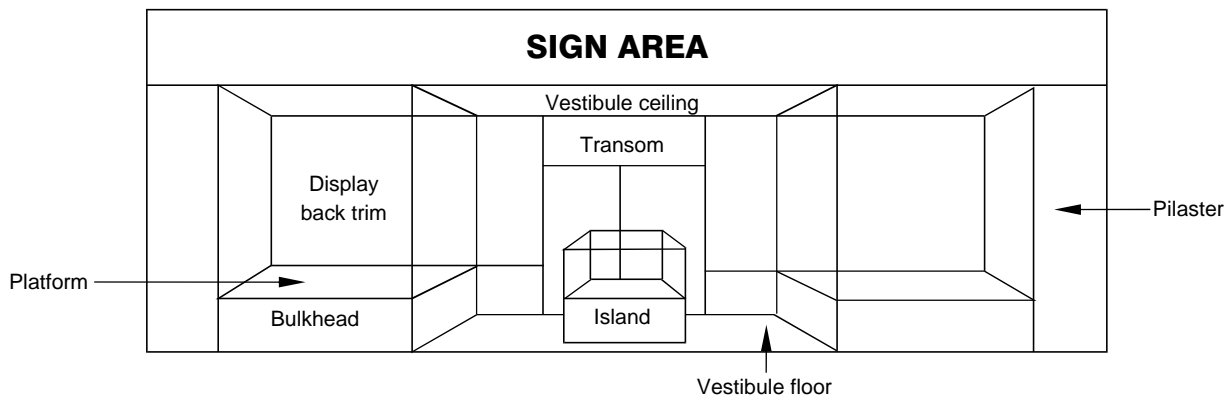
**Cost Includes:**

Painted wood exterior facing, insulation as required for temperature, interior plaster, one 4 x 7 door per 300 S.F. of floor area. Costs are based upon 8' exterior wall height. Costs do not include machinery and wiring. Figure refrigeration machinery at \$2,000.00 per ton capacity.

### Material Handling Systems

Belt type conveyors, 24" wide.	
Horizontal sections, per linear foot	\$226
Elevating, descending sections, per flight	377
Mail conveyors, automatic, electronic.	
Horizontal, per linear foot	1,793
Vertical, per 12' floor	23,200
Mail chutes, cost per floor, 5" x 14", aluminum	1,130
Linen chutes, 18 gauge steel, 30" diameter, per 10' floor	1,860
Disinfecting and sanitizing unit, each	765

## Display Fronts

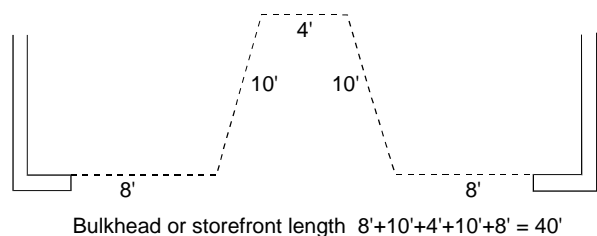


Display front costs may be estimated by calculating the in-place cost of each component or by estimating a cost per linear foot of bulkhead and multiplying by the bulkhead length. This section contains data for both methods. For most fronts, the cost per linear foot method is best suited for rapid preliminary estimates.

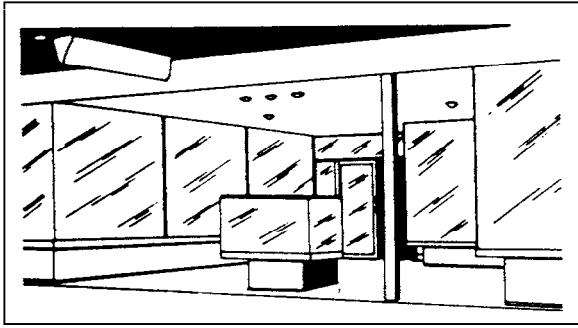
Bulkhead length is the distance from the inside of the pilaster and following along the bulkhead or glass to the inside of the opposite pilaster. This measurement includes the distance across entryways.

The cost per linear foot of bulkhead is estimated using the storefront specifications and costs in this section. This manual suggests linear foot costs for four quality types: low cost, average, good, and very good. Costs are related for each quality type in terms of flat or recessed type fronts.

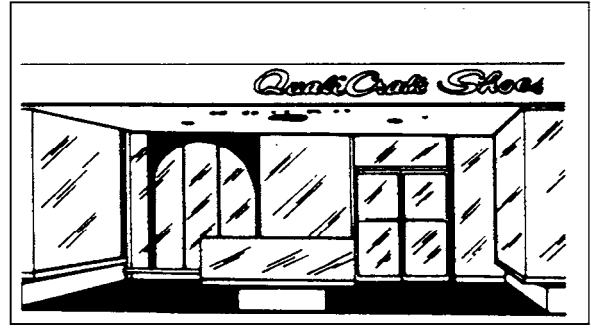
Recessed type fronts include all components described in the specifications. Flat front costs do not include the following components: vestibule floor, vestibule and display area ceiling framing, back trim, display platform, lighting. The cost of automatic door openers is not included in front costs.



# Display Fronts



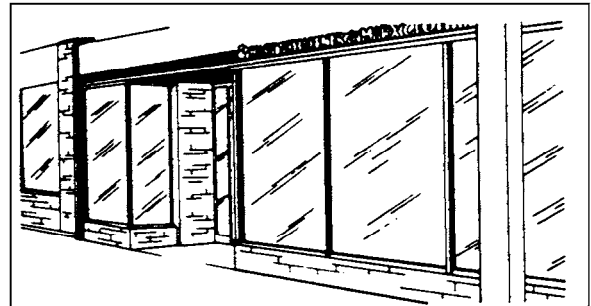
Display Front, Best



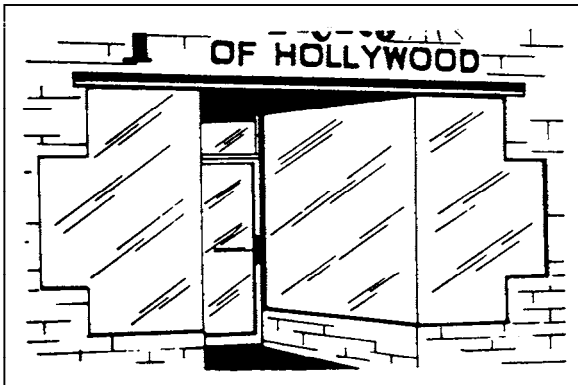
Display Front, Best



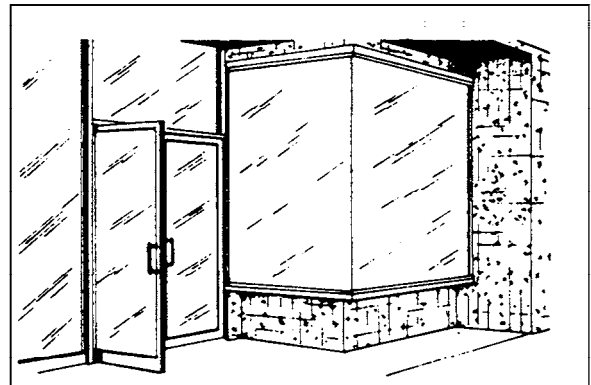
Display Front, Good



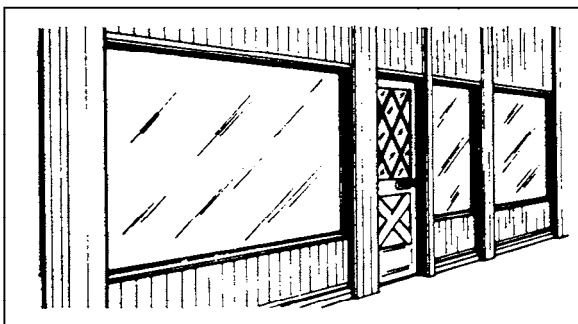
Display Front, Good



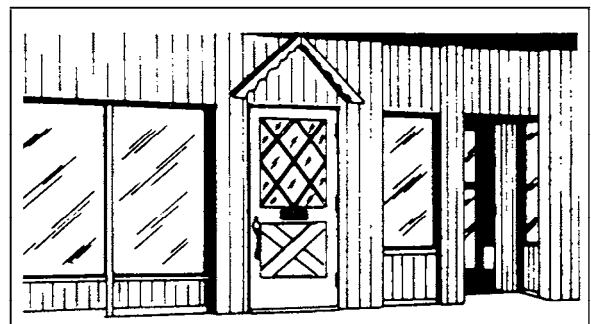
Display Front, Average



Display Front, Average



Display Front, Low Cost



Display Front, Low Cost

## Display Fronts

All front costs are based upon a height of 10 feet from the floor level to the top of the display window. Variations from this standard should be adjusted by using the display window height adjustment costs shown with the front foot costs. These amounts are added or deducted for each foot of variation from the standard.

Bulkhead height variations will not require adjustment. Cost differentials, due to variations in bulkhead height, will be compensated for by equal variations in display window height if overall heights are equal.

Sign areas are based upon 4 foot heights. Cost adjustments are given for flat type and for recessed type fronts. A cost range is given for recessed type fronts because deeply recessed fronts will have lower linear foot costs for sign area components than will moderately recessed fronts because this cost is spread over a longer distance when recesses are deep.

Display island costs are estimated by applying 60 to 80 percent of the applicable linear foot cost to the island bulkhead length. Window height adjustments should be made, but sign height adjustments will not be necessary.

Components	Best	Good	Average	Low Cost
<b>Bulkhead</b> (0 to 4' high) (10% of total cost)	Vitrolite domestic marble or stainless steel.	Black Carrera flagstone, terrazzo or good ceramic tile.	Average ceramic tile, Roman brick or imitation flagstone.	Stucco, wood or common brick.
<b>Window Area</b> (30% of total cost)	Bronze or stainless steel. 1/4" float glass with mitered joints.	Heavy aluminum. 1/4" float glass, some mitered joints.	Aluminum. 1/4" float glass.	Light aluminum with wood stops. Crystal or 1/4" float glass.
<b>Sign Area</b> (4' high) (10% of total cost)	Vitrolite, domestic marble or stainless steel.	Black Carrera flagstone, terrazzo or good ceramic tile.	Average ceramic tile, Roman brick or imitation flagstone.	Stucco.
<b>Pilasters</b> (5% of total cost)	Vitrolite, domestic marble.	Black Carrera flagstone, terrazzo or good ceramic tile.	Average ceramic tile, Roman brick or imitation flagstone.	Stucco.
<b>Vestibule Floor*</b> (5% of total cost)	Decorative terrazzo.	Decorative terrazzo.	Plain terrazzo.	Concrete.
<b>Vestibule and Display Area Ceilings*</b> (10% of total cost)	Stucco or gypsum wallboard and texture.	Stucco or gypsum wallboard and texture.	Stucco or gypsum wallboard and texture.	Gypsum wallboard and texture.
<b>Back Trim*</b> (5% of total cost)	Hardwood veneer on average frame.	Gypsum wallboard and texture or light frame.	None.	None.
<b>Display Platform Cover*</b> (10% of total cost)	Excellent carpet.	Good carpet.	Average carpet.	Plywood with tile.
<b>Lighting*</b> (10% of total cost)	1 recessed spot per linear foot of bulkhead.	1 recessed spot per linear foot of bulkhead.	1 exposed spot per 2 linear feet of bulkhead.	1 exposed spot per 4 linear feet of bulkhead.
<b>Doors</b> (5% of total cost)	3/4" glass double doors.	Good aluminum and glass double door or single 3/4" glass door.	Average aluminum and glass double door.	Wood and glass.
<b>Note:</b> Use the percent of total cost to help identify the correct quality classification.				
<b>Costs, Flat Fronts</b>	\$1,142/linear foot.	\$766/linear foot.	\$492/linear foot.	\$430/linear foot.
<b>Costs, Recessed Fronts</b>	\$1,213/linear foot.	\$1,033/linear foot.	\$586/linear foot.	\$476/linear foot.
<b>Display Window</b> <i>Adjustment per Foot of Height</i>	\$52.30/linear foot.	\$48.60/linear foot.	\$46.20/linear foot.	\$45.20/linear foot.
<b>Flat Front, Sign Area</b> <i>Adjustment per Foot of Height</i>	\$51.90/linear foot.	\$32.70/linear foot.	\$12.99/linear foot.	\$4.32/linear foot.
<b>Recessed Front, Sign Area</b> <i>Adjustment per Foot of Height</i>	\$18.30 to \$24.35/linear foot.	\$11.20 to \$14.28/linear foot.	\$4.88 to 6.98/linear foot.	\$2.59 to \$2.87/linear foot.

\*Not included in flat front costs.

## Display Fronts

### Lighting, cost per fixture

Open incandescent	\$60.14 to \$86.92
Recessed incandescent	86.72 to 174.93
Fluorescent exposed, 4' single	188.29 to 278.49
Fluorescent recessed, 4' single	200.59 to 356.80

### Bulkhead Walls, cost per S.F. of wall

Up to 5' high, nominal 6" thick	
Concrete	\$16.48 to \$24.44
Concrete block	11.51 to 17.10
Wood frame	7.10 to 12.56

### Ceiling, cost per S.F. of floor

Dropped ceiling framing	\$2.39 to \$3.35
Acoustical tile on wood strips	3.71 to 4.61
Acoustical plaster including lath	3.43 to 5.02
Gypsum board, texture and paint	2.67 to 3.94
Plaster and paint including lath	3.82 to 5.25

### Entrances, cost per entrance

Aluminum and 1/4" float glass	
Single door, 3' x 7'	\$1,785 to \$2,950
Double door, 6' x 7'	3,160 to 4,360
Stainless steel and 1/4" float glass	
Single door, 3' x 7'	3,520 to 5,530
Double door, 6' x 7'	4,850 to 7,916
3/4" tempered glass	
Single door, 3' x 7'	3,690 to 5,290
Double door, 6' x 7'	6,180 to 7,800

Includes door, glass, lock handles, hinges, sill and frame.

### Exterior Wall Finish, cost per S.F. of wall

Aluminum sheet baked enamel finish	\$4.85 to \$7.85
Brick veneer	
Common brick	\$9.56 to \$12.48
Roman	12.39 to 18.21
Norman	12.39 to 18.21
Glazed	15.09 to 22.68
Carrera glass	
Black	23.92 to 36.93
Red	25.70 to 39.01
Flagstone veneer	
Imitation	16.33 to 20.91
Natural	25.18 to 40.05
Marble	
Plain colors	36.97 to 48.82
With color variations	67.36 to 79.40
Stucco	3.74 to 4.88
Terrazzo	24.56 to 33.71
Tile, ceramic	15.50 to 22.68

### Display Platforms,

cost per S.F. of platform area

Framing up to 5' high	\$7.43 to \$11.53
Hardwood cover	4.48 to 7.31
Plywood cover	2.99 to 4.12

### Glass and Window Frames,

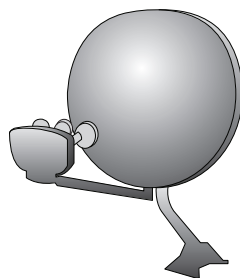
per S.F. of glass

Glass only installed	
1/4" float	\$9.12 to \$12.66
1/4" float, tempered	12.00 to 16.12
1/4" float, colored	9.38 to 16.12
Store front, 1/4" glass in aluminum frame	
Anodized, 8' high	30.24 to 41.37
Anodized, 6' high	36.44 to 48.41
Anodized, 3' high	44.99 to 56.85
Satin bronze, 6' high	42.32 to 55.46
Satin bronze, 3' high	51.66 to 64.68

### Satellite Receiver Systems

Satellite receiver systems are common in mountain and rural areas, where TV reception is limited. They are also often installed in residential or commercial areas, for homes, motels or hotels, restaurants and businesses. Installed cost for an all-automatic, motorized system, including wiring to one interior outlet.

Exterior disk plus electronics	\$190 to \$500
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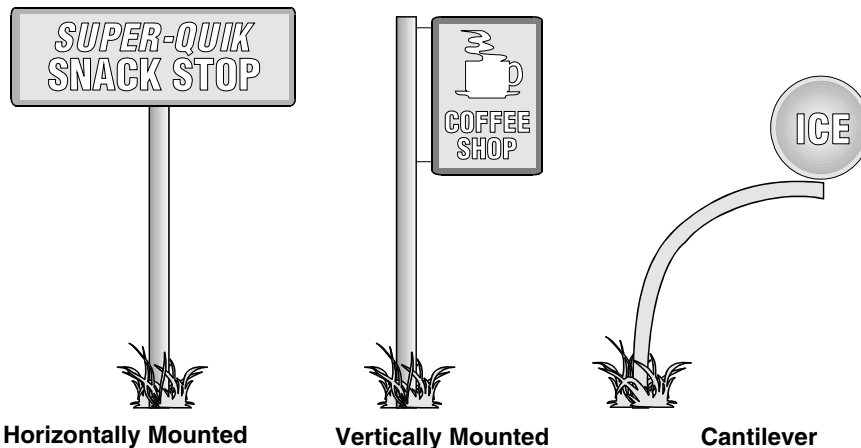
# Signs

## **Lighted Display Signs,** Cost per S.F. of sign area

Painted sheet metal with floodlights	\$93.00 to \$119.50
Porcelain enamel with floodlights	99.10 to 134.80
Plastic with interior lights	112.30 to 175.00
Simple rectangular neon with painted sheet metal faces and a moderate amount of plain letters	118.60 to 214.00
Round or irregular neon with porcelain enamel faces and more elaborate lettering	175.00 to 256.00
Channel letters - individual neon illuminated metal letters with translucent plastic faces, (per upright inch, per letter)	14.90 to 22.40

All of the above sign costs are for double-faced signs. Use 2/3 of those costs for single-faced signs. Sign costs include costs of installation and normal electrical hookup. They do not include the cost of a post. If signs are mounted on separate posts, post mounting costs must be added. These costs are for custom-built signs (one-at-a-time orders). Mass-produced signs will have lower costs.

## **Post Mounting Costs for Signs**



## **Post Mounting Costs**

Post Height	Pole Diameter at Base					
	4"	6"	8"	10"	12"	14"
15	\$1,343	\$1,598	\$2,353	\$3,170	\$4,934	\$4,984
20	1,592	1,899	2,719	3,288	5,870	6,602
25	1,825	2,147	2,817	3,912	6,530	7,211
30	1,988	2,554	2,922	4,270	6,899	7,983
35	—	2,778	3,288	4,764	7,805	8,524
40	—	2,949	4,015	5,038	8,118	9,563
45	—	—	4,702	5,737	8,861	9,898
50	—	—	5,038	6,541	9,431	10,846
55	—	—	—	6,900	9,893	11,809
60	—	—	—	7,301	10,619	12,350
65	—	—	—	—	12,412	13,125

If signs are mounted on separate posts, post mounting costs must be added. Post mounting costs include the installed cost of the post and foundation. On horizontally mounted signs, post height is the distance from the ground to the bottom of the sign. On vertically mounted signs, post height is the distance to the top of the post. For cantilevered posts, use one and one-half to two times the conventional post cost.

All of the above post costs are for single posts. Use 90% of the single post costs for each additional post.



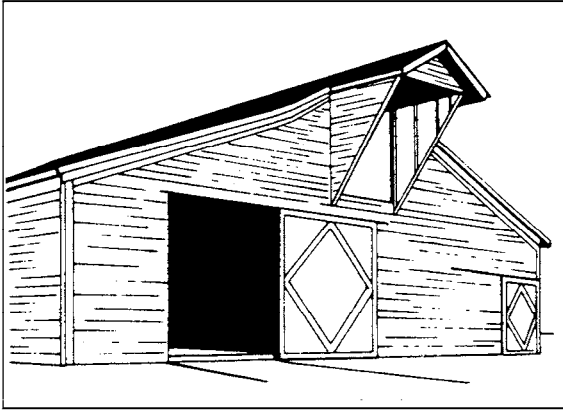
# Agricultural Structures Section

## Section Contents

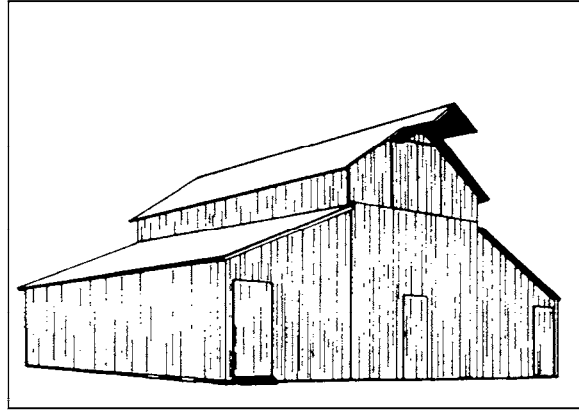
<b>Structure Type</b>	<b>Page</b>
General Purpose Barns	250
Hay Storage Barns	251
Feed Barns	252
Shop Buildings	253
Machinery and Equipment Sheds	254
Small Sheds	255
Pole Barns	256
Low Cost Dairy Barns	257
Stanchion Dairy Barns	258
Walk-Through Dairy Barns	259
Modern Herringbone Barns	260
Miscellaneous Dairy Costs	261
Poultry Houses, Conventional	262
Poultry Houses, Modern Type	263
Poultry Houses, High Rise Type	264
Poultry Houses, Deep Pit Type	265
Poultry House Equipment	266
Greenhouses	267
Migrant Worker Housing	268
Miscellaneous Agricultural Structures	269
Typical Lives for Agricultural Buildings	269

# General Purpose Barns

## Quality Classification



General Purpose Barn, Class 1



General Purpose Barn, Class 3

Component	Class 1 Good Quality	Class 2 Average Quality	Class 3 Low Quality
<b>Foundation</b> (20% of total cost)	Continuous concrete.	Concrete or masonry piers.	Redwood or cedar mudsills.
<b>Floor</b> (5% of total cost)	Concrete.	Dirt, leveled & compacted.	Dirt, leveled & compacted.
<b>Wall Structure</b> (25% of total cost)	Good wood frame, 10' eave height.	Average wood frame, 10' eave height.	Light wood frame, 10' eave height.
<b>Exterior Wall Cover</b> (25% of total cost)	Good wood siding, painted.	Standard gauge corrugated iron, aluminum or average wood siding.	Light aluminum or low cost boards.
<b>Roof Construction</b> (9% of total cost)	Medium to high pitch, good wood trusses.	Medium to high pitch, average wood trusses.	Medium to high pitch, 2" x 4" rafters 24" to 36" o.c. or light wood trusses.
<b>Roof Cover</b> (5% of total cost)	Wood shingles.	Standard gauge corrugated iron or aluminum.	Light aluminum.
<b>Electrical</b> (8% of total cost)	Four outlets per 1,000 S.F.	Two outlets per 1,000 S.F.	None.
<b>Plumbing</b> (3% of total cost)	Two cold water outlets.	One cold water outlet.	None.

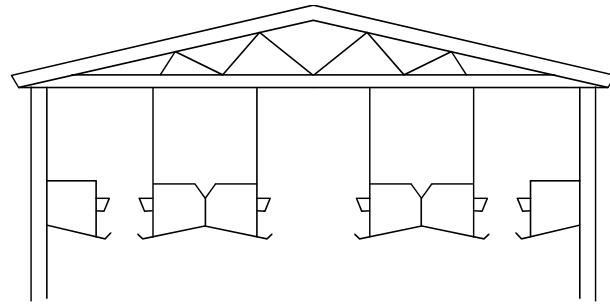
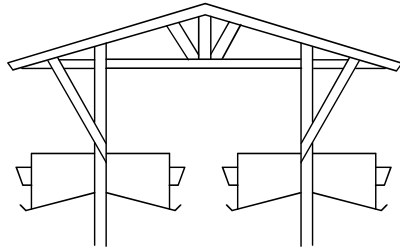
**Note:** Use the percent of total cost to help identify the correct quality classification.

### Square Foot Area

Quality Class	1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000	11,000
1, Good	44.58	41.07	38.03	36.50	35.02	33.46	32.38	31.65	31.03	30.42	29.89
2, Average	33.08	29.85	27.65	26.56	25.51	24.61	23.89	23.46	23.06	22.68	22.31
3, Low	21.56	18.63	17.30	16.56	16.07	15.74	15.42	15.23	15.02	14.90	14.73

# Poultry Houses

## Conventional Lay Cage Type



### Basic Building

Component	Good Quality	Average Quality	Low Quality
<b>Floors</b> (20% of total cost)	2" concrete.	Dirt with 4' concrete walkways.	Dirt, leveled and compacted.
<b>Foundations</b> (15% of total cost)	Thickened slab.	Concrete piers.	Wood piers.
<b>Frame</b> (20% of total cost)	Light steel or average wood frame.	Average wood frame.	Light wood frame.
<b>Roof Cover</b> (5% of total cost)	Aluminum or corrugated iron.	Light aluminum or composition.	Light aluminum or composition.
<b>Exterior</b> (8% of total cost)	Plywood.	Vinyl curtains.	Wood lath.
<b>Lighting</b> (20% of total cost)	Good system, automatic controls.	Average system, automatic controls.	Minimum system, manual controls.
<b>Plumbing</b> (10% of total cost)	Good system.	Average system.	Fair system.
<b>Insulation</b> (2% of total cost)	Roof only.	None.	None.
<b>Basic Building Cost Per S.F.</b>	\$16.13 to \$19.40	\$10.70 to \$14.35	\$9.20 to \$10.75

**Note:** Use the percent of total cost to help identify the correct quality classification.

### Equipment

Component	Best Quality	Good Quality	Average Quality	Low Quality
<b>Cages</b> (35% of total cost)	12" x 20" double deck.	12" x 20" single deck.	12" x 20" single deck.	12" x 12" single deck.
<b>Water System</b> (20% of total cost)	Automatic cup system.	Automatic cup system.	Simple "V" trough.	Simple "V" trough.
<b>Feed System</b> (30% of total cost)	Automatic system.	"V" trough.	"V" trough.	"V" trough.
<b>Egg Gathering</b>	Manual.	Manual.	Manual.	Manual.
<b>Cooling</b> (15% of total cost)	Pad and fan system.	Pad and fan system.	Simple fogging system.	Simple fogging system.
<b>Cost Per S.F.</b>	\$24.44 to \$25.73	\$14.92 to \$17.91	\$10.70 to \$13.84	\$9.09 to \$12.66

**Note:** Use the percent of total cost to help identify the correct quality classification.

# Index

## A

Adjustment factors, live load ..... 229  
Adjustments, wall heights..... 5  
Adjustments for area ..... 7  
Administrative office (military) ... 272  
A-frame ..... 32  
A-frame cabins ..... 38-41  
    4 corners ..... 39  
    6 corners ..... 40  
    8 corners ..... 41  
A-frame restaurants ..... 183-184  
Age factors ..... 9  
Agricultural structures ..... 249-269  
Air and water service ..... 205  
Air compressors ..... 206  
Air conditioning ..... 18, 28, 266  
Aircraft avionics shop (military) ... 272  
Aircraft machine shop (military) ... 272  
Aircraft operations (military) ..... 272  
Ambulatory clinic (military) ..... 272  
Appliances ..... 29  
Applied instruction building  
    (military) ..... 272  
Area modification factors ..... 6, 7-8  
Area of buildings ..... 4  
Auto service centers ..... 218-221  
Automatic teller ..... 125  
Average Life ..... 43

## B

Balconies ..... 28  
Banks and savings offices... 115-125  
Barns ..... 250-252, 256-260  
    dairy ..... 257-260  
    feed ..... 252  
    general purpose ..... 250  
    hay storage ..... 251  
    herringbone ..... 260  
    low cost ..... 257  
    pole ..... 256  
    stanchion ..... 258  
    walk-through ..... 259  
Barracks, dormitory (military) ..... 272  
Baseboard units ..... 28  
Basement garages ..... 31  
Basements ..... 237  
Basements, residential ..... 27  
Bathrooms, multi-family  
    residential ..... 30  
Block, concrete ..... 42  
Bowling alley (on military base) ... 272  
Boxes, walk-in ..... 242  
Brick ..... 42  
Buffet hutch ..... 18  
Building classes ..... 4  
Building quality ..... 4  
Building shapes ..... 4  
Built-ins ..... 18  
Bulkheads ..... 242, 244, 245  
Bumpers ..... 247

## C

Cabins ..... 32, 38-42  
Cages, poultry ..... 262, 263, 264,  
    265, 266  
Canopies ..... 204, 232, 237  
Canopy lights ..... 237  
Carports ..... 18, 29, 42  
Cash boxes ..... 205  
Catch basin ..... 248  
Ceilings ..... 245

Central air ..... 18, 28  
Chain link fence ..... 248  
Chapel center (on military base) ... 272  
Child development center  
    (on military base) ..... 272  
Churches ..... 172-173  
City hall ..... 56, 59  
Classes, quality ..... 11, 16, 19, 23,  
    33, 38, 44, 47, 50, 53, 56, 59, 76, 82,  
    89, 94, 103, 105, 107, 109, 111, 113,  
    115, 120, 126, 129, 132, 135, 143, 151,  
    159, 167, 169, 171, 173, 175, 178,  
    181, 183, 185, 191, 195-196, 198,  
    200, 202, 208, 213, 218, 223, 227,  
    244, 250-255, 257-260, 262-265, 267,  
    268  
Classrooms, temporary ..... 55  
Coffee shop restaurants ..... 178-180  
Commercial structures ..... 74-248  
Commissary (military) ..... 272  
Compressors, refrigeration ..... 261  
Concrete block ..... 42  
Concrete decks, uncovered ..... 27  
Concrete paving ..... 247  
Concrete walls ..... 42  
Contents ..... 3  
Convalescent hospitals ..... 167-169  
Conventional recreational dwellings  
    4 corners ..... 34  
    6 corners ..... 35  
    8 corners ..... 36  
    10 corners ..... 37  
Conventional restaurants ..... 181-182  
Coolers ..... 28  
Coolers, evaporative ..... 266  
Cooling ..... 18  
Cooling pads ..... 266  
Corral, holding ..... 261  
Cost tables, explanation ..... 4  
Counters ..... 125  
Covered porches ..... 27  
Curbing ..... 206  
Curbs ..... 247  
Current dollar costs ..... 9

## D

Dairy barns ..... 257-260  
Dampers ..... 234  
Deck roofs ..... 18  
Decks ..... 42  
    concrete ..... 27  
Decks and porches ..... 18, 27, 42  
Dental clinic (on military base) ... 272  
Department stores ..... 126-134  
Depreciation ..... 6, 43  
Dining facility (on military base) ... 272  
Discount houses ..... 111-114  
Dishwasher ..... 18  
Dispensers ..... 204  
Display fronts ..... 242-245  
Display platforms ..... 245  
Display signs ..... 246  
Dock levelers ..... 237  
Docks ..... 237  
Domes, skylights ..... 240  
Door hoods ..... 233  
Doors  
    exterior ..... 238  
    fire ..... 238  
    hollow metal ..... 232  
    interior ..... 238  
    roll-up ..... 238  
    sidewall, sliding ..... 232

walk-thru ..... 232  
warehouse ..... 238  
Downspouts ..... 233  
Drainage ..... 248  
Draperies ..... 238  
Dumbwaiters ..... 238

## E

Ecclesiastic buildings ..... 173-174  
Economic obsolescence ..... 6  
Education center (on  
    military base) ..... 272  
Effective age ..... 6  
Electric heating ..... 239  
Elementary school (military  
    dependents) ..... 272  
Elementary schools ..... 44-49  
Elevators ..... 30, 238  
Entrances ..... 136-141, 144-149,  
    152-157, 160-165, 245  
Equipment room ..... 258, 259  
Equipment shed ..... 254, 260  
Escalators ..... 238  
Evaporative cooler ..... 18  
Explanation of tables ..... 4  
External access ..... 125  
External offices ..... 227  
Extinguishers, fire ..... 239

## F

Factory buildings ..... 226  
Family housing (on military  
    base) ..... 272  
Family service center (military) ... 272  
Fans ..... 266  
Feed barns ..... 252  
Feed tanks, bulk ..... 269  
Feeders, automatic ..... 266  
Fence  
    cable ..... 261  
    chain link ..... 248  
    metal rail ..... 261  
    wood ..... 248  
Fencing ..... 206  
Fill ..... 239  
Finishes, wall ..... 245  
Fire and rescue station  
    (on military base) ..... 272  
Fire escapes ..... 239  
Fire extinguishers ..... 239  
Fire sprinklers ..... 239  
Fire stations ..... 68  
    on military base ..... 272  
Fireplaces ..... 18, 29, 42, 239  
Fixtures ..... 125  
Flatwork ..... 42, 261  
Floor furnaces ..... 28  
Foggers ..... 266  
Foundations, permanent, for  
    manufactured housing ..... 18  
Framed openings ..... 233  
Functional obsolescence ..... 6  
Funeral homes ..... 171-172  
Furnaces ..... 28

## G

Garages ..... 29, 31, 42  
    basement ..... 31  
    ground level ..... 31  
    roll-up ..... 31  
    separate structure ..... 31  
Garbage disposal ..... 18

Gasoline storage tanks ..... 205  
Gates ..... 247-261  
General office buildings ..... 135-150  
General purpose barns ..... 250  
Glass ..... 245  
Government offices ..... 56-61  
Greenhouses ..... 267  
Gutters ..... 233

## H

Half classes ..... 4  
Half-baths ..... 18  
Half-story costs ..... 30, 42  
Hangars (military) ..... 272  
Hay shelters ..... 261  
Hay storage barns ..... 251  
Heat and smoke vents ..... 241  
Heaters  
    baseboard ..... 239  
    electric ..... 28, 239  
    suspended ..... 239  
Heating ..... 42, 266  
Heating and cooling ..... 28, 239  
Herringbone barns ..... 260  
High school (military  
    dependents) ..... 272  
Historical index ..... 9  
Holding corral ..... 261  
Holding tanks ..... 261  
Hospitals, convalescent ..... 167-170  
How to use this book ..... 4-6

## I

Index, historical ..... 9  
Industrial buildings ..... 223  
    light ..... 225  
Industrial structures ..... 222-248  
Installation maintenance shop  
    (military) ..... 272  
Instructions ..... 4  
Insulation ..... 233  
Intercom ..... 237  
Internal offices ..... 227  
Island lighters ..... 205  
Island office ..... 204

## J

Jr. high/middle school (military  
    dependents) ..... 272

## K

Kitchen equipment ..... 240

## L

Laundry sinks ..... 18  
Libraries, public ..... 62  
Library (on military base) ..... 272  
Lifts ..... 237  
Light industrial buildings ..... 225  
Lighting ..... 245, 248  
Limitations ..... 6  
Livestock scales ..... 269  
Loading ramps ..... 237  
Loafing sheds ..... 261  
Local modifiers ..... 7-8  
Location adjustments ..... 6  
Lube room equipment ..... 205

# Index

## M

Machinery and equipment sheds... 254  
Main Exchange (military)..... 272  
Manholes..... 248  
Manufactured housing..... 16-18  
    additional costs..... 18  
Material handling..... 242  
Medical clinic (on military base) ... 272  
Medical facility (on military base)..... 272  
Medical-dental buildings..... 151-159  
Mezzanines..... 125, 240  
Microwave..... 18  
Migrant worker housing..... 268  
Military construction costs..... 270  
Milk house..... 257  
Milk line..... 261  
Milking barn..... 258-260  
Mobile home parks..... 195-197  
Mobile homes..... 16-18  
Mortuaries..... 171-172  
Motels..... 23-26  
Multi-family residences..... 20-22  
Multi-unit buildings..... 92-93

## N

Night deposit vault..... 125  
Normal Percent Good..... 235

## O

Obsolescence  
    economic..... 6  
    functional..... 6  
    physical..... 6  
Offices, external and internal..... 227  
Offices, government..... 56-61  
Openings, framed..... 233  
Operations building (military)..... 272  
Overhangs..... 233  
Overhead heaters..... 239

## P

PA systems..... 237  
Parachute and dinghy shop (military)..... 272  
Partitions..... 240  
    interior..... 234  
Paving..... 206  
    asphaltic..... 247  
    concrete..... 247  
Percent Good..... 43  
Percent Good table..... 235  
Physical fitness training center (military)..... 272  
Physical lives..... 43, 235, 269  
Physical obsolescence..... 6  
Platforms..... 245  
Plumbing..... 42  
Pneumatic tube systems..... 240  
Pole barns..... 256  
Porch roofs..... 18, 27  
Porches, covered..... 27  
Porches and decks..... 18, 42  
Post mounting..... 207, 246  
Posts..... 42  
Poultry houses..... 262-266  
    controlled environment..... 263  
    conventional..... 262

    deep pit..... 265  
    equipment costs..... 266  
    high rise..... 264  
Prefabricated classrooms..... 55  
Present Value..... 43  
Pressure tanks..... 269  
Public address systems..... 237  
Public buildings  
    elementary schools..... 44-47  
    libraries..... 62  
    secondary schools..... 50-55  
Pullmans..... 18  
Pumps..... 204

## Q

Quality classes, explanation..... 4  
Quality classifications  
    A-frame cabins..... 38  
    A-frame restaurants..... 183  
    auto service centers..... 218  
    banks and savings offices..... 115, 120  
    coffee shop restaurants..... 178  
    convalescent hospitals..... 167, 169  
    conventional recreational dwellings..... 33  
    conventional restaurants..... 181  
    department stores..... 126, 129, 132  
    discount houses..... 111, 113  
    display fronts..... 244  
    ecclesiastic buildings..... 173  
    feed barns..... 252  
    funeral homes..... 171  
    general office buildings..... 135, 143  
    general purpose barns..... 250  
    government offices..... 56, 59  
    greenhouses..... 267  
    hay storage barns..... 251  
    industrial buildings..... 223  
    internal offices..... 227  
    machinery and equipment sheds..... 254  
    manufactured housing..... 16  
    medical-dental buildings..... 151, 159  
    migrant worker housing..... 268  
    mobile home parks..... 195  
    modern herringbone barns..... 260  
    motels..... 23  
    multi-family..... 19  
    poultry houses..... 262  
    schools, elementary..... 44-45, 47  
    schools, secondary..... 50-53  
    self service restaurants..... 175  
    service garages..... 208, 213  
    service stations..... 198, 200, 202  
    shop buildings..... 253  
    single family..... 11  
    small food stores..... 107, 109  
    small sheds..... 255  
    suburban stores..... 89, 94  
    supermarkets..... 103, 105  
    theaters..... 185, 191  
    urban stores..... 76, 82  
Quality specifications..... 4

## R

Rails and steps..... 18  
Ramp..... 261  
Receiver systems, satellite..... 245  
Record storage..... 125  
Recreation center (military)..... 272  
Recreational dwellings..... 32-42  
Regional medical center (military)..... 272

Remaining Life..... 43  
Reserve Center (military)..... 272  
Residences  
    multi-family..... 19-22  
    single family..... 10-15  
Residential structures section... 10-43  
Restaurants  
    A-frame..... 183-184  
    coffee shop..... 178-180  
    conventional..... 181-182  
    self service..... 175-177  
Room coolers..... 28  
Rotators..... 206, 247

## S

Safe deposit boxes..... 125  
Satellite communications center (military)..... 272  
Satellite receiver..... 245  
Scales  
    livestock..... 269  
    truck..... 269  
Schools, elementary..... 44-47  
Schools, secondary..... 50-55  
Screen walls..... 18  
Seating..... 240  
Secondary schools..... 50-55  
Security systems..... 237  
Self service restaurants..... 175-178  
Septic tanks..... 269  
Service club (military)..... 272  
Service garages..... 208-213  
Service station signs..... 206  
Service stations..... 198-207  
    additional costs..... 204-207  
Sheds..... 254-255  
Shop buildings..... 253  
Shopping centers..... 88  
Showers..... 18  
Sidewall doors..... 232  
Signs, lighted..... 246  
Single family residences..... 10-15  
    4 corners..... 12  
    6 corners..... 13  
    8 corners..... 14  
    10 corners..... 15  
Sinks..... 18  
Site improvement..... 206  
Skirting..... 18  
Skylights..... 234, 240, 241  
Sliding windows..... 234  
Small food stores..... 107-110  
Small sheds..... 255  
Snowload capability..... 18  
Sound systems..... 237  
Sprinklers..... 261  
    fire..... 239  
    roof..... 266  
Stairways..... 28  
Stanchion barns..... 258  
Stanchions, steel..... 261  
Station hospital (military)..... 272  
Steel buildings..... 228-234  
Steel stanchions..... 261  
Steps and rails..... 18  
Storage buildings..... 18, 204  
Storage facility (military)..... 272  
Storage tanks, gasoline..... 205  
Stores  
    suburban..... 88-102  
    urban..... 75-87  
Stripping..... 247

Suburban stores..... 88-102  
Suite entrances  
    exterior..... 136-138, 144-146,  
    ..... 152-154, 160-162  
    interior..... 139-141, 147-149,  
    ..... 155-157, 163-165  
Sump pumps..... 261  
Supermarkets..... 103-106

## T

Table of Contents..... 3  
Tanks, pressure..... 269  
Temporary classrooms..... 55  
Temporary lodging facility (military)..... 272  
Theaters..... 185-191  
Tie downs..... 18  
Toilets..... 18  
Trailer parks..... 195-197  
Trash compactor..... 18  
Truck scales..... 269  
Turbines..... 204

## U

Unaccompanied officers quarters (military)..... 272  
Urban stores..... 75-87

## V

Vault doors..... 125  
Vehicle hoist..... 206  
Vehicle maint. shop (military)..... 272  
Ventilators..... 234, 241  
Vents..... 234, 241

## W

Walk-in boxes..... 242  
Walk-through barns..... 259  
Walk-thru doors..... 232  
Wall finishes..... 245  
Wall furnaces..... 28  
Wall heaters..... 28  
Wall heights..... 5  
Walls, bulkhead..... 245  
Warehouses..... 224  
Wash area..... 261  
Water systems..... 269  
Water tanks..... 261  
Wet bar..... 18  
Whirlpool..... 18  
Window frames..... 245  
Windows  
    aluminum industrial..... 234  
    aluminum sliding..... 234  
    steel sliding..... 234  
Wood decks, uncovered..... 27  
Wood fence..... 248  
Wood posts..... 42

## X-Y-Z

Yard improvements..... 247-248  
Yard lights..... 205  
Youth center (military dependents)..... 272