GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

GENERAL INFORMATION

Calculator Costs are averages of final costs including architects' fees and contractors' overhead and profit, sales taxes, permit fees, and insurance during construction. Interest on interim construction financing is also included, but not financing costs, real estate taxes, or broker's commissions (see Section 1 for complete list). They do not represent any building illustrated, except as the building is included in the averages. Refinements to the average costs for type of heating, sprinklers, basement elevator stops, area/perimeter ratio, and story height are given at the end of the section, and adjustments for elevators and number of stories are on the cost pages. Current and Local Cost Multipliers are given in Section 99. Industrial buildings have a wide variation in cost from the open storage shell to the finished engineering and research facility, and the averages represent typical ranges only. Normal office and showroom space necessary for the building operation is included but not administrative or showroom space for other functions of the entire business, even though they may be attached to the structure. In buildings such as low cost warehouses, where the walls may cost as much as the floor costs, it may be advisable to use Section 44 for more detailed results. Sheds, including low-cost, utilitarian buildings which are usually lighter than typical industrial or warehouse buildings, should be priced from Section 17.

CONSTRUCTION

Buildings are divided into five construction classes: A, B, C, D and S, as described in Section 1.

In each class there will be variations and subclasses, but for purposes of pricing, the major elements of the building should be considered in entering the tables. Thus, if a building which is otherwise a Class B has a steel truss roof, the costs for the Class B building will still be representative. Interpolations may be made if the appraiser feels the building overlaps two classes, or the segregated costs in Section 44 may be used for adjustments.

OCCUPANCY

Industrial buildings are designed for manufacturing processes. An average amount of office space commensurate with the quality of the building is included. Typically, this is between 4% – 12% of the total area, either single story or stacked. Single-story offices may have a softwood flooring storage mezzanine overhead as part of the office area costs. **Light industrials** at the better qualities, typical of industrial parks, may have 15% – 25% offices and merge into the engineering buildings. **Heavy industrials** are characterized by their heavy frames, walls and floors typical of specialized manufacturing processes and power or utility service plants. The industrial building costs will include power leads to the building and industrial sewer and drainage lines, but do not include the power panel, power wiring or industrial piping to the fixtures and equipment used in the manufacturing processes. Basic electric service is commensurate with building size, i.e., 200A @ 10,000; 400A @ 40,000; 600A @ 60,000; 800A @ 100,000 to 1,000A @ 200,000 square feet would be considered typical for light industrial-warehouse structures. **Engineering and research and development** industrial buildings, which have a larger amount of divided and finished space, between 20% – 80%, are listed separately from manufacturing buildings even though they may contain some manufacturing or assembly. The so-called best hi-tech, research and development and service center structures will approach good office buildings in cost, with many partitions, high cost mechanical and fine detail.

Laboratories include commercial and research facilities exclusive of lab equipment.

Lofts are industrial buildings usually designed for multiple occupancy by relatively small-space users. Because of display areas and extra partitioning and plumbing in the higher qualities, they are a transition between industrial and office construction. They can also be a single tenancy structure with mixed functions, such as a publishing operation with distinct office, production, storage and distribution facilities all under one roof. **Industrial flex mall buildings** are the modern multi-tenant loft structure, typically of low-rise construction. The lower qualities are purely light industrial with the low cost category having minimal subdivisions and finish per space user. The better qualities have fully finished customer service areas with storefront entries and lobby/display areas.

Computer centers are electronic data processing plants, including ancillary offices.

Passenger terminals include the minimum small bus-stop-type waiting facility up to major airports with separate baggage, ticket lobby, concession, lounge and concourse areas. Costs do not include any ticket, baggage, boarding or concession equipment.

Broadcasting facilities are averages of radio and TV stations and include all wiring and conduit necessary for operation, but not broadcasting equipment.

Armories are buildings designed for military training.

Post Office costs are derived from costs of buildings built under lease agreements with the Post Office Department. **Branch** offices are small facilities, typically under 10,000 square feet. **Processing facilities** are the large sorting and shipping distribution centers.

Warehouses are designed primarily for storage. An amount of office space commensurate with the quality of the building is included in the costs. Typically, this is between 3% – 12% of the total area. **Distribution warehouses** will have larger areas, between 15% – 30% for office/sales and/or other subdivisions designed to accommodate breakdown and transshipment of small lots, as well as increased plumbing, lighting, and compartmentation to accommodate a larger personnel load. **Mega warehouses** are the large storage-distribution facilities, typically over 200,000 sq. ft., where interior build-out is only 1% – 5%.

Cold storage facilities are designed to keep stored commodities at various temperature levels. Some production or process areas are included in the better qualities.

Creameries are designed for milk processing, butter making and other related dairy product production. Costs include necessary plumbing and electric facilities and built-in refrigerator rooms, but not fixtures and equipment. Retail dairy sales buildings are found in Section 13.

Transit warehouses or truck terminals are designed for temporary closed storage, freight segregation and loading. The costs include dock-height floors. They will generally have additional facilities, 10% – 30%, to cater to transient personnel.

Mini-warehouses are warehouses subdivided into a mixture of cubicles of generally small size, designed primarily to be rented for small self storage or noncommercial storage and may include some office-living space.

Shipping docks are roofed structures designed for temporary open storage and segregation and loading of freight.

Loading docks are designed for freight loading and the basic costs do not include roof structures, which are listed separately.

Hangars are buildings designed for aircraft storage and repair maintenance, and normally will have offices and storage space commensurate with the quality and type of services they perform. **Storage hangars** will have limited facilities for light line maintenance and repair servicing only. **Maintenance and repair hangars** are generally heavier structures and have more plumbing, electrical, and interior costs to accommodate larger personnel loads for complete main base maintenance and repair functions. **T-Hangars** are multiple hangars for small planes and include partitioned areas for individual planes.

Complete auto dealerships include showroom-office and parts-service facilities. Because of the wide range in mix of facilities, (15% – 55% showroom) and qualities, it is best to price each area individually, using the appropriate showroom and service garage costs.

Showrooms are vehicular salesrooms. Where a salesroom and service garage or warehouse constitute one building, the cost for each portion should be modified by its area-perimeter multiplier, considering the common wall as belonging to half of each of the portions.

Automotive service centers are designed for repair parts sales and service and will have showroom-sales area, office, storage and repair space commensurate with the quality.

Mini-lube buildings are very small garages designed for quick maintenance lube and oil changes and may have drive-thru bays.

Service garages and sheds are buildings designed primarily for vehicular repair and maintenance. **Municipal service garages** or large fleet complexes include many subdivisions for offices, stores and shops. Those of lightweight construction with minimal service and/or lack of office facilities should be priced from Section 17, equipment sheds.

Storage garages are buildings designed for live and dead storage of automobiles. For municipal apparatus storage garages, use the volunteer fire station garage costs found in Section 15.

Parking structures or parkades are structures with no exterior walls, or with partial walls, designed for above grade live storage of automobiles. The costs are based on the number of stories where there is always one more parking level (rooftop) than stories.

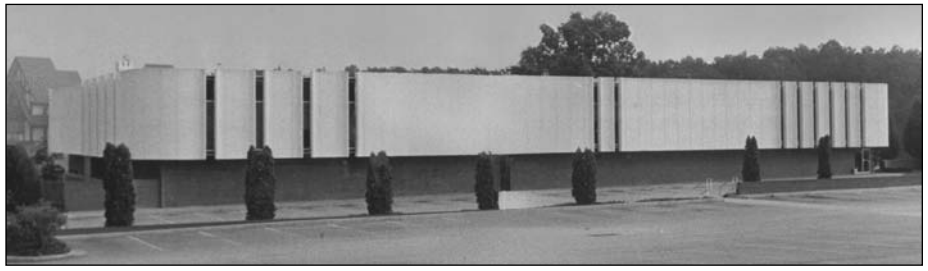
Underground parking garages are independent structures built below grade with a load-bearing roof. Basement parking is situated beneath an above grade structure and receives the same multistory refinement as the balance of the building.

INDUSTRIAL BUILDINGS

1. EXCELLENT CLASS B – LIGHT MANUFACTURING

2. GOOD CLASS A – MANUFACTURING

3. GOOD CLASS B – MANUFACTURING



4. EXCELLENT CLASS A – ENGINEERING

7. EXCELLENT CLASS B – MANUFACTURING

5. EXCELLENT CLASS B – ENGINEERING

8. GOOD CLASS C – MANUFACTURING (MILL TYPE)

6. EXCELLENT CLASS S – ENGINEERING

9. GOOD CLASS S – MANUFACTURING

10. GOOD CLASS S – MANUFACTURING

11. GOOD CLASS C – MANUFACTURING

12. GOOD CLASS C – ENGINEERING

13. AVERAGE CLASS C – ENGINEERING

HOW TO USE ILLUSTRATIONS

These illustrations attempt to show the quality and construction class of the various buildings as the appraiser would be able to determine them from an observation of the exterior.

Most buildings will require more than a casual exterior view to determine the construction class. Class A or B will have the columns and other framing covered and the class must be established from plans, from a search for an exposed portion, or a study of column sizes combined with experience. A Class C may follow the construction of a Class A or B very closely, with deviations only in floor and roof construction and fire resistance, which may not show from the exterior.

Qualities may vary in buildings which are structurally similar, by reason of the interior finish. The costs listed are actually midpoints of cost ranges. Two identical buildings built on adjoining properties by the same contractor will not have exactly the same cost except coincidentally. Only a thorough inspection by the appraiser or estimator of all items affecting quality, and the use of his experience and judgment, will give him correct answers.

SUMMARY OF ILLUSTRATIONS

GENERAL: Industrial buildings, warehouses, and lofts form a family of structures which often use similar structural shells. A general purpose shell may be built with minimum lighting, plumbing, and office space, to be used as a warehouse. With better lighting, plumbing to accommodate a higher personnel density, enlarged office space, and ancillary items, it may become a manufacturing plant. Loft buildings are a special case of light industrial buildings designed for multiple tenancy and are usually divided into smaller units of space which require more plumbing, partitioning and finish work.

1 – 3. The quality of these Class A and B industrial buildings shows in the quantity and type of fenestration, workmanship, and individual design. No. 3 may be in the lower part of the Good quality cost range, considering exterior appearance only.

4 – 7. These Excellent modern industrial buildings have large areas devoted to offices and engineering uses which often require high intensity lighting, plumbing for a high personnel density, and good partitioning and finish work. The costs and exterior appearance of these buildings will tend toward those of an office building.

8. Class C mill type structures are often hard to differentiate from Class B without interior inspection. In this case, the large brick encased columns give some indication of the class.

9 – 11. These Good quality Class C and S industrial buildings have a good percentage of office space, heavy roof structures to support craneways, and good wall structures. From the exterior, No. 9 appears to be in the lower half of the cost range.

12 & 13. These are typical R & D buildings with good fenestration and office space which fit today's better industrial parks.

SUMMARY: Quality designations are within each occupancy and class of construction. Thus a Good Class B warehouse may look much like an Average Class B industrial building, and Low Cost Class C Industrial may look like an Average Class C warehouse from the exterior.

INDUSTRIAL BUILDINGS

14. AVERAGE CLASS C – MANUFACTURING

15. AVERAGE CLASS C – MANUFACTURING

16. AVERAGE CLASS C & S – MANUFACTURING

17. AVERAGE CLASS C – MANUFACTURING

18. LOW COST CLASS C – MANUFACTURING

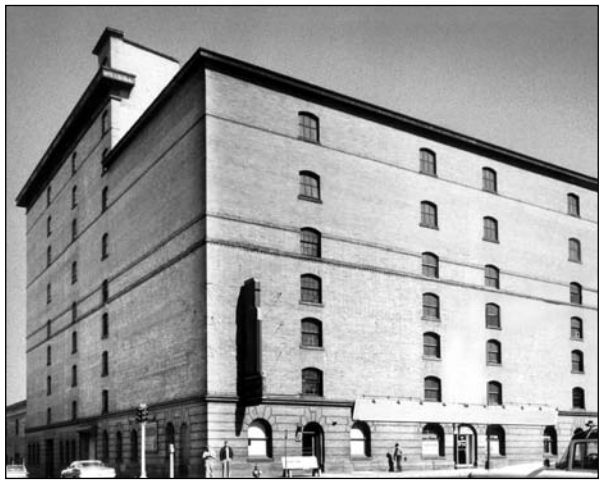
19. LOW COST CLASS S – MANUFACTURING

20. LOW COST CLASS C – MANUFACTURING

21. LOW COST CLASS S – MANUFACTURING

22. GOOD CLASS B – STORAGE

23. AVERAGE CLASS B – DISTRIBUTION



24. GOOD CLASS B – STORAGE

25. AVERAGE CLASS S – DISTRIBUTION

26. LOW COST CLASS C – DISTRIBUTION

27. LOW COST CLASS S – STORAGE AND SHOWROOM

SUMMARY OF ILLUSTRATIONS

INDUSTRIAL BUILDINGS

14 – 17. These Average quality buildings are typical of small industrials with good fenestration, office space, shop facilities and some ornamentation. Number 14 may be in the upper part of the cost range, considering exterior appearance only.

18 – 21. The Low Cost structure has small office are, little trim or finish, exposed frame and minimum fenestration.

WAREHOUSES

22 & 24. These Good quality storage warehouses have storage vaults and interior fire walls, as well as some interior finish. They are designed for heavy floor loads.

23. This Average Class B building is a parts warehouse with large open interior areas and is a generally lighter structure than Number 22 and 24.

25. This Average Class S building has adequate interior fenestration to accommodate the added personnel associated with a distribution facility.

26. The Low Cost warehouse is a light structure with large open interior areas and little finish.

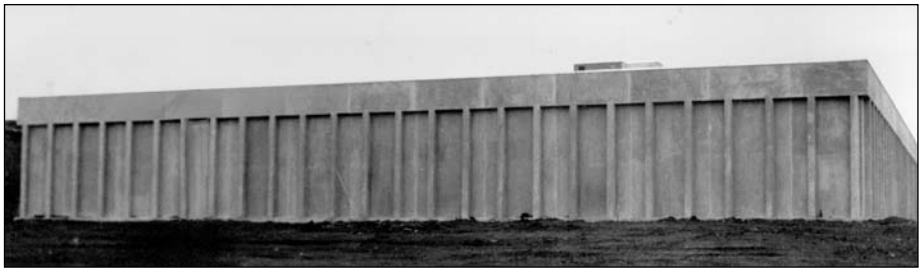
27. This Low Cost Class S farm implement dealer building may be a combination storage warehouse or service garage and showroom.

WAREHOUSES

28. GOOD CLASS C – DISTRIBUTION

29. GOOD – AVERAGE CLASS C – STORAGE

30. AVERAGE CLASS S – STORAGE



31. AVERAGE CLASS C – STORAGE

32. LOW – AVERAGE CLASS S – STORAGE

33. LOW COST CLASS C – STORAGE

34. LOW COST CLASS C – STORAGE

35. LOW COST CLASS S – STORAGE

36. AVERAGE – GOOD CLASS C TRANSIT WAREHOUSE

37. AVERAGE CLASS S TRANSIT WAREHOUSE

38. AVERAGE CLASS S MINI-WAREHOUSE

39. AVERAGE CLASS C MINI-WAREHOUSE

40. SHIPPING DOCKS

SUMMARY OF ILLUSTRATIONS

WAREHOUSES

28. This Good Class C has a finished interior suitable for food or drug storage and distribution.

29. This warehouse appears to fit between Good and Average from an external view. The amount of office space and interior finish would determine the quality.

30 & 31. Number 30 might be near the top of the Average cost range because of heavy construction while Number 31, which is similar to an Average industrial manufacturing building, is typical of industrial park development.

32. A small storage warehouse with good office area and finish, which might put it in the Average cost range after interior inspection.

33 & 34. The Low Cost Class C warehouse building is typical of industrial park development. It may be of brick, block, or concrete depending on which is most economical in the area, and is often constructed on speculation. It has a small office area and minimum fenestration, and as constructed, may be leased as a warehouse or industrial building depending on the needs of the prospective tenant or buyer. As an industrial, it would be at the low end of the Low quality range.

35. This light warehouse shell is of minimum code construction and at the lowest end of the cost range, although interior finishes could place it in the middle of the Low Cost range. Without interior finish, this shell will fit more closely in the Utility building costs found in Section 17.

36 & 37. Transit warehouses are designed for fast segregation and reshipment of freight. Number 36 appears to fit in the upper half of the cost range. The amount of interior finish would determine the quality.

38 & 39. These are typical Average mini-warehouse buildings with minimal amenities. Lack of office and other security facilities will place them at the low end of the cost range.

40. Shipping docks are open structures designed for segregation and of freight.

LOFT AND INDUSTRIAL FLEX (MALL) BUILDINGS

41. GOOD CLASS A LOFT

42. GOOD CLASS B LOFT

43. GOOD CLASS C LOFT

44. GOOD CLASS C LOFT

45. AVERAGE CLASS C LOFT

46. GOOD CLASS C FLEX

47. GOOD CLASS C FLEX

48. AVERAGE CLASS C FLEX

SUMMARY OF ILLUSTRATIONS

LOFTS

41. This Good quality loft building has good fenestration and some trim. From the exterior there is little to distinguish it from a low cost office building.

42. This older Good quality loft has ornamental arches and trim. There are no distinguishing exterior characteristics to tell this building from an industrial occupancy.

43 & 44. These Good Class C could be Class A or B with same exterior.

45. From an exterior inspection only, this Average Class C loft could well be occupied by many types of light manufacturing or a single tenancy with numerous office, production, storage and distribution areas all under one roof.

46. The Good modern loft or “flex” industrial mall building, typical of industrial park developments, is subdivided for multiple tenancy with adequate display, office, storage and work area for relatively small space users.

47 & 48. The Average flex is usually a plain building with little trim and few interior subdivisions and finish. Number 47 is in the upper end of the cost range with adequate office reception area. Number 48 is probably in the lower half of the Average quality range. When lacking store front entry and finish, it would fall into the Low category.

SUMMARY: The better lofts and flex buildings are transition buildings between the purely industrial type building and the office building and may look like either, while the lowest qualities are light industrial mall structures for small space users.

49. GOOD CLASS B PARKING STRUCTURE

50. GOOD CLASS B PARKING STRUCTURE

51. LOW COST CLASS B PARKING STRUCTURE

52. AVERAGE CLASS C STORAGE (MILL TYPE)

53. AVERAGE CLASS B STORAGE

54. GOOD CLASS D SERVICE

56. AVERAGE CLASS S SERVICE

55. AVERAGE CLASS C SERVICE

57. AVERAGE CLASS C MINI-LUBE

AUTOMOTIVE BUILDINGS

58. GOOD CLASS C SHOWROOM

59. AVERAGE – GOOD CLASS C SHOWROOM

60. AVERAGE CLASS D SHOWROOM

63. LOW COST CLASS C SHOWROOM

62. LOW COST CLASS S SHOWROOM

61. AVERAGE CLASS S SHOWROOM

64. GOOD CLASS C SERVICE CENTER

65. AVERAGE – GOOD CLASS C SERVICE CENTER

SUMMARY OF ILLUSTRATIONS

49 – 51. These illustrations are typical of the range of qualities in parking garages, although they do not represent the highest or lowest cost garages built.

52. This appears to be an above average mill-type garage, although still in the Average cost range.

53. A typical major storage garage of older construction.

54 & 55. These are typical neighborhood garages.

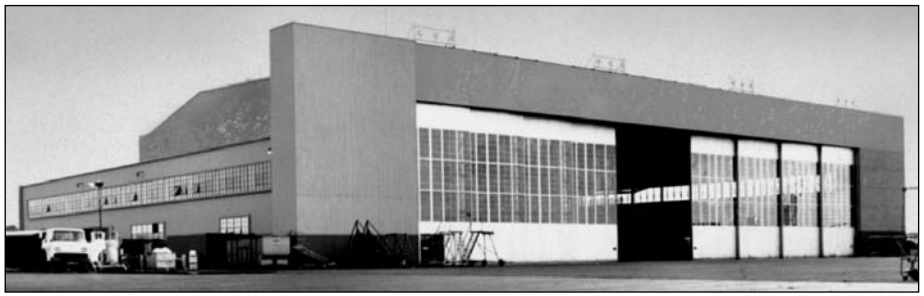
56. This Average service garage is part of a car dealership facility, with a low cost showroom portion, where each occupancy cost is based on its individual characteristics.

57. This Average mini-lube garage with its good drive-thru bays and customer waiting area will be at the high side of the cost range.

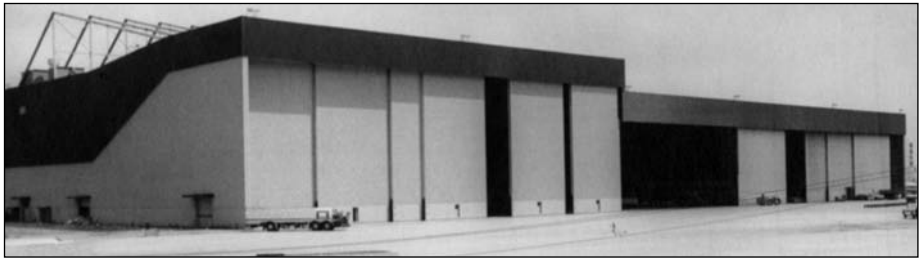
58 – 63. Typical dealership showrooms in a progression of cost ranges from the good facility, with large store front and good materials throughout, to the lower cost structure, with minimum interior and exterior finishes. The average showroom is equivalent to a good retail store from an exterior appearance. A complete dealership can be priced as a single facility or broken down into showroom and service garage for pricing purposes.

64. This Good Class C automotive service center is a combination of a Good retail store and a Good quality garage.

65. With good interior retail store finish this center would tend toward the Good range.



66. EXCELLENT CLASS S



67. EXCELLENT CLASS C

68. GOOD CLASS S

73. CHEAP CLASS S

74. AVERAGE CLASS C T-HANGAR

69. AVERAGE CLASS S

70. AVERAGE CLASS S

71. AVERAGE CLASS S

72. CHEAP CLASS D (POLE)

SUMMARY OF ILLUSTRATIONS

66 & 67. The Excellent hangar is designed for maintenance and servicing of modern long distance jet planes and will have offices and storage to fulfill its purpose. Number 66 has very good fenestration but is probably in the lower half of the cost range. Modern hangars to service the very large jet planes are generally in the middle or upper half of the Excellent quality range.

68. The Good hangar is usually lighter structurally than the Excellent quality, is primarily designed for propeller planes and small jets and will have less service capabilities. The picture is of a manufacturing hangar, which, although plain in exterior appearance, may be in the upper half of the Good quality range because of interior facilities and finish.

69 – 71. The Average hangar is typically a good small plane hangar with offices and maintenance facilities commensurate with the type of services they perform. Number 70 could be either a storage or a repair and maintenance hangar from an exterior view. Number 71 is a typical storage hangar with light repair and service functions only.

72 & 73. These Cheap storage hangars are self-explanatory with their complete lack of exterior and interior finish. Number 72, with the addition of doors and support facilities, would probably be in the Low Cost range.

74. This is an illustration of a modern T-hangar for small sport planes. Basically it is a Low Cost Class C with subdividing walls and added doors.

SUMMARY: Maintenance hangars are complete repair facilities. The higher qualities perform main base functions for commercial airlines with increased interior finishes to accommodate large maintenance crews. While, the storage hangar is designed for light service and repair with the better qualities performing only typical line servicing of large commercial aircraft.

MISCELLANEOUS ILLUSTRATIONS

75. GOOD CLASS C ARMORY

76. AVERAGE – GOOD CLASS C ARMORY

77. AVERAGE CLASS C ARMORY

78. LOW COST CLASS D POST OFFICE

79. AVERAGE CLASS C POST OFFICE

80. GOOD CLASS C POST OFFICE

SUMMARY OF ILLUSTRATIONS

ARMORIES

75. The Good quality armory shows some of its quality in its structural aspects, but the quality is determined primarily by the amount of interior finish.

76 & 77. The Average quality armory is usually a plain building architecturally with a minimum expenditure for exterior trim and few interior extras. Number 76 lies in between Number 75 and 77 both in quality of construction and finish with adequate office, classroom, locker, storage and kitchen support facilities.

POST OFFICES

78. The Low cost post office comprises the bulk of the small neighborhood branch post offices. They have limited facilities and are built to standard specifications provided by the Post Office Department.

79. The Average post office typically comprises the larger, individually designed sub-station or larger postal facility. They usually present a standard attractive appearance conforming with local architecture and have adequate facilities.

80. The Good post office building is of good workmanship, materials and architectural design with some decorative features and good fenestration and interiors.

LOFTS (338)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
A-B	Excellent	Good curtain walls, good brick and glass, with ornamentation	Plaster, acoustic ceilings, finished floor, much office space	*Fluorescent lighting, many outlets, good plumbing	Warm and cool air (zoned)	$1,417.19	$9.40	$131.66
	Good	Face brick, metal panels, good glass, ornamentation	Drywall or plaster, finished floors, good display rooms and offices	*Good lighting, many outlets, adequate plumbing	Package A.C.	1,082.97	7.19	100.61
	Average	Brick, block, concrete panels, low-cost metal and glass	Painted walls and ceilings, few partitions, office and display rooms	*Fluorescent lighting, many outlets, adequate plumbing	Hot water	841.10	5.58	78.14
	Low cost	Low-cost brick, structural tile, block, concrete panels	Painted walls, large open areas, office and display rooms	*Incandescent or cheap fluorescent, minimum plumbing	Steam	657.47	4.36	61.08
C	Good	Masonry or concrete, some ornamentation, steel frame	Plaster, finished floors, good display rooms and detail	Fluorescent lighting, adequate restrooms and plumbing	Package A.C.	905.04	6.01	84.08
	Average	Brick, block, concrete, load-bearing walls or frame	Gypsum board, finished floors, display areas	Adequate lighting and plumbing	Package A.C.	655.20	4.35	60.87
	Low cost	Low-cost brick, concrete block,tilt-up	Minimum finish and detail, small office or display areas	Minimum lighting and plumbing	Forced air	442.40	2.94	41.10
C_{MILL}	Average	Mill-type frame, heavy brick walls, wood trusses	Painted walls and ceilings, few partitions, office and display areas	*Adequate lighting and plumbing	Steam	822.15	5.46	76.38
D	Average	Wood studs, stucco, siding, adequate windows	Drywall or plaster, finished floors, office and display areas	Incandescent or cheap fluorescent, adequate plumbing	Package A.C.	603.00	4.00	56.02
	Low cost	Wood studs and stucco or wood siding, very plain	Minimum finish and detail, small office or display areas	Minimum lighting and plumbing	Forced air	403.76	2.68	37.51
S	Average	Steel frame, transite or steel siding	Drywall or plaster, slab floors, office and display areas	Adequate lighting and plumbing	Package A.C.	607.41	4.03	56.43

INDUSTRIAL FLEX (MALL) BUILDINGS (453)

C	Good	Masonry or concrete, wood or steel frame, good entries and trim	Finished floors, ceilings and display rooms, some extras	Fluorescent lighting, adequate restroom and plumbing	Package A.C.	$655.20	$4.35	$60.87
	Average	Brick, concrete block, tilt-up, small storefronts	Reception finish and detail, small office or display areas	Adequate lighting and plumbing per space	Forced air	463.82	3.08	43.09
	Low cost	Low-cost block, tilt-up, light roof, shop door entries	Unfinished, slab, open shop areas only	Minimum lighting and plumbing per space	Space heaters	328.09	2.18	30.48
D	Average	Metal or wood studs, stucco, siding, small storefronts	Reception finish and detail, small office or display areas	Adequate lighting and plumbing per space	Forced air	423.03	2.81	39.30
	Low cost	Low-cost stucco or siding, shop door entries	Unfinished, slab, open shop areas only	Minimum lighting and plumbing per space	Space heaters	295.69	1.96	27.47
D_{POLE}	Average	Pole frame, good metal siding, lined, small storefronts	Reception finish and detail, small office or display areas	Adequate lighting and plumbing per space	Forced air	386.10	2.56	35.87
	Low cost	Pole frame, metal siding, shop door entries	Unfinished, slab, open shop areas only	Minimum lighting and plumbing per space	Space heaters	266.73	1.77	24.78
S	Good	Steel frame, sandwich panels, good entries and trim	Finished floors, ceilings and display rooms, some extras	Fluorescent lighting, adequate restroom and plumbing	Package A.C.	611.29	4.06	56.79
	Average	Pre-engineered, steel siding, small storefronts	Reception finish and detail, small office or display areas	Adequate lighting and plumbing per space	Forced air	422.92	2.81	39.29
	Low cost	Light steel frame, siding, shop door entries	Unfinished, slab, open shop areas only	Minimum lighting and plumbing per space	Space heaters	291.92	1.94	27.12

NOTE: Flex building shell costs are comparable to the neighborhood retail strip center shell costs found in Section 13.

BASEMENTS – See Page 18.

MEZZANINES AND DOCK-HEIGHT FLOORS – See Page 27.

MULTISTORY BUILDINGS – Add .5% (1/2%) for each story over three, above ground, to all base costs of the building, including basements, but excluding mezzanines.

SPRINKLERS – Systems are not included. Costs should be added from Page 36.

***ELEVATORS –** Buildings with base costs which include elevators are marked with an asterisk (*). If the subject building has no elevators, deduct the following from the base costs for the buildings on this page which are so marked. For buildings not marked or for basement stops, add costs from Page 36.

Classes A, B & C_{MILL}	Sq. M.	Sq. Ft.		Sq. M.	Sq. Ft.
Excellent	$40.37	$3.75	Average	$29.06	$2.70
Good	34.44	3.20	Low	24.76	2.30

CALCULATOR METHOD

INDUSTRIALS, LIGHT MANUFACTURING (494)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
A	Average	Brick on block or tile, concrete or metal panels, storefront entry	Painted walls and ceilings, finished floors and ceilings in offices	*Adequate lighting and plumbing	Hot water	$736.37	$4.89	$68.41
	Low cost	Low-cost brick or block, little fenestration, precast floors	Painted walls, few offices, very plain and open	*Minimum lighting and plumbing	Space heaters	510.43	3.39	47.42
B	Average	Brick, formed concrete, or precast walls, little trim, storefront entry	Painted walls and ceilings, finished floors and ceilings in offices	*Adequate lighting and plumbing	Hot water	688.14	4.57	63.93
	Low cost	Low-cost brick or block, little fenestration, precast floors	Painted walls, few offices, very plain and open	*Minimum lighting and plumbing	Space heaters	473.62	3.14	44.00
C	Good	Bearing walls or frame, brick, concrete panels, good glass storefront	Some finished walls, finished floors and ceilings in offices	Good fluorescent lighting, adequate plumbing	Space heaters	642.83	4.27	59.72
	Average	Light frame or bearing walls, brick, block or tilt-up, some trim	Painted walls and exposed frame, small finished offices	Exposed conduit, fluorescent lighting, adequate plumbing	Space heaters	463.17	3.07	43.03
	Low cost	Very plain, brick, block, or tilt-up, few openings	Small office area, unfinished floors and ceilings	Minimum lighting and plumbing	Space heaters	335.62	2.23	31.18
D	Good	Good frame with stucco or siding, some ornamentation	Some good offices and interior finish	Good lighting, exposed conduit, adequate plumbing	Space heaters	586.75	3.89	54.51
	Average	Wood studs, stucco, wood rafters and sheathing, some trim	Drywall, finished office area, exposed rafters or trusses	Adequate lighting and plumbing	Space heaters	417.43	2.77	38.78
	Low cost	Wood studs or frame, cheap stucco or siding	Unfinished, low-cost slab, small office, minimum code	Minimum lighting and plumbing	Space heaters	298.92	1.98	27.77
D_{POLE}	Good	Pole frame, metal siding, lined and insulated, some trim, glass entry	Some good offices and interior finish	Good lighting, exposed conduit, adequate plumbing	Space heaters	522.27	3.47	48.52
	Average	Pole frame, metal siding, fully lined and insulated	Finished office area, slab, some floor finish	Adequate lighting and plumbing	Space heaters	374.16	2.48	34.76
	Low cost	Pole frame, metal siding, insulated, few openings	Low-cost slab, few partitions, small office	Minimum code, factory lighting	Space heaters	269.96	1.79	25.08
S	Good	Steel frame, sandwich panels, good glass storefront entry and trim	Some good offices and interior finish	Good lighting, exposed conduit, adequate plumbing	Space heaters	589.44	3.91	54.76
	Average	Steel frame, steel or aluminum siding, some trim	Finished office area, slab, some floor finish	Adequate lighting and plumbing	Space heaters	415.92	2.76	38.64
	Low cost	Light steel frame, steel or aluminum siding, few openings	Low-cost slab, unfinished interior, small office	Minimum code, factory lighting	Space heaters	295.58	1.96	27.46

DOCK-HEIGHT FLOORS – See Page 27.

BASEMENTS – See Page 18.

MEZZANINES – See Page 27.

MULTISTORY BUILDINGS – Add .5% (1/2%) for each story over three, above ground, to all base costs of the building, including basements, but excluding mezzanines.

SPRINKLERS – Systems are not included. Costs should be added from Page 36.

***ELEVATORS –** Buildings with base costs which include elevators are marked with an asterisk (*). If the subject building has no elevators, deduct the following from the base costs for the buildings on this page which are so marked. For buildings not marked or for basement stops, add costs from Page 36.

Classes A and B	Sq. M.	Sq. Ft.		Sq. M.	Sq. Ft.
Average	$20.45	$1.90	Low cost	$15.61	$1.45

The data included on this page becomes obsolete after January 2012.

INDUSTRIALS, HEAVY (PROCESS) MANUFACTURING (495)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
A	Excellent	Heavy structural frame and masonry or concrete walls	Extra heavy floors, partitions and craneways, specialized plant	*Excellent lighting and plumbing, spark-proof fixtures	Hot and chilled water (zoned)	$2,273.57	$15.09	$211.22
	Good	Good curtain walls, good brick and glass, with ornamentation	Finished walls and ceilings, some finished floors, heavy craneways	*Good fluorescent lighting, good plumbing, some extras	Hot and chilled water (zoned)	1,828.48	12.13	169.87
	Average	Face brick, metal panels, industrial glass, ornamentation	Plaster walls, some trim, heavy-duty floors, good offices, craneways	*Good fluorescent lighting, adequate plumbing, locker rooms	Warm and cool air (zoned)	1,400.07	9.29	130.07
	Low cost	Brick on block or tile, concrete or metal panels, little trim	Painted walls and ceilings, heavy-duty floors, open fabrication	*Adequate lighting and plumbing	Hot water	1,087.06	7.21	100.99
B	Excellent	Heavy concrete frame and masonry or concrete walls	Extra heavy floors, partitions and craneways, specialized plant	*Excellent lighting and plumbing, spark-proof fixtures	Hot and chilled water (zoned)	2,172.82	14.42	201.86
	Good	Good curtain walls, good brick and glass, with ornamentation	Finished walls and ceilings, some finished floors, heavy craneways	*Good fluorescent lighting, good plumbing, some extras	Hot and chilled water (zoned)	1,746.78	11.59	162.28
	Average	Face brick, concrete curtain walls, some ornamentation	Plaster walls, some trim, heavy-duty floors, good offices, craneways	*Good fluorescent lighting, adequate plumbing, locker rooms	Warm and cool air (zoned)	1,333.87	8.85	123.92
	Low cost	Brick, formed concrete, or precast walls, little trim	Painted walls and ceilings, heavy-duty floors, open fabrication	*Adequate lighting and plumbing	Hot water	1,033.56	6.86	96.02
C	Good	Heavy steel or concrete frame, good masonry walls	Heavy floors, grating, good partitions and craneways	Good fluorescent lighting, good plumbing, some extras	Warm and cool air (zoned)	1,393.18	9.25	129.43
	Average	Structural frame, brick, concrete panels	Heavy slab floors, offices, stores, some heavy assembly, craneways	Good fluorescent lighting, adequate plumbing, locker rooms	Hot water	1,041.09	6.91	96.72
	Low cost	Steel or glulam frame, brick, block, or tilt-up, some trim	Painted walls and exposed frame, small finished offices, good slab	Exposed conduit, fluorescent lighting, adequate plumbing	Space heaters	750.04	4.98	69.68
CMILL	Good	Mill-type construction, brick walls, wood or steel trusses	Finished walls and ceilings, some floor finish, heavy mill-type floors	*Fluorescent lighting, modernized plumbing	Steam	888.89	5.90	82.58
	Average	Mill-type construction, brick walls, wood trusses	Painted walls, few small offices, mill-type floors	*Average lighting and plumbing	Steam	677.59	4.50	62.95
D	Average	Heavy wood frame, wood or stucco siding	Heavy slab or mill-type floors, finished office area, some heavy assembly	Good lighting, adequate plumbing and locker rooms	Space heaters	917.74	6.09	85.26
	Low cost	Wood frame, stucco or siding	Finished office area, good slab, some floor finish, open fabrication	Adequate lighting and plumbing	Space heaters	706.01	4.69	65.59
S	Good	Structural steel, heavy steel siding, transite, sandwich panels	Heavy floors, grating, good partitions and craneways	Good fluorescent lighting and plumbing, some extras	Warm and cool air (zoned)	1,325.59	8.80	123.15
	Average	Heavy steel frame, transite or metal siding, sandwich panels	Heavy slab floors, offices, stores, some heavy assembly, craneways	Good lighting, exposed conduit, adequate plumbing, locker rooms	Space heaters	940.02	6.24	87.33
	Low cost	Steel frame, steel or aluminum siding, some trim	Finished office area, good slab, some floor finish, open fabrication	Adequate lighting and plumbing	Space heaters	718.17	4.77	66.72

CRANES – Material-handling systems are not included. See Section 58.

DOCK-HEIGHT FLOORS – See Page 27.

BASEMENTS – See Page 18.

MEZZANINES – See Page 27.

MULTISTORY BUILDINGS – Add .5% (1/2%) for each story over three, above ground, to all base costs of the building, including basements, but excluding mezzanines.

SPRINKLERS – Systems are not included. Costs should be added from Page 36.

***ELEVATORS –** Buildings with base costs which include elevators are marked with an asterisk (*). If the subject building has no elevators, deduct the following from the base costs for the buildings on this page which are so marked. For buildings not marked or for basement stops, add costs from Page 36.

Classes A and B & CMILL	Sq. M.	Sq. Ft.		Sq. M.	Sq. Ft.
Excellent	$33.91	$3.15	Average	$21.53	$2.00
Good	26.91	2.50	Low	16.15	1.50

CALCULATOR METHOD

INDUSTRIAL, ENGINEERING (RESEARCH & DEVELOPMENT) BUILDINGS (392)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
A	Excellent	Good curtain walls, good brick and glass, with ornamentation	Plaster, acoustic ceilings, finished floor, many offices	*Fluorescent lighting, many outlets, good plumbing	Hot and chilled water (zoned)	$1,679.72	$11.15	$156.05
	Good	Face brick, metal panels, good glass, ornamentation	Gypsum or plaster, some trim, carpet and resilient floors, good offices	*Good fluorescent lighting, good plumbing	Warm and cool air (zoned)	1,205.03	8.00	111.95
	Average	Brick on block or tile, concrete or metal panels, good front	Gypsum walls and ceilings, resilient floors, half office buildout	*Adequate lighting and plumbing	Package A.C.	887.17	5.89	82.42
	Low cost	Brick, precast concrete, block, little trim, small storefront entry	Low-cost finishes, acoustic tile, VCT, plain offices, 20% – 30% buildout	*Minimum lighting and plumbing, few extras	Package A.C.	675.01	4.48	62.71
B	Excellent	Good curtain walls, good brick and glass, with ornamentation	Plaster, acoustic ceilings, finished floor, much office space	*Fluorescent lighting, many outlets, good plumbing	Hot and chilled water (zoned)	1,604.37	10.65	149.05
	Good	Face brick, concrete curtain wall, some ornamentation	Gypsum or plaster, some trim, carpet and resilient floors, good offices	*Good fluorescent lighting, good plumbing	Warm and cool air (zoned)	1,144.64	7.60	106.34
	Average	Brick, formed concrete or precast walls, good front	Gypsum walls and ceilings, resilient floors, half office buildout	*Adequate lighting and plumbing	Package A.C.	838.95	5.57	77.94
	Low cost	Brick, precast concrete, block, little trim, small storefront entry	Low-cost finishes, acoustic tile, VCT, plain offices, 20% – 30% buildout	*Minimum lighting and plumbing, few extras	Package A.C.	636.91	4.23	59.17
C	Excellent	Steel or concrete frame,ornamented masonry, entrance and lobby	Plaster walls, acoustic ceilings, carpet and resilient floors, mostly offices	Office-type lighting, many outlets, good plumbing	Hot and chilled water (zoned)	1,441.08	9.56	133.88
	Good	Steel frame, bar or web joists, good masonry or curtain walls	Gypsum or plaster walls, good office areas, acoustic ceilings	Good fluorescent lighting, good plumbing	Warm and cool air (zoned)	953.58	6.33	88.59
	Average	Bearing wall or frame, brick, concrete panels, good front	Finished walls, finished floors and ceilings, half office buildout	Adequate lighting and plumbing	Package A.C.	650.36	4.32	60.42
	Low cost	Brick, block, tilt-up panels, bearing walls, wood joists, little trim	Painted walls, acoustic tile or drywall, VCT, plain offices, 20% – 30% buildout	Minimum lighting and plumbing	Package A.C.	465.65	3.09	43.26
D	Excellent	Heavy frame, good metal and glass, stone and brick veneer	Plaster or gypsum, acoustic ceilings, carpet and resilient tile, mostly offices	Office-type lighting, many outlets, good plumbing	Warm and cool air (zoned)	1,283.93	8.52	119.28
	Good	Steel frame, web joists, good metal, glass, stucco, brick veneer	Plaster or gypsum, acoustic ceilings, good office areas	Good fluorescent lighting, good plumbing	Warm and cool air (zoned)	889.97	5.91	82.68
	Average	Wood studs or light frame, stucco, wood, brick veneer, good front	Drywall, walls and ceilings, resilient tile, half office buildout	Adequate lighting and plumbing	Package A.C.	600.42	3.98	55.78
	Low cost	Wood frame, stucco or siding, little ornamentation, small front	Drywall, acoustic tile, VCT, plain offices, 20% – 30% buildout	MInimum lighting and plumbing	Package A.C.	426.79	2.83	39.65
S	Excellent	Heavy frame, best sandwich panels, ornamented entry and lobby	Plaster or gypsum, acoustic ceilings, carpet and resilient tile, mostly offices	Office-type lighting, many outlets, good plumbing	Warm and cool air (zoned)	1,309.12	8.69	121.62
	Good	Steel frame, good metal and glass, good storefront and trim	Plaster or gypsum, acoustic ceilings, good office areas	Good fluorescent lighting, good plumbing	Warm and cool air (zoned)	901.05	5.98	83.71
	Average	Steel frame and light panels with steel trusses or joists, good front	Enameled walls and exposed trusses, finished floors, half offices	Exposed conduit, fluorescent lighting, adequate plumbing	Package A.C.	604.08	4.01	56.12
	Low cost	Pre-engineered, finished interior, insulation, small front	Drywall, acoustic tile, VCT, plain offices, 20% – 30% buildout	Minimum lighting and plumbing	Package A.C.	426.79	2.83	39.65

NOTE: The best research and engineering structures approach good office buildings in cost, with many partitions, best lighting, elevators or escalators, and fine detail. If the design appears closer to office use or occupancy than to industrial, the costs in Section 15 should be used. For clean rooms, see Section 44.

MULTISTORY BUILDINGS – Add .5% (1/2%) for each story over three, above ground, to all base costs for the building, including basements, but excluding mezzanines.

SPRINKLERS – Sprinklers are not included. Costs should be added from Page 36.

***ELEVATORS –** Buildings with base costs which include elevators are marked with an asterisk (*). If the subject building has no elevators, deduct the following from the base costs for the buildings on this page and Page 17, which are so marked. For buildings not marked or for basement stops, add costs from Page 36.

Classes A and B & CLABS	Sq. M.	Sq. Ft.		Sq. M.	Sq. Ft.
Excellent	$35.52	$3.30	Average	$22.60	$2.10
Good	27.99	2.60	Low	18.30	1.70

LABORATORY BUILDINGS (496)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
A-B	Excellent	Stone, best brick, metal and glass, highly ornamental	Plaster, glazed finishes, enamel, tile, many workstations, support facilities	*Best lab plumbing and lighting, many extras	Complete H.V.A.C.	$3,577.31	$23.74	$332.34
	Good	Face brick, stone, concrete or metal panels, solar glass	Plaster or drywall, acoustic tile, carpet and vinyl, good testing and research	*Good fluorescent fixtures, good lab stations and plumbing	Complete H.V.A.C.	2,717.48	18.03	252.46
	Average	Brick, concrete or metal panels, formed concrete	Plaster or drywall, acoustic tile, VCT, carpet, good labs and support	*Adequate lighting and plumbing, some extra features	Complete H.V.A.C.	2,066.37	13.71	191.97
	Low cost	Brick, precast concrete, block, little trim	Low-cost finishes, acoustic tile, VCT, plain labs, production and offices	*Minimum lab lighting and plumbing, few extras	Complete H.V.A.C.	1,570.68	10.42	145.92
C	Excellent	Steel frame, face brick, metal panels, tile, highly ornamental	Plaster, glazed finishes, enamel, tile, carpet, vinyl, good support facilities	*Best lab stations and plumbing, good lighting and outlets	Complete H.V.A.C.	2,698.21	17.91	250.67
	Good	Steel columns, web or bar joists, ornamental block or face brick	Plaster or drywall, acoustic tile, vinyl or carpet, good research & development	Good fluorescent fixtures, lab stations and plumbing	Complete H.V.A.C.	2,090.58	13.87	194.22
	Average	Steel frame or bearing walls, brick, block, or concrete, some trim	Plaster or drywall, acoustic tile, VCT, adequate labs, support facilities	Adequate lighting, plumbing and workstations	Complete H.V.A.C.	1,641.29	10.89	152.48
	Low cost	Brick, block, tilt-up panels, bearing walls, wood joists, little trim	Painted walls, acoustic tile or drywall, VCT, plain labs and offices	Minimum lab lighting and plumbing	Complete H.V.A.C.	1,288.77	8.55	119.73
D	Excellent	Steel or wood frame, brick or stone veneer, metal and glass, ornamental	Plaster, glazed finishes, enamel, tile, carpet, vinyl, good support facilities	*Best lab stations and plumbing, good lighting and outlets	Complete H.V.A.C.	2,591.22	17.20	240.73
	Good	Steel or glulam frame and joists, brick veneer, glass, best stucco	Plaster or drywall, acoustic tile, vinyl or carpet, good research & development	Good fluorescent fixtures, lab stations and plumbing	Complete H.V.A.C.	2,003.93	13.30	186.17
	Average	Wood frame or pipe columns, good stucco or siding with some trim	Plaster or drywall, acoustic tile, VCT, adequate labs, support facilities	Adequate lighting, plumbing and workstations	Complete H.V.A.C.	1,571.11	10.43	145.96
	Low cost	Wood frame, stucco or siding, little ornamentation	Drywall, acoustic tile, vinyl comp., plain labs, production and offices	Minimum lab lighting and plumbing	Complete H.V.A.C.	1,231.94	8.18	114.45
S	Good	Pre-engineered, good sandwich panels, some brick or stone	Plaster or drywall, acoustic tile, vinyl or carpet, good research & development	Good fluorescent fixtures, lab stations and plumbing	Complete H.V.A.C.	2,011.15	13.35	186.84
	Average	Pre-engineered, sandwich panels, some trim	Plaster or drywall, acoustic tile, VCT, adequate labs, support facilities	Adequate lighting, plumbing and workstations	Complete H.V.A.C.	1,577.14	10.47	146.52
	Low cost	Pre-engineered, finished interior, insulation	Drywall, acoustic tile, vinyl comp., plain labs, production and offices	Minimum lab lighting and plumbing	Complete H.V.A.C.	1,237.00	8.21	114.92

MULTISTORY BUILDINGS – Add .5% (1/2%) for each story over three, above ground, to all base costs of the building, including basements, but excluding mezzanines.

SPRINKLERS – Systems are not included. Costs should be added from Page 36.

***ELEVATORS –** See Page 16 for elevator cost refinements.

LABORATORY EQUIPMENT – See Section 44 or Section 65.

BASEMENTS – See Page 18.

COMPLETE HEATING, VENTILATING AND AIR CONDITIONING

Because of the higher requirements for laboratory buildings, the average heating and air conditioning costs are listed separately below. The moderate climate cost is included in the base cost in the tables. For general research & development buildings, use the HVAC costs from Page 36 as appropriate. For clean rooms, see Section 44. If a cubic foot cost is used, use one-fourteenth (1/14) the difference shown to adjust the base cubic foot cost. Costs do not include fume hoods. Fume hood air and ventilation systems can add as much as 100% to the HVAC costs below.

SQUARE METER COSTS

	COMPLETE H.V.A.C.	Mild Climate	Moderate Climate	Extreme Climate
Classes A and B	Excellent	$445.63	$539.81	$653.91
	Good	343.91	414.41	499.45
	Average	264.26	318.08	382.66
	Low Cost	203.98	244.34	291.70
Classes C, D and S	Excellent	$381.05	$460.70	$556.50
	Good	293.86	353.60	425.72
	Average	225.51	270.71	325.61
	Low Cost	174.38	208.28	248.65

SQUARE FOOT COSTS

	COMPLETE H.V.A.C.	Mild Climate	Moderate Climate	Extreme Climate
Classes A and B	Excellent	$41.40	$50.15	$60.75
	Good	31.95	38.50	46.40
	Average	24.55	29.55	35.55
	Low Cost	18.95	22.70	27.10
Classes C, D and S	Excellent	$35.40	$42.80	$51.70
	Good	27.30	32.85	39.55
	Average	20.95	25.15	30.25
	Low Cost	16.20	19.35	23.10

COMPUTER (DATA) CENTERS (497)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
A-B	Excellent	Good curtain walls, good brick and metal, with ornamentation	Plaster, acoustic ceilings, raised floor, much office space	Fluorescent lighting, many outlets, good plumbing, UPS & EPS	Hot and chilled water (zoned)	$2,413.61	$16.02	$224.23
	Good	Face brick, metal panels, good concrete panels, ornamentation	Drywall or plaster, raised floors, good support rooms and offices	Good lighting, many outlets, adequate plumbing, UPS, EPS	Hot and chilled water (zoned)	1,966.48	13.05	182.69
	Average	Brick, block, concrete panels, low-cost metal panels	Painted walls and ceilings, raised floors, office and support rooms	Fluorescent lighting, adequate restrooms and plumbing, UPS	Hot and chilled water (zoned)	1,607.93	10.67	149.38
	Low cost	Low-cost brick, structural tile, block, concrete panels	Painted walls, large open areas, offices and support rooms	Fluorescent lighting, minimum plumbing, back-up power	Warm and cool air (zoned)	1,244.21	8.26	115.59
C	Good	Masonry or concrete, some ornamentation, steel frame	Plaster, raised floors, good support rooms and detail	Fluorescent lighting, adequate restrooms, plumbing, UPS & EPS	Warm and cool air (zoned)	1,503.84	9.98	139.71
	Average	Brick, block, concrete, load-bearing walls or frame	Gypsum board, raised floors, adequate office and support areas	Adequate lighting and plumbing, back-up power supply	Warm and cool air (zoned)	1,233.66	8.19	114.61
	Low cost	Low-cost brick, concrete, block, tilt-up, very plain	Minimum finish and detail, small office and support areas	Minimum lighting, plumbing and uninterrupted power supply	Package A.C.	988.24	6.56	91.81
D	Average	Light frame or studs, stucco, siding, EIFS	Drywall or plaster, raised floors, adequate office and support areas	Fluorescent lighting, adequate plumbing, back-up power	Warm and cool air (zoned)	1,168.97	7.76	108.60
	Low cost	Bearing studs and stucco or wood siding, very plain	Minimum finish and detail, small office and support areas	Minimum lighting, plumbing and uninterrupted power supply	Package A.C.	937.76	6.22	87.12
S	Average	Steel frame, transite, steel siding or sandwich panels	Drywall or plaster, raised floors, adequate office and support areas	Adequate lighting and plumbing, back-up power supply	Warm and cool air (zoned)	1,186.30	7.87	110.21

NOTE: H.V.A.C. costs must be carefully examined, as high heat producing equipment may require high-capacity systems; adjust to the high-cost range (extreme-climate) or, due to extreme loading, the laboratory complete H.V.A.C. costs may be more representative. Redundant systems can add 100% to 400% to electrical costs also; see Section 44.

BASEMENTS – INDUSTRIAL BUILDINGS

A-B	Finished laboratory	Reinforced concrete, plaster interior	R&D finish, administrative and technical facilities	Adequate lighting and plumbing for R&D facilities	*Complete H.V.A.C.	$1,218.16	$8.08	$116.94
	Office	Plaster interior	Average office finish, acoustic tile, vinyl composition	Adequate office lighting and plumbing	Warm and cool air (zoned)	877.27	5.82	84.25
	Display	Plaster interior	Display finish, acoustic tile, vinyl composition, storage, shop area	Adequate display lighting, minimal plumbing	Warm and cool air (zoned)	745.41	4.95	71.50
	Good storage	Reinforced concrete; semi-finished, painted interior	Some partitions, heavy floor, good storage or manufacturing	Adequate lighting and plumbing, good drains	Space heaters	558.44	3.71	53.61
	Average storage	Reinforced concrete, unfinished interior	Unfinished storage areas, some partitions	Minimum lighting and plumbing, drains	None	423.78	2.81	40.68
CDS†	Finished laboratory	Reinforced concrete, plaster or drywall interior	R&D finish, administrative and technical facilities	Adequate lighting and plumbing for R&D facilities	*Complete H.V.A.C.	938.41	6.23	87.76
	Office	Plaster or drywall interior	Average office finish, acoustic tile, vinyl composition	Typical office lighting and plumbing	Forced air	592.02	3.93	55.25
	Display	Plaster or drywall interior	Display finish, acoustic tile, vinyl composition, storage, shop area	Adequate display lighting, minimal plumbing	Forced air	508.17	3.37	47.52
	Average storage	Reinforced concrete, unfinished interior	Unfinished storage area	Minimum lighting and drains	None	284.28	1.89	26.59

†For fire-resistant Type I basements, with concrete slab separation under Class C, D or S units, add $5.15 per square foot ($55.43 per square meter).

PARKING BASEMENTS – See Page 33.

SPRINKLERS – Systems are not included. Costs should be added from Page 36.

*Adjust for heat from table on preceding page. The laboratory basement costs include low-quality complete H.V.A.C. For all others, see Page 36.

MULTISTORY BUILDINGS – Add .5% (1/2%) for each story over three, above ground, to all base costs of the building, including basements, but excluding mezzanines.

BROADCASTING FACILITIES (498)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
A-B	Good	Good metal and glass, concrete, some good stone, good entrance	Special finishes, acoustic design, good presentation studios	Special lighting and electrical, good plumbing	Hot and chilled water (zoned)	$2,402.96	$15.95	$223.24
	Average	Precast concrete, brick, limestone trim, decorative front and lobby	Acoustic design, some special finishes, good main studio, many offices	Studio lighting and electrical, adequate plumbing	Hot and chilled water (zoned)	1,835.58	12.18	170.53
	Low cost	Face brick, concrete, some ornamentation, plain entrance	Plaster or gypsum, suspended ceiling, finished lobby, offices, small studios	Adequate electrical, lighting and plumbing	Warm and cool air (zoned)	1,336.24	8.87	124.14
C	Excellent	Face brick, stone, architectural concrete, good entrance and lobby	Special finishes, acoustic design, high-cost finishes, good main studio	Special lighting and electrical, good plumbing	Hot and chilled water (zoned)	2,265.18	15.03	210.44
	Good	Face brick, stone, metal and glass, decorative front and lobby	Good interior finish and detail, good studios, many offices	Studio lighting, good electrical and plumbing	Warm and cool air (zoned)	1,625.58	10.79	151.02
	Average	Brick, block, concrete, plain front and lobby, some trim	Plaster or gypsum, suspended ceiling, some access floor, carpeted lobby	Adequate electrical, lighting and plumbing	Heat-pump system	1,200.08	7.96	111.49
	Low cost	Brick, block, tilt-up, very plain	Plain construction, small studios, vinyl composition, minimum facility	Minimum lighting, adequate electrical, minimum plumbing	Package A.C.	888.14	5.89	82.51
D	Excellent	Face brick or stone veneer, EIFS, good entrance and lobby	Special finishes, acoustic design, high-cost finishes, good main studio	Special lighting and electrical, good plumbing	Hot and chilled water (zoned)	2,162.81	14.35	200.93
	Good	Brick veneer, best stucco or siding with good front and lobby	Good interior finish and detail, good studios, many offices	Studio lighting and electrical, adequate plumbing	Warm and cool air (zoned)	1,545.28	10.25	143.56
	Average	Brick veneer, good stucco or siding, some trim, plain front and lobby	Plaster or gypsum, suspended ceiling, some access floor, carpeted lobby	Adequate electrical, lighting and plumbing	Heat-pump system	1,137.54	7.55	105.68
	Low cost	Stucco or siding, little trim, plain entry	Plain construction, small studios, vinyl composition, minimum facility	Minimum lighting, adequate electrical, minimum plumbing	Package A.C.	839.70	5.57	78.01
DPOLE	Average	Pole frame, good metal panels, finished inside, some trim	Plaster or gypsum, suspended ceiling, some access floor, carpeted lobby	Adequate electrical, lighting and plumbing	Heat-pump system	1,083.29	7.19	100.64
	Low cost	Metal panels on pole frame, finished interior, small entrance	Plain construction, small studios, vinyl composition, minimum facility	Minimum lighting, adequate electrical, minimum plumbing	Package A.C.	797.72	5.29	74.11
S	Good	Good sandwich panels, good entrance and trim	Good interior finish and detail, good studios, many offices	Studio lighting and electrical, adequate plumbing	Warm and cool air (zoned)	1,564.12	10.38	145.31
	Average	Sandwich panels, or finished interior, some ornamentation	Plaster or gypsum, suspended ceiling, some access floor, carpeted lobby	Adequate electrical, lighting and plumbing	Heat-pump system	1,144.75	7.60	106.35
	Low cost	Metal panels, finished interior, little trim, plain entry	Plain construction, small studios, vinyl composition, minimum facility	Minimum lighting, adequate electrical, minimum plumbing	Package A.C.	840.24	5.58	78.06

BROADCASTING BASEMENTS

A-B	Semifinished	Low-cost finishes	Finished lounge/restrooms, some utility and storage	Minimum lighting, adequate plumbing	Hot water	$691.91	$4.59	$66.42
CDS	Semifinished	Low-cost finishes	Minimum lounge area, restrooms, some utility and storage	Minimum lighting, adequate plumbing	Forced air	494.71	3.28	46.27

CANOPIES – Large entrance marquees or carport canopies generally cost 1/5 to 2/5 of the final base cost per square foot of the building, or they may be computed from the Segregated Costs, Section 44, or from Unit-in-Place Costs.

MULTISTORY BUILDINGS – Add .5% (1/2%) for each story over three, above ground, to all base costs of the building, including basements, but excluding mezzanines.

ELEVATORS AND HANDICAPPED LIFTS – See Page 36.

RADIO AND TV TOWERS – See Section 67, Page 6.

BALCONIES – Exterior balconies generally cost 1/5 to 1/3 of the final base cost per square foot of the building, or they may be computed from the Segregated Costs, Section 44, or from the Unit-in-Place Costs.

SPRINKLERS – Systems are not included. Costs should be added from Page 36.

BASEMENTS – See Page 18.

MEZZANINES – See Page 27.

PASSENGER TERMINALS (571)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
A-B	Excellent	Special architecture, metal and glass, stone, concrete, skylights	Special finishes, acoustic design, high-cost lobby, concourse finishes	*High-quality specialty lighting, best wiring throughout, good plumbing	Complete H.V.A.C.	$4,035.96	$26.78	$374.95
	Good	Face brick, metal and glass, limestone, architectural concrete	Good finishes throughout, some extras, typical major terminal facility	*Special lighting, good sound systems and plumbing, some extras	Complete H.V.A.C.	2,842.13	18.86	264.04
	Average	Brick, concrete or metal panels, formed concrete, decorative lobby	Vaulted ceilings, pavers, terrazzo, good air- or train-type terminal	*Good lighting, sound systems and plumbing, food service	Complete H.V.A.C.	2,000.49	13.28	185.85
	Low cost	Brick, precast concrete, good block, some trim	Finished interior, suspended ceiling, terrazzo lobby, small main terminal	*Average lighting, good sound and plumbing, lounge	Complete H.V.A.C.	1,409.76	9.36	130.97
C	Excellent	High-cost roof, large arched entries and domed skylights	Special finishes, acoustic design, high-cost lobby, concourse finishes	*High-quality specialty lighting, best wiring throughout, good plumbing	Complete H.V.A.C.	2,821.67	18.72	262.14
	Very good	Face brick, stone, terra cotta, ornamental entrance and lobby	Good finishes throughout, some extras, typical major terminal facility	*Special lighting, good sound systems and plumbing, some extras	Complete H.V.A.C.	2,212.65	14.68	205.56
	Good	Brick, block, concrete, good decorative front and lobby	Vaulted ceilings, pavers, terrazzo, good air- or train-type terminal	Good lighting, sound systems and plumbing, food service	Hot and chilled water (zoned)	1,681.44	11.16	156.21
	Average	Brick, block, concrete, good front and lobby, some trim	Finished interior, suspended ceiling, terrazzo lobby, small main terminal	Average lighting, good sound and plumbing, lounge	Warm and cool air (zoned)	1,033.99	6.86	96.06
	Fair	Brick, block, concrete panels, plain commercial building, small entry	Drywall, acoustic tile, vinyl comp. lobby, small city bus station	Minimum lighting, adequate sound, minimum plumbing	Heat pump system	823.12	5.46	76.47
	Low cost	Low-cost block, tilt-up, very plain, acoustic sound walls	Few partitions, very plain, minimum waiting and concession/ticket area	Minimum code, public address system	Package A.C.	655.20	4.35	60.87
D	Very good	Face brick or stone veneer, ornamental entrance and lobby	Good finishes throughout, some extras, typical major terminal facility	*Special lighting, good sound systems and plumbing, some extras	Complete H.V.A.C.	2,065.93	13.71	191.93
	Good	Stucco, some brick or stone trim, decorative front and lobby	Vaulted ceilings, pavers, terrazzo, good air- or train-type terminal	Good lighting, sound systems and plumbing, food service	Hot and chilled water (zoned)	1,563.47	10.38	145.25
	Average	Stucco or siding, good front and lobby, some trim	Finished interior, suspended ceiling, terrazzo lobby, small main terminal	Average lighting, good sound and plumbing, lounge	Warm and cool air (zoned)	956.60	6.35	88.87
	Fair	Siding or stucco, small entrance	Drywall, acoustic tile, vinyl comp. lobby, small city bus station	Minimum lighting, adequate sound, minimum plumbing	Heat pump system	760.37	5.05	70.64
	Low cost	Low-cost wood or stucco, very plain	Few partitions, very plain, minimum waiting and concession/ticket area	Minimum code, public address system	Package A.C.	604.40	4.01	56.15
D POLE	Fair	Metal panels on pole frame, finished interior, small entrance	Drywall, acoustic tile, vinyl comp. lobby, small city bus station	Minimum lighting, adequate sound, minimum plumbing	Heat pump system	710.42	4.71	66.00
	Low cost	Pole frame and truss, metal siding, low-cost finish and insulation	Few partitions, very plain, minimum waiting and concession/ticket area	Minimum code, public address system	Package A.C.	562.31	3.73	52.24
S	Average	Good metal panels, roof, front and lobby, some trim	Finished interior, suspended ceiling, terrazzo lobby, small main terminal	Average lighting, good sound and plumbing, lounge	Warm and cool air (zoned)	952.40	6.32	88.48
	Fair	Metal panels, finished interior, small entrance, masonry sound walls	Drywall, acoustic tile, vinyl comp. lobby, small city bus station	Minimum lighting, adequate sound, minimum plumbing	Heat pump system	755.31	5.01	70.17
	Low cost	Single wall, low-cost interior finish and insulation	Few partitions, very plain, minimum waiting and concession/ticket area	Minimum code, public address system	Package A.C.	598.91	3.97	55.64

COMPLETE H.V.A.C		SQUARE METER COSTS Mild Climate	Moderate Climate	Extreme Climate	SQUARE FOOT COSTS Mild Climate	Moderate Climate	Extreme Climate
Classes A and B . .	Excellent	$391.27	$472.00	$568.88	$36.35	$43.85	$52.85
	Good	269.10	346.06	445.09	25.00	32.15	41.35
	Average	184.60	253.49	348.75	17.15	23.55	32.40
	Low Cost	127.55	186.22	272.87	11.85	17.30	25.35
Classes C and D . .	Excellent	262.10	337.45	433.79	24.35	31.35	40.30
	Very Good	179.76	247.03	338.53	16.70	22.95	31.45

***ELEVATORS** – Buildings with base costs which include elevators and escalators are marked with an asterisk (*). If the subject building has no elevators, deduct the following from the base costs for the buildings on this page which are so marked. For buildings not marked, or for basement stops, add costs from Page 36.

Classes A and B	Sq. M.	Sq. Ft.		Sq. M.	Sq. Ft.
Excellent	$109.79	$10.20	Average	$59.20	$5.50
Good	80.73	7.50	Low	43.06	4.00
Classes C and D					
Excellent	$68.89	$6.40	Very Good	$49.51	$4.60

MAIN POST OFFICES (581)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
A-B	Good	Face brick, metal panels, good glass, ornamentation	Plaster, vinyl wall finishes, vinyl composition, some terrazzo or pavers	*High-quality lighting and security wiring, good plumbing	Hot and chilled water (zoned)	$2,325.78	$15.43	$216.07
	Average	Brick, precast or metal and glass panels, ornamentation	Plaster and drywall, vinyl wall finish, vinyl composition tile	*Good illumination, security wiring, adequate plumbing	Warm and cool air (zoned)	1,756.90	11.66	163.22
C	Excellent	Stone, ashlar or panels, highly ornamental	Plaster, vinyl wall finishes, vinyl composition, some terrazzo or pavers	High-quality lighting and security wiring, good plumbing	Hot and chilled water (zoned)	2,208.45	14.66	205.17
	Good	Ornamental brick or block, precast concrete, good ornamentation	Plaster/drywall, vinyl or enamel wall finish, good resilient floors	Good illumination, security wiring, adequate plumbing	Warm and cool air (zoned)	1,627.84	10.80	151.23
	Average	Brick, block, tilt-up, some good ornamentation	Drywall, vinyl or enamel wall finish, resilient floors, adequate offices	Adequate illumination, security wiring and plumbing	Heat pump system	1,234.52	8.19	114.69
D Masonry Veneer	Excellent	Best ashlar stone veneer, good trim and ornamentation	Plaster, vinyl wall finishes, vinyl composition, some terrazzo or pavers	High-quality lighting and security wiring, good plumbing	Warm and cool air (zoned)	2,032.14	13.49	188.79
	Good	Brick or stone veneer, good built-up or shingle roof and trim	Plaster/drywall, vinyl or enamel wall finish, good resilient floors	Good illumination, security wiring, adequate plumbing	Warm and cool air (zoned)	1,553.25	10.31	144.30
	Average	Brick or block veneer, shingle or built-up roof, some good ornamentation	Drywall, vinyl or enamel wall finish, resilient floors, adequate offices	Adequate illumination, security wiring and plumbing	Heat pump system	1,177.58	7.81	109.40
D	Very Good	Best sidings, much trim, highly ornamented, complex roof, skylights	Plaster/drywall, vinyl wall finishes, vinyl composition, some terrazzo or pavers	Good-quality lighting and security wiring, good plumbing	Warm and cool air (zoned)	1,705.99	11.32	158.49
	Good	Good EIFS, stucco or siding, some good ornamentation	Plaster/drywall, vinyl or enamel wall finish, good resilient floors	Good illumination, security wiring, adequate plumbing	Warm and cool air (zoned)	1,498.78	9.95	139.24
	Average	Stucco, EIFS, or siding, some ornamentation	Drywall, vinyl or enamel wall finish, resilient floors, adequate offices	Adequate illumination, security wiring and plumbing	Heat pump system	1,145.61	7.60	106.43
S	Average	Steel frame, best sandwich panels, some good ornamentation	Drywall, vinyl or enamel wall finish, resilient floors, adequate offices	Adequate illumination, security wiring and plumbing	Heat pump system	1,164.88	7.73	108.22

MAIL-PROCESSING FACILITIES (583)

A-B	Average	Brick, precast or metal and glass panels, good trim	Plaster and drywall, good office and sorting areas, lookout galleries	*Good illumination, security wiring, adequate plumbing	Hot and chilled water (zoned)	$1,311.06	$8.70	$121.80
C	Good	Ornamental brick or block, precast concrete, good trim	Some good offices and interior finish, sorting areas, lookout galleries	High-level lighting and good plumbing and wiring	Hot and chilled water(zoned)	1,149.27	7.63	106.77
	Average	Brick, block, tilt-up, some trim, bar or web joists	Painted walls, finished offices and sorting areas, hardened slab	Reading-level lighting, adequate plumbing, security wiring	Warm and cool air (zoned)	799.98	5.31	74.32
S	Good	Steel frame, sandwich panels, good trim	Some good offices and interior finish, sorting areas, lookout galleries	High-level lighting and good plumbing and wiring	Hot and chilled water (zoned)	1,101.16	7.31	102.30
	Average	Sandwich panels, some trim, bar or web joists	Drywall interiors, finished offices and sorting areas, hardened slab	Reading-level lighting, adequate plumbing, security wiring	Warm and cool air (zoned)	771.46	5.12	71.67

NOTE: Process wiring can add 100% – 150% to the electrical costs, see Section 44.

MULTISTORY BUILDINGS – Add .5% (1/2%) for each story over three, above ground, to all base costs of the building, including basements, but excluding mezzanines.

LOADING AND SHIPPING DOCKS, DOCK-HEIGHT FLOOR – see Page 27.

SPRINKLERS – Systems are not included. Costs should be added from Page 36.

CANOPIES – Large entrance marquees or carport canopies generally cost 1/5 to 2/5 of the final base cost per square foot of the building, or they may be computed from the Segregated Costs, Section 44, or from the Unit-in-Place Costs.

***ELEVATORS –** Buildings with base costs which include elevators are marked with an asterisk (*). If the subject building has no elevators, deduct the following from the base costs above.

Classes A and B	Sq. M.	Sq. Ft.		Sq. M.	Sq. Ft.
Good	$76.42	$7.10	Average	$55.97	$5.20

BASEMENTS – See Page 18.

PARKING BASEMENTS – See Page 33.

BALCONIES – Exterior balconies generally cost 1/5 to 1/3 of the final base cost per square foot of the building, or they may be computed from the Segregated Costs, Section 44, or from the Unit-in-Place Costs.

CALCULATOR METHOD

BRANCH POST OFFICES (582)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
A-B	Average	Concrete, metal/glass, or masonry panels, usually part of a building	Plaster and drywall, vinyl wall finish, resilient floors	Good illumination and wiring, adequate plumbing	Warm and cool air (zoned)	$1,325.05	$ 8.79	$123.10
C	Excellent	Best brick, ashlar on block, stone trim, good ornamentation	Plaster/drywall, vinyl wall finishes, tiled lobby	Good lighting and security wiring, good plumbing	Heat pump system	1,965.61	13.04	182.61
	Good	Ornamental brick or block, precast concrete, good trim	Plaster/drywall, vinyl or enamel wall finish, resilient floors, good lobby	Good illumination, adequate plumbing and wiring,	Package A.C.	1,450.45	9.63	134.75
	Average	Brick, block, tilt-up, some trim	Drywall interiors, vinyl composition tile, acoustic tile, adequate lobby	Adequate illumination and plumbing, standard fixtures	Package A.C.	1,082.32	7.18	100.55
	Low cost	Block or brick, stock plans, plain, minimum fenestration	Gypsum board and paint, vinyl composition, very small lobby	Adequate lighting, minimum plumbing and wiring	Forced air	772.42	5.13	71.76
D **Masonry Veneer**	Excellent	Brick or stone veneer, good ornamentation	Plaster/drywall, vinyl wall finishes, tiled lobby	Good lighting and security wiring, good plumbing	Heat pump system	1,868.74	12.40	173.61
	Good	Good brick veneer, good trim	Plaster/drywall, vinyl or enamel wall finish, resilient floors, good lobby	Good illumination, adequate plumbing and wiring	Package A.C.	1,385.87	9.20	128.75
	Average	Brick veneer, built-up or shingle roof, some trim	Drywall interiors, vinyl composition tile, acoustic tile, adequate lobby	Adequate illumination and plumbing, standard fixtures	Package A.C.	1,038.83	6.89	96.51
	Low cost	Brick veneer, stock plans, plain, minimum fenestration	Gypsum board and paint, vinyl composition, very small lobby	Adequate lighting, minimum plumbing and wiring	Forced air	744.12	4.94	69.13
D	Excellent	Best sidings, shingles, EIFS, elastometric roof cover	Plaster/drywall, vinyl wall finishes, tiled lobby	Good lighting and security wiring, good plumbing	Heat pump system	1,771.75	11.76	164.60
	Good	Good siding or stucco, good trim	Plaster/drywall, vinyl or enamel wall finish, resilient floors, good lobby	Good illumination, adequate plumbing and wiring	Package A.C.	1,327.42	8.81	123.32
	Average	Stucco, EIFS, or siding, some trim	Drywall interiors, vinyl composition tile, acoustic tile, adequate lobby	Adequate lighting and plumbing, standard fixtures	Package A.C.	1,005.36	6.67	93.40
	Low cost	Stucco or siding, stock plans, plain, minimum fenestration	Drywall, few partitions, asphalt tile, few extras, very small lobby	Adequate lighting, minimum plumbing and wiring	Forced air	727.32	4.83	67.57
S	Average	Sandwich panels, some ornamentation	Drywall interiors, vinyl composition tile, acoustic tile, adequate lobby	Adequate illumination and plumbing, standard fixtures	Package A.C.	1,027.21	6.82	95.43

ARMORIES (301)

C	Excellent	Face brick, good ornamentation good frame, bar or web joists	Good interior finish, offices and classrooms, indoor range and vaults	Good lighting and outlets, tiled showers and restrooms	Package A.C.	$1,482.85	$9.84	$137.76
	Good	Brick or block, some trim, wall bearing or frame	Finished interior, office and classrooms, secured storage	Good lighting and plumbing, showers	Forced air	1,116.33	7.41	103.71
	Average	Brick, block, very plain, some trim	Some finish, office and classroom	Adequate lighting and plumbing	Space heaters	842.82	5.59	78.30
D	Excellent	Brick veneer, good ornamentation, good frame, bar or web joists	Good interior finish, offices and classrooms, indoor range and vaults	Good lighting and outlets, tiled showers and restrooms	Package A.C.	1,372.52	9.11	127.51
	Good	Stucco or brick veneer, some trim, wall bearing or frame	Finished interior, office and classrooms, secured storage	Good lighting and plumbing, showers	Forced air	1,035.28	6.87	96.18
	Average	Wood frame and stucco or siding	Some finish, office and classroom	Adequate lighting and plumbing	Space heaters	783.40	5.20	72.78
S	Average	Steel frame, insulated panels, some fenestration	Some interior finish, office and classroom	Adequate lighting and plumbing	Space heaters	793.41	5.27	73.71
CDS	Average basement	Reinforced concrete, unfinished interior	Unfinished secure storage area	Adequate lighting and plumbing	None	413.34	2.74	38.40

DOCK-HEIGHT FLOORS AND LOADING DOCKS – See Page 27. **SPRINKLERS –** See Page 36. **MEZZANINES –** See Page 27. **BASEMENTS –** See Page 18.

DISTRIBUTION WAREHOUSES (407)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
A	Good	Ornamental concrete, brick, or metal/glass panels, office front	Plaster or drywall with partitions, distribution areas, fin. ceilings, vaults	*Good lighting, plumbing, restrooms for personnel	Hot water	$973.82	$6.46	$90.47
	Average	Brick on block or tile, concrete panels, good fenestration	Painted walls, offices, and distribution areas	*Reading-level lighting and adequate plumbing	Space heaters	738.84	4.90	68.64
B	Good	Ornamental concrete, brick, or metal/glass panels, office front	Plaster or drywall with partitions, distribution areas, fin. ceilings, vaults	*Good lighting, plumbing, adequate restrooms	Hot water	920.11	6.11	85.48
	Average	Brick on block or tile, concrete panels, good fenestration	Painted walls, offices and distribution areas	*Reading-level lighting, adequate plumbing	Space heaters	693.09	4.60	64.39
C	Excellent	Brick, metal/glass, ornamental facades and fenestration	Completely finished, drugs, food, or bonded storage, large offices	High-level lighting and good plumbing	Package A.C.	962.30	6.39	89.40
	Good	Steel frame, good brick, block, or tilt-up, tapered girders	Plaster or drywall, some masonry partitions, good offices	Reading-level lighting, adequate plumbing	Forced air	660.91	4.39	61.40
	Average	Steel or wood frame or bearing walls, brick, block, or tilt-up	Painted walls, finished offices and distribution areas, hardened slab	Good lighting, adequate plumbing	Space heaters	453.16	3.01	42.10
	Low cost	Block, tilt-up, very plain, light construction	Unfinished, shell type, adequate offices, partitioned areas	Adequate lighting, plumbing fixtures	Space heaters	324.43	2.15	30.14
D	Good	Good wood frame with stucco or siding, some ornamentation	Some good offices and distribution areas	Reading-level lighting, adequate plumbing	Forced air	588.68	3.91	54.69
	Average	Stucco or siding on wood, good fenestration	Small office, partitions and distribution areas	Good lighting, adequate plumbing	Space heaters	402.57	2.67	37.40
DPOLE	Average	Good pole frame, metal siding	Distribution areas, small offices	Adequate lighting/plumbing	Space heaters	353.60	2.35	32.85
	Low cost	Wood pole frame, metal siding	Unfinished, adequate offices, partitioned areas	Adequate lighting, plumbing fixtures	Space heaters	255.65	1.70	23.75
S	Excellent	Heavy steel frame, sandwich panels, good ornamentation	Completely finished, drugs, food, or bonded storage, large offices	High-level lighting and good plumbing	Package A.C.	877.37	5.82	81.51
	Good	Good steel frame, siding and fenestration	Some good offices and interior finish, distribution areas	Reading-level lighting, adequate plumbing	Forced air	596.54	3.96	55.42
	Average	Rigid steel frame and siding	Distribution areas, small offices	Adequate lighting/plumbing	Space heaters	404.62	2.69	37.59
	Low cost	Pre-eng. frame, plain shell	Adequate office, partitioned areas	Adequate lighting/plumbing	Space heaters	288.04	1.91	26.76

MULTISTORY BUILDINGS – Add .5% (1/2%) for each story, over three above ground, to all base costs of the building, including basements but excluding mezzanines.

SPRINKLERS – Systems are not included. Costs should be added from Page 36.

DOCK-HEIGHT FLOORS – See Page 27.

***ELEVATORS –** Buildings with base costs which include elevators are marked with an asterisk (*). If the subject building has no elevators, deduct the following from the base costs for buildings on this page which are so marked. For buildings not marked or for basement stops, add costs from Page 36.

Classes A and B	Sq. M.	Sq. Ft.		Sq. M.	Sq. Ft.
Good	$24.22	$2.25	Average	$18.84	$1.75

TRANSIT WAREHOUSES (387)

C	Good	Brick or block, best tilt-up, good overhead doors	Good finished office, drivers' rest areas, dock-height floor	Good lighting, plumbing for transient drivers	Forced air	$872.53	$5.79	$81.06
	Average	Block, good tilt-up, overhead doors	Some finished office, drivers' rest areas, dock-height floor	Adequate lighting, plumbing for transient drivers	Space heaters	611.40	4.06	56.80
D	Average	Wood frame, siding or stucco	Some finished office/drivers' rest areas, dock-height floor	Adequate lighting/plumbing	Space heaters	543.90	3.61	50.53
DPOLE	Average	Wood pole frame, metal siding	Some finished office/drivers' rest areas, dock-height floor	Adequate lighting/plumbing	Space heaters	500.96	3.32	46.54
S	Good	Heavy steel frame and siding, good overhead doors	Good finished office, drivers' rest areas, dock-height floor	Good lighting, plumbing for transient drivers	Forced air	782.97	5.20	72.74
	Average	Steel frame and siding	Some finished office/drivers' rest areas, dock-height floor	Adequate lighting/plumbing	Space heaters	546.60	3.63	50.78

CALCULATOR METHOD

COLD STORAGE FACILITIES (447)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
A-B	Good	Face brick, concrete panels, good facade, heavily insulated	Frozen foods, some good offices or production, sharp freeze, cooler areas	Good lighting and plumbing, outlets and drains	Complete H.V.A.C.	$1,032.48	$6.85	$ 95.92
	Average	Brick, block, concrete panels, storefront entry, fully insulated	Chilled and freezer rooms, good offices and support areas	Adequate lighting, plumbing and drains, some power outlets	Complete H.V.A.C.	740.35	4.91	68.78
C	Excellent	Best block, tilt-up, good storefront, heavy floor, wall, roof insulation	Frozen foods, some good offices or production, sharp freeze, cooler areas	Good lighting and plumbing, outlets and drains	Complete H.V.A.C.	1,183.07	7.85	109.91
	Good	Tilt-up, steel frame, good block, or tapered girders, heavily insulated	Chilled and freezer rooms, good offices and support areas	Good lighting, adequate plumbing and drains, some power outlets	Complete H.V.A.C.	841.96	5.59	78.22
	Average	Steel or wood frame or bearing walls, block or tilt-up, insulated	Cooler and chilled rooms, some distribution offices and finish	Adequate lighting and plumbing	Complete H.V.A.C.	602.68	4.00	55.99
	Fair	Block tilt-up, sealed ceiling and wall insulation	Cooler, controlled atmosphere, sealed rooms and slab, small office	Adequate electrical, minimum plumbing	Complete low-cost H.V.A.C	504.51	3.35	46.87
	Low cost	Block, tilt-up, very plain, light construction, exposed ceiling insulation	Cooler storage, unfinished, few partitions, small office	Minimum lighting and plumbing	Complete H.V.A.C.	435.30	2.89	40.44
D	Average	Stucco on wood frame, wood trusses, fully insulated	Cooler and chilled rooms, some distribution offices and finish	Adequate lighting and plumbing	Complete H.V.A.C.	557.14	3.70	51.76
	Low cost	Stucco or siding on wood, insulated, exposed ceiling insulation	Cooler storage, unfinished, few partitions, small office	Minimum lighting and plumbing	Complete H.V.A.C.	399.88	2.65	37.15
DPOLE	Average	Pole frame, good insulated siding or sandwich panels, good roof	Cooler and chilled rooms, some distribution offices and finish	Adequate lighting and plumbing	Complete H.V.A.C.	512.90	3.40	47.65
	Low cost	Pole frame, metal siding, lined, exposed ceiling insulation	Cooler storage, unfinished, few partitions, small office	Minimum lighting and plumbing	Complete H.V.A.C.	364.58	2.42	33.87
S	Excellent	Good steel frame, insulated panel walls and roof, good facade	Frozen foods, some good offices or production, sharp freeze, cooler areas	Good lighting and plumbing, outlets and drains	Complete H.V.A.C.	1,174.68	7.80	109.13
	Good	Good steel frame, sandwich panels, fenestration, heavily insulated	Chilled and freezer rooms, good offices and support areas	Good lighting, adequate plumbing and drains, some power outlets	Complete H.V.A.C.	810.85	5.38	75.33
	Average	Rigid steel frame, insulated siding or sandwich panels, good roof	Cooler and chilled rooms, some distribution offices and finish	Adequate lighting and plumbing	Complete H.V.A.C.	564.14	3.74	52.41
	Fair	Pre-engineered metal lined and sealed wall and ceiling insulation	Cooler, controlled atmosphere, sealed rooms and slab, small office	Adequate electrical, minimum plumbing	Complete low-cost H.V.A.C.	465.97	3.09	43.29
	Low cost	Pre-engineered frame, metal siding, lined, exposed ceiling insulation	Cooler storage, unfinished, few partitions, small office	Minimum lighting and plumbing	Complete H.V.A.C.	397.30	2.64	36.91

COLD STORAGE HEATING, VENTILATING AND AIR CONDITIONING

Costs for cold storage mechanical items are listed separately from those for other buildings in this section because of special requirements. Costs listed below are averages for the gross building area. Moderate climate costs are included in the cold storage base costs above. Refrigerated cooling and controlled atmosphere costs vary greatly, but, in general, the following square foot figures will serve as a guide. For a more specific cost, see Section 58. If a cubic foot cost is used, use one-fourteenth of the difference shown to adjust the basic cubic foot cost. Subsoil heating will cost $1.40 to $2.45 per square foot of floor area.

COMPLETE H.V.A.C.	SQUARE METER COSTS Mild Climate	Moderate Climate	Extreme Climate	SQUARE FOOT COSTS Mild Climate	Moderate Climate	Extreme Climate
Excellent (Freezer/Sharp freeze)	$105.49	$143.70	$195.90	$9.80	$13.35	$18.20
Good (Chiller/Freezer)	89.88	122.71	167.92	8.35	11.40	15.60
Average (Cooler/Chilled air)	75.35	104.95	145.31	7.00	9.75	13.50
Low cost and fair (Cooled air only)	64.58	89.34	124.86	6.00	8.30	11.60

CONTROLLED ATMOSPHERE ENVIRONMENTAL BUILDINGS	SQUARE METER COSTS Mild Climate	Moderate Climate	Extreme Climate	SQUARE FOOT COSTS Mild Climate	Moderate Climate	Extreme Climate
Fruits, conditioned air	$167.92	$207.21	$256.18	$15.60	$19.25	$23.80
Vegetables,						
high to precise humidity	207.21	321.31	497.30	19.25	29.85	46.20
warm and cool	272.87	412.26	623.77	25.35	38.30	57.95

MULTISTORY BUILDINGS – Add .5% (1/2%) for each story, over three above ground, to all base costs of the building, including basements but excluding mezzanines.

SPRINKLERS – Systems are not included. Costs should be added from Page 36.

FARM FIELD STORAGE BUILDINGS – See Section 17.

DOCK-HEIGHT FLOORS and MEZZANINES – See Page 27.

SHIPPING DOCK EQUIPMENT and WAREHOUSE SHELVING – See Section 65.

CREAMERIES (315)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
A-B	Average	Brick, concrete, solid construction	Plaster ceilings, tile floors, wainscot in production areas	Good lighting and plumbing, many outlets, lab	Steam	$1,066.93	$7.08	$99.12
C	Good	Brick, block, concrete, retail entrance and storefront	Plaster, tile floors and wainscot, freezer and cooler rooms	Good lighting and plumbing, many outlets and drains, lab	Steam	1,049.27	6.96	97.48
	Average	Brick, block, little trim, steel or wood trusses or joists	Plaster walls and ceiling, epoxy and tile on concrete floor, freezer room	Adequate lighting, plumbing, power outlets and drains	Steam	771.46	5.12	71.67
	Low cost	Low-cost brick, block, tilt-up, no trim, wood rafters	Painted walls, slab floor, partly finished ceiling, chiller room	Minimum electrical and plumbing	Space heaters	525.18	3.49	48.79
D	Good	Brick veneer, good stucco and trim, EIFS, retail entrance and storefront	Plaster, tile floors and wainscot, freezer and cooler rooms	Good lighting and plumbing, many outlets and drains, lab	Steam	956.17	6.35	88.83
	Average	Brick veneer, good stucco, insulated, wood truss and rafters	Plaster walls and ceiling, some tile, concrete floor, freezer room	Adequate lighting, plumbing, power outlets and drains	Steam	695.46	4.62	64.61
	Low cost	Stucco or siding, no trim, light roof structure	Plaster or gypsum board, concrete slab, chiller room	Minimum lighting and outlets, minimum plumbing	Space heaters	464.04	3.08	43.11
S	Good	Good steel frame, sandwich panels, retail entrance and storefront	Plaster, tile floors and wainscot, freezer and cooler rooms	Good lighting and plumbing, many outlets and drains, lab	Steam	975.43	6.47	90.62
	Average	Rigid steel frame, insulated siding or sandwich panels, good roof	Plaster walls and ceiling, some tile, concrete floor, freezer room	Adequate lighting, plumbing, power outlets and drains	Steam	709.46	4.71	65.91
	Low cost	Pre-engineered frame, metal siding, lined	Plaster or gypsum board, concrete slab, chiller room	Minimum lighting and outlets, minimum plumbing	Space heaters	474.37	3.15	44.07

NOTE: For cold storage refrigeration, see Page 24. For retail diary sales buildings, see Section 13. For short term storage, see section 17.

MEGA (STORAGE/DISTRIBUTION) WAREHOUSES (584)

C	Good	Glulam or steel frame, decorative block or tilt-up, elastomeric roof	Plaster or drywall, some masonry partitions, good offices, cafeteria	Good lighting and plumbing, kitchen	Space heaters	$510.75	$3.39	$47.45
	Average	Open steel or wood frame, block or tilt-up, good roof	Painted walls, finished offices and break room, good flat slab	Adequate lighting, good plumbing fixtures, food service	Space heaters	335.51	2.23	31.17
	Low cost	Large tilt-up, light panelized const., built-up roof, exposed insulation	Painted walls or unfinished, small offices, hardened slab	Adequate lighting and plumbing, some extras	Space heaters	222.71	1.48	20.69
	Cheap	Tilt-up, very large shell type	Unfinished, bulk storage, few offices	Minimum lighting and plumbing	Space heaters	182.13	1.21	16.92
S	Good	Heavy steel frame, insulated panels, good facade, some trim	Plaster or drywall, partitioned, good offices, cafeteria	Good lighting and plumbing, kitchen	Space heaters	486.53	3.23	45.20
	Average	Good steel frame, siding and fenestration, bar or web joints	Some good offices, interior finish and floor, break room, good flat slab	Adequate lighting, good plumbing fixtures, food service	Space heaters	332.93	2.21	30.93
	Low cost	Rigid steel frame, good metal siding and roof, exposed insulation	Unfinished, small offices, hardened slab	Adequate lighting and plumbing, some extras	Space heaters	229.81	1.53	21.35
	Cheap	Steel frame, siding, large shell type	Unfinished, bulk storage, few offices	Minimum lighting and plumbing	Space heaters	160.71	1.07	14.93

YARD IMPROVEMENTS

Paving per square foot, asphalt, employee parking . . . . . $1.15 – $1.35
asphalt, medium duty trucks . . . . . 1.60 – 2.00
concrete, heavy duty truck trailer . . . . . 2.55 – 2.95

Fencing, per linear foot, security chain link . . . . . $ 16.80 – $ 20.15
Concrete, screen walls . . . . . 138.00 – 160.00

For landscaping, lighting, rail spurs, storm water management, see Section 66.

MULTISTORY BUILDINGS – Add .5% (1/2%) for each story, over three above ground, to all base costs of the building, including basements but excluding mezzanines.

SPRINKLERS – Systems are not included. Costs should be added from Page 36.

BASEMENTS – See Page 18.

DOCK-HEIGHT FLOORS AND MEZZANINES – See Page 27.

SHIPPING DOCK EQUIPMENT AND WAREHOUSE SHELVING – See Section 65.

CALCULATOR METHOD

STORAGE WAREHOUSES (406)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
A	Good	Ornamental concrete or brick, small office front	Plaster or drywall with partitions, some finished ceilings	*Good lighting, plumbing, adequate restrooms	Hot water	$830.23	$5.51	$77.13
	Average	Brick on block or tile, concrete panels, very plain	Painted walls, few partitions, small offices	*Adequate lighting and plumbing	Space heaters	609.89	4.05	56.66
	Low cost	Low-cost block, tile or concrete	Unfin., small office, few partitions	*Minimum lighting/plumbing	Space heaters	479.97	3.19	44.59
B	Good	Ornamental concrete or brick, small office front	Plaster or drywall with partitions, finished ceilings in most areas	*Good lighting, plumbing, adequate restrooms	Hot water	777.48	5.16	72.23
	Average	Brick on block or tile, concrete panels, very plain	Painted walls, few partitions, small offices	*Adequate lighting and plumbing	Space heaters	565.76	3.75	52.56
	Low cost	Low-cost block, tile or concrete	Unfin., small office, few partitions	*Minimum lighting/plumbing	Space heaters	443.05	2.94	41.16
C	Excellent	Brick, concrete, good facade	Plaster or drywall, partitioned, finished ceilings in most areas	Good lighting and plumbing	Package A.C.	859.94	5.71	79.89
	Good	Steel frame, good brick, block, or tilt-up, tapered girders	Plaster or drywall, some masonry partitions, good offices	Good lighting, adequate plumbing	Space heaters	556.18	3.69	51.67
	Average	Steel or wood frame or bearing walls, brick, block, or tilt-up	Painted walls, finished office, hardened slab	Adequate lighting, low-cost plumbing fixtures	Space heaters	390.63	2.59	36.29
	Low cost	Block, cheap brick, tilt-up, light construction	Unfinished, small office, shell type, minimum code	Minimum lighting and plumbing	Space heaters	276.31	1.83	25.67
C MILL	Good	Mill-type construction, brick walls, wood or steel trusses	Plaster walls, masonry partitions, painted trusses	*Good lighting, adequate plumbing	Steam	761.12	5.05	70.71
	Average	Mill-type construction, brick and block, wood trusses	Painted walls, few partitions, small offices	*Adequate lighting and plumbing	Space heaters	527.01	3.50	48.96
D	Good	Heavy wood frame, wood or stucco siding	Heavy slab or mill-type floors	Good lighting, adequate plumbing	Space heaters	496.87	3.30	46.16
	Average	Stucco on wood frame, wood trusses	Small office, average slab	Adequate lighting, low-cost plumbing fixtures	Space heaters	348.00	2.31	32.33
	Low cost	Stucco or siding on wood	Unfinished, slab, utility type, minimum office	Minimum lighting and plumbing	Space heaters	245.74	1.63	22.83
D POLE	Average	Pole frame, good metal siding, insulated	Small office, some finish, slab	Adequate lighting, little plumbing	Space heaters	298.49	1.98	27.73
	Low cost	Pole frame, metal siding	Unfinished utility type, light slab, minimum office	Minimum lighting and plumbing	Space heaters	211.73	1.41	19.67
S	Excellent	Heavy steel frame, insulated panels, good facade	Plaster or drywall, partitioned, finished ceilings in most areas	Good lighting and plumbing	Package A.C.	793.09	5.26	73.68
	Good	Good steel frame, siding and fenestration	Some good office, interior finish and floor	Good lighting, adequate plumbing	Space heaters	503.43	3.34	46.77
	Average	Rigid steel frame, siding	Small office, average slab	Adequate lighting, low-cost plumbing fixtures	Space heaters	349.51	2.32	32.47
	Low cost	Pre-engineered frame, metal siding	Unfinished utility type, light slab, minimum office	Minimum lighting and plumbing	Space heaters	244.77	1.62	22.74

NOTE: For light commodity storage, see Section 17.

MULTISTORY BUILDINGS – Add .5% (1/2%) for each story, over three above ground, to all base costs of the building, including basements but excluding mezzanines.

SPRINKLERS – Systems are not included. Costs should be added from Page 36.

DOCK-HEIGHT FLOORS – See Page 27.

WAREHOUSE SHELLS – See Page 35.

***ELEVATORS –** Buildings with base costs which include elevators are marked with an asterisk (*). If the subject building has no elevators, deduct the following from the base costs for buildings on this page, which are so marked. For buildings not marked or for basement stops, add costs from Page 36.

	Sq. M.	Sq. Ft.		Sq. M.	Sq. Ft.		Sq. M.	Sq. Ft.
Good	$23.14	$2.15	Average	$18.84	$1.75	Low Cost	$14.53	$1.35

MEZZANINES – INDUSTRIAL BUILDINGS

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
A-B	Office	In building cost	Enclosed, average, industrial office finish, plaster soffit	Average office lighting and plumbing	Included in building cost	$616.78	-----	$57.30
	Display	In building cost	Showroom finish, acoustic tile, vinyl composition	Average loft lighting and plumbing	Included in building cost	450.69	-----	41.87
	Finished	In building cost	Partially open and enclosed stores and supply rooms	Average lighting, minimum plumbing	Included in building cost	402.90	-----	37.43
	Good storage/ mechanical	In building cost	Metal grating on good steel structure, no partitions	Minimum lighting, no plumbing	Included in building cost	477.38	-----	44.35
	Average storage	In building cost	Metal deck and concrete on good steel structure, no partitions	Minimum lighting, no plumbing	Included in building cost	230.35	-----	21.40
CDS	Office	In building cost	Enclosed, average industrial office finish, acoustic tile soffit	Average office lighting and plumbing	Included in building cost	437.34	-----	40.63
	Display	In building cost	Showroom finish, plaster or drywall soffit, vinyl composition	Average loft lighting and plumbing	Included in building cost	313.88	-----	29.16
	Finished	In building cost	Partially open and enclosed stores and supply rooms	Average lighting, minimum plumbing	Included in building cost	286.32	-----	26.60
	Average storage	In building cost	Heavy plywood or plank on wood or light steel structure, no partitions	Minimum lighting, no plumbing	Included in building cost	194.18	-----	18.04
	Low-cost storage	In building cost	Light storage on plywood, minimum supports, no soffit	Minimum lighting	Included in building cost	144.78	-----	13.45

MEZZANINES – Do not use story height or area-perimeter multipliers with mezzanine costs. For small prefabricated structures, see Section 64.

MISCELLANEOUS DOCK STRUCTURES

TYPE	DESCRIPTION	COST PER SQUARE METER	COST PER SQUARE FOOT
Shipping dock	Structural steel or concrete piers and frame, heavy-duty floor, steel roof structure, good lighting, office area, some closed storage, adequate plumbing and washrooms	$360.50	$33.49
Shipping dock	Wood piers and frame, heavy mill-type floor, wood roof structure, adequate lighting and plumbing, office area	335.04	31.13
Loading dock	Steel or concrete piers, heavy slab, steel bumper	211.06	19.61
Loading dock	Timber piers, heavy wood floor	173.21	16.09
Loading dock	Dirt fill, concrete retaining wall and slab, wood or steel bumper	142.02	13.19
Loading dock	Light wood piers and girders, plank floor	116.71	10.84
Loading ramp	Paved ramp, steel railing, for forklift	374.75 – $547.64	34.81 – $50.88
Loading well	Excavated well, concrete retaining walls and paved ramp, wood or steel bumper, two stalls For each additional stall, reduce costs by 10% to 15%	120.32 – 143.47	11.18 – 13.33
Loading dock roofs	Good canopy structure with lighting and finished soffit or fascia panels	112.83 – 154.37	10.48 – 14.34
Loading dock roofs	Simple wood or steel structure without soffit or lighting, corrugated metal or composition surface	75.50 – 105.09	7.01 – 9.76

NOTE: Do not apply Refinement Multipliers to docks. Add heating and cooling cost, where applicable, from Page 36 or Section 53. For open shelters, see Section 17.
For detailed shipping dock equipment costs (i.e. dock levelers), see Section 65. Rail spurs and site paving and fencing, see Section 66.

DOCK-HEIGHT FLOORS – Add the cost per square foot to the base cost of the first floor for all occupancies except transit warehouses. For cut and balance use proportional cost.

5,000 sq. ft.	$ 5.30	10,000 sq. ft.	$ 4.10	20,000 sq. ft.	$ 3.20	40,000 sq. ft.	$ 2.45	60,000 sq. ft.	$ 2.20	80,000 sq. ft.	$ 1.95	100,000 sq. ft.	$ 1.85	200,000 sq. ft.	$ 1.40
465 sq. m.	57.05	929 sq. m.	44.13	1,858 sq. m.	34.44	3,716 sq. m.	26.37	5,574 sq. m.	23.68	7,432 sq. m.	20.99	9,290 sq. m.	19.91	18,580 sq. m.	15.07

CALCULATOR METHOD

MINI-WAREHOUSES (386)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
C	Good	Brick, block or tilt-up, many doors	Subdivided cubicles, good security partitions, office-apartment	Electrical outlets and lighting in each space, minimum plumbing	None	$440.57	$2.92	$40.93
	Average	Block, tilt-up, light construction	Subdivided into cubicles, mixed sizes, unfinished slab, small office	Adequate electrical service per space, minimum water	None	329.06	2.18	30.57
	Low cost	Low-cost block, tilt-up, light roof, low-cost door entries	Subdivided into large cubicles, light slab, no support facilities	Minimum electrical service	None	245.74	1.63	22.83
D	Good	Stucco, siding or brick veneer, many doors	Subdivided cubicles, good security partitions, office-apartment	Electrical outlets and lighting in each space, minimum plumbing	None	405.48	2.69	37.67
	Average	Wood frame and stucco or wood	Subdivided into cubicles, mixed sizes, unfinished slab, small office	Adequate electrical service per space, minimum water	None	303.22	2.01	28.17
	Low cost	Low-cost stucco or siding, low-cost door entries	Subdivided into large cubicles, light slab, no support facilities	Minimum electrical service	None	226.80	1.51	21.07
D_{POLE}	Good	Good pole frame, metal siding, many doors	Subdivided cubicles, good security partitions, office-apartment	Electrical outlets and lighting in each space, minimum plumbing	None	362.21	2.40	33.65
	Average	Wood pole frame, metal siding	Subdivided into cubicles, mixed sizes, unfinished slab, small office	Adequate electrical service per space, minimum water	None	270.07	1.79	25.09
	Low cost	Pole frame, metal siding, low-cost door entries	Subdivided into large cubicles, light slab, no support facilities	Minimum electrical service	None	201.39	1.34	18.71
S	Good	Pre-engineered frame, insulated, many doors	Subdivided cubicles, good security partitions, office-apartment	Electrical outlets and lighting in each space, minimum plumbing	None	402.25	2.67	37.37
	Average	Light steel frame and metal siding	Subdivided into cubicles, mixed sizes, unfinished slab, small office	Adequate electrical service per space, minimum water	None	300.64	2.00	27.93
	Low cost	Light steel frame, siding, low-cost door entries	Subdivided into large cubicles, light slab, no support facilities	Minimum electrical service	None	224.64	1.49	20.87
	Cheap	Light steel frame, siding and doors	Extra large only; all cubes >300 sq. ft.	Minimum electrical only	None	166.63	1.11	15.48

Typical area per space is 130 square feet, with a range of 100 to 170 square feet. Electrical is included at $110.00 to $415.00 per space. Individual office-apartments can be priced from Section 12 or 17.

HIGH-RISE MINI-WAREHOUSES❖ (525)

A-B	Average	Brick, block, concrete, some metal and glass	Subdivided cubicles, good security partitions, office/apartment	*Good outlets and lighting, minimum plumbing	Ventilation	$585.88	$3.89	$54.43
C	Good	Brick, block or tilt-up, metal and glass, good trim	Subdivided cubicles, good security partitions, office/apartment	*Good outlets and lighting, minimum plumbing	Ventilation	556.18	3.69	51.67
	Average	Block, tilt-up, some metal and glass trim	Subdivided into cubicles, mixed sizes, unfinished slab, adequate office	*Adequate electrical service, minimum plumbing	Ventilation	423.35	2.81	39.33
D	Good	Brick veneer, stucco, EIFS, metal and glass trim	Subdivided cubicles, good security partitions, office/apartment	*Good outlets and lighting, minimum plumbing	Ventilation	504.29	3.35	46.85
S	Good	Pre-engineered frame, good sandwich panels	Subdivided cubicles, good security partitions, office/apartment	*Good outlets and lighting, minimum plumbing	Ventilation	510.86	3.39	47.46

❖For load-bearing parking roofs, add $5.15 per square foot ($55.65 per square meter).

For access ramps, add $18.25 – $32.45 per square foot ($196.44 – $349.29 per square meter).

MULTISTORY BUILDINGS – Add .5% (1/2%) for each story, over three above ground, to all base costs of the building, including basements but excluding mezzanines.

Use average area and average perimeter of entire mini-warehouse group to enter the floor area/perimeter table (gross area and perimeter divided by number of buildings).

SECURITY SYSTEMS – For CCTV systems, see Section 54.

YARD IMPROVEMENTS – For exterior lighting, fencing, paving, see Section 66. Complete turnkey project costs have ranged from 160% to 220% of actual building costs.

***ELEVATORS –** Buildings with base costs which include elevators are marked with an asterisk (*). If the subject building has no elevators, deduct the following from the base costs for buildings on this page which are so marked. For buildings not marked or for basement stops, add costs from Page 36.

	Sq. M.	Sq. Ft.		Sq. M.	Sq. Ft.
Good	$19.91	$1.85	Average	$14.53	$1.35

NOTES: Care must be exercised when using square foot elevator costs. Small commercial buildings may have only one elevator and/or handicap lift regardless of size, where a normal range or area served is not always reliable for low- to mid-rise applications. Costs should be added as a lump sum from Page 36.

MAINTENANCE HANGARS (329)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
C	Excellent	Structural steel, concrete panels, major jet hangars	Supply rooms, offices, heavy floor, craneways	Many power outlets, good lighting and plumbing	Package A.C.	$1,059.72	$7.03	$98.45
	Good	Steel frame, concrete panels or brick, heavy structure	Supply rooms, offices, heavy floor, storage and repair	Good electrical and plumbing	Space heaters	712.90	4.73	66.23
	Average	Pilasters or steel frame, block, tilt-up, wood or steel trusses	Painted, few partitions, small office, concrete floor	Power outlets, drains, restroom	Space heaters	512.69	3.40	47.63
	Low cost	Concrete block, low-cost brick, tilt-up, light roof structure	Some partitions, few extras, concrete or asphalt floor	Minimum lighting and plumbing, power outlets	Space heaters	370.28	2.46	34.40
D	Average	Frame and stucco or siding, light and medium aircraft hangars	Small office, few partitions, concrete floor	Power outlets, drains, restroom	Space heaters	466.19	3.09	43.31
	Low cost	Wood frame, stucco or siding, light roof structure	Some partitions, few extras, concrete or asphalt floor	Minimum electrical and plumbing, power outlets	Space heaters	334.22	2.22	31.05
S	Excellent	Structural steel, heavy steel siding, major jet hangars	Supply rooms, offices, heavy floor, craneways	Many power outlets, good lighting and plumbing	Package A.C.	998.36	6.63	92.75
	Good	Structural steel, steel siding, heavy aircraft hangars	Supply rooms, offices, heavy floor, storage and repair	Good electrical and plumbing	Space heaters	647.45	4.30	60.15
	Average	Steel frame and siding, light and medium aircraft hangars	Small office, few partitions, concrete floor	Power outlets, drains, restroom	Space heaters	451.01	2.99	41.90
	Low cost	Steel frame, steel siding, light roof structure	Some partitions, few extras, concrete or asphalt floor	Minimum electrical and plumbing, power outlets	Space heaters	316.03	2.10	29.36

STORAGE HANGARS (328)

C	Excellent	Structural steel, concrete panels, major jet hangars	Offices, few partitions, heavy floor	Good lighting and plumbing	Space heaters	$822.48	$5.46	$76.41
	Good	Steel frame, concrete panels or brick, heavy structure	Offices, heavy floor	Good electrical and plumbing	Space heaters	573.18	3.80	53.25
	Average	Pilasters or steel frame, block, tilt-up, wood or steel trusses	Painted, small office, concrete floor	Adequate electrical and plumbing	None	382.66	2.54	35.55
	Low cost	Block, cheap brick, tilt-up, light roof	Concrete or asphalt floor, few extras	Minimum electrical and water	None	264.36	1.75	24.56
D	Average	Frame and stucco or siding, light and medium aircraft hangars	Small office, concrete floor	Adequate electrical and plumbing	None	340.79	2.26	31.66
	Low cost	Wood frame, stucco or siding, light roof structure	Concrete or asphalt floor, few extras	Minimum electrical and plumbing	None	233.79	1.55	21.72
DPOLE	Low cost	Metal siding on pole frame, windows, light aircraft hangar	Shop area, light floor, few extras, some interior wall finish	Adequate electrical and water service	None	196.55	1.30	18.26
	Cheap	Pole frame, metal siding	Unfinished, partially floored	Minimum electrical	None	143.38	.95	13.32
S	Excellent	Structural steel, heavy steel siding, major jet hangars	Offices, few partitions, heavy floor	Good lighting and plumbing	Space heaters	753.70	5.00	70.02
	Good	Structural steel, steel siding, heavy aircraft hangars	Offices, heavy floor	Good electrical and plumbing	Space heaters	514.20	3.41	47.77
	Average	Steel frame and siding, light and medium aircraft hangars	Small office, concrete floor	Adequate electrical and plumbing	None	334.01	2.22	31.03
	Low cost	Pre-engineered, steel siding, light roof structure	Concrete or asphalt floor, few extras	Minimum electrical and water	None	225.51	1.50	20.95
	Cheap	Light metal frame, siding	Unfinished, partially floored	Minimum electrical	None	164.26	1.09	15.26

SPRINKLERS – Sprinkler systems are not included. Costs should be added from Page 36 for water, adding 15% for deluge systems. For foam or other types, see Section 53.

ELEVATORS – Elevators are not included. Costs should be added from Page 36.

STORAGE TANKS – See Section 61.

CALCULATOR METHOD

T-HANGARS (409)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
C	Average	Concrete block, low-cost brick, tilt-up, light roof structure	Subdivided storage hangar, concrete floor, small office	Adequate electrical and water service	None	$339.93	$2.26	$31.58
DPOLE	Low cost	Pole frame and truss, metal siding	Subdivided storage hangar, few extras, light floor and doors	Minimum electrical service	None	210.97	1.40	19.60
S	Average	Good steel frame, enameled steel panels	Subdivided storage hangar, concrete floor, small office	Adequate electrical and water service	None	309.03	2.05	28.71
	Low cost	Pre-engineered, steel siding	Subdivided storage hangar, few extras, light floor	Minimum electrical service	None	239.28	1.59	22.23

NOTE: For open sport-plane canopies or sunshade shelters, see Loading Dock Roof cost tables on Page 27 or open shelters in Section 17.

COMPLETE AUTO DEALERSHIPS❖(455)

A-B	Average	Brick, concrete or metal and glass, good showroom front	Plaster, acoustic tile, terrazzo display floor, adequate offices, garage area	Good display, adequate office and service lighting, restrooms	Warm and cool air (zoned)	$1,203.52	$7.99	$111.81
C	Excellent	Masonry, metal or concrete, highly ornamental, over 30% sales	Plaster, good acoustic panel, best display floors, sealed work floors	Special lighting, good fixtures and plumbing throughout	Warm and cool air (zoned)	1,588.98	10.54	147.62
	Good	Brick, concrete, good showroom front, good sales and service	Drywall, acoustic tile, terrazzo display floor, good office area, garage finish	Good display, office and service lighting, restrooms	Package A.C.	1,113.43	7.39	103.44
	Average	Brick, block, concrete, storefront, average sales and service	Drywall, acoustic tile, vinyl composition, office, sales cubicles	Store and office lighting, parts and garage lighting in balance	Package A.C.	800.95	5.32	74.41
	Low cost	Block, tilt-up, simple front, 15% – 25% sales-office area	Minimum store finish in sales, garage finish in balance	Adequate lighting/plumbing, minimum services	Forced air	544.87	3.62	50.62
D	Excellent	Masonry veneer, EIFS, highly ornamental, over 30% sales	Plaster, good acoustic panel, best display floors, sealed work floors	Special lighting, good fixtures and plumbing throughout	Warm and cool air (zoned)	1,517.72	10.07	141.00
	Good	Masonry veneer, good front and trim, good sales and service	Drywall, acoustic tile, terrazzo display floor, good office area, garage finish	Good display, office and service lighting, restrooms	Package A.C.	1,049.71	6.97	97.52
	Average	Siding, veneer trim, showroom front, average sales and service	Drywall, acoustic tile, vinyl composition, office, sales cubicles	Store and office lighting, parts and garage lighting in balance	Package A.C.	747.56	4.96	69.45
	Low cost	Stucco or siding, simple front, 15% – 25% sales-office area	Minimum store finish in sales, garage finish in balance	Adequate lighting/plumbing, minimum services	Forced air	500.96	3.32	46.54
DPOLE	Average	Pole frame, metal siding, storefront, average sales and service	Drywall, acoustic tile, vinyl composition, office, sales cubicles	Store and office lighting, parts and garage lighting in balance	Package A.C.	689.54	4.58	64.06
	Low cost	Metal on pole frame, simple storefront, 15% – 25% showroom	Minimum store finish in sales, garage finish in balance	Adequate lighting/plumbing, minimum services	Forced air	457.58	3.04	42.51
S	Good	Sandwich panels, good front, good sales and service	Drywall, acoustic tile, terrazzo display floor, good office area, garage finish	Good display, office and service lighting, restrooms	Package A.C.	1,056.59	7.01	98.16
	Average	Sandwich panels, showroom front, average sales and service	Drywall, acoustic tile, vinyl composition, office, sales cubicles	Store and office lighting, parts and garage lighting in balance	Package A.C.	747.45	4.96	69.44
	Low cost	Single wall, simple storefront, 15% – 25% sales-office area	Minimum store finish in sales, garage finish in balance	Adequate lighting/plumbing, minimum services	Forced air	498.05	3.31	46.27

❖For load-bearing parking roofs, add $5.15 per square foot ($55.43 per square meter).

Access ramps cost $18.25 – $32.45 per square foot ($196.44 – $349.29 per square meter).

CANOPIES – Large entrance marquees or carport canopies generally cost 1/3 to 3/5 of the final base cost per square foot of the building, or they may be computed from the Segregated Costs, Section 44, or from Unit-in-Place Costs.

MULTISTORY BUILDINGS – Add .5% (1/2%) for each story over three, above ground, to all base costs including basements, but excluding mezzanines.

SPRINKLERS – Sprinkler systems are not included. Costs should be added from Page 36.

AUTOMOTIVE LIFTS – Hoists are not included. See Page 32 or add from Section 64.

AUTOMOTIVE SERVICE CENTERS (410)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
C	Good	Brick, block, good front, 30% or more sales area	Good store finish in sales, good garage finish in balance	Good store illumination, good restrooms	Space heaters	$840.02	$5.57	$78.04
	Average	Block, typical storefront, 20% – 30% sales area	Store finish in sales, garage finish in balance	Average store illumination and restrooms	Space heaters	675.12	4.48	62.72
	Low cost	Block, simple storefront, 15% – 25% finished sales area	Minimum store finish in sales, garage finish in balance	Minimum lighting, outlets and plumbing fixtures	Space heaters	543.37	3.61	50.48
D	Good	Siding, veneer, good storefront, 30% or more sales area	Good store finish in sales, good garage finish in balance	Good store illumination, good restrooms	Space heaters	774.79	5.14	71.98
	Average	Siding, storefront, 20% – 30% finished sales area	Store finish in sales, garage finish in balance	Average store illumination and restrooms	Space heaters	622.48	4.13	57.83
DPOLE	Low cost	15% – 25% finished sales area, storefront, steel on wood pole frame	Minimum store finish in sales, garage finish in balance	Minimum lighting, outlets and plumbing fixtures	Space heaters	453.92	3.01	42.17
S	Average	20% – 30% sales area, storefront, some trim, sandwich panels	Store finish in sales, garage finish in balance	Average store illumination and restrooms	Space heaters	616.88	4.09	57.31
	Low cost	Single wall, simple storefront, 15% – 25% finished sales area	Minimum store finish in sales, garage finish in balance	Minimum lighting, outlets and plumbing fixtures	Space heaters	494.18	3.28	45.91

SHOWROOMS❖ (303)

A-B	Average	Masonry, concrete or metal and glass, good ornamentation	Plaster, acoustic tile, terrazzo display floor, adequate office area	Good lighting and restrooms, some special fixtures	Warm and cool air (zoned)	$1,360.78	$ 9.03	$126.42
C	Excellent	Face brick or stone, good metal or concrete and glass panels	Plaster, good acoustic tile, good terrazzo, stone, rubber tile, carpet	Special lighting, good fixtures and plumbing throughout	Warm and cool air (zoned)	1,762.07	11.69	163.70
	Good	Brick, concrete, good storefront, good ornamentation	Plaster, acoustic tile, terrazzo display floor, good office area	Good display and office lighting, restrooms	Package A.C.	1,246.58	8.27	115.81
	Average	Brick, block, concrete, good storefront, some ornamentation	Plaster or drywall, acoustic tile, vinyl composition, office, sales cubicles	Store and office lighting, small restrooms	Package A.C.	902.45	5.99	83.84
	Low cost	Brick, block, tilt-up, simple storefront, low-cost entrance	Painted walls, few drywall partitions, asphalt tile	Adequate lighting, minimum plumbing	Forced air	621.94	4.13	57.78
D	Excellent	Face brick or stone veneer, good EIFS, metal and glass panels	Plaster, good acoustic tile, good terrazzo, stone, rubber tile, carpet	Special lighting, good fixtures and plumbing throughout	Warm and cool air (zoned)	1,689.09	11.21	156.92
	Good	Masonry veneer, best stucco or siding, good front and trim	Plaster, acoustic tile, terrazzo display floor, good office area	Good display and office lighting, restrooms	Package A.C.	1,180.92	7.84	109.71
	Average	Siding, veneer trim, storefront, some ornamentation	Plaster or drywall, acoustic tile, vinyl composition, office, sales cubicles	Store-type lighting, small restrooms	Package A.C.	847.02	5.62	78.69
	Low cost	Stucco or siding, simple front, low-cost entrance	Drywall, few partitions or extras	Adequate lighting, minimum plumbing	Forced air	575.87	3.82	53.50
DPOLE	Average	Pole frame, metal siding, storefront, some ornamentation	Fully lined and insulated, tile, vinyl composition, small office area	Store-type lighting, small restrooms	Package A.C.	775.22	5.14	72.02
	Low cost	Metal on pole frame, simple storefront, low-cost entrance	Some finish, few partitions, asphalt tile, few extras	Adequate lighting, minimum plumbing	Forced air	518.93	3.44	48.21
S	Good	Sandwich panels, good storefront, good ornamentation	Plaster, acoustic tile, terrazzo display floor, good office area	Good display and office lighting, restrooms	Package A.C.	1,187.05	7.88	110.28
	Average	Sandwich panels, storefront, some ornamentation	Plaster or drywall, acoustic tile, vinyl composition, small office area	Store-type lighting, small restrooms	Package A.C.	840.99	5.58	78.13
	Low cost	Single wall, simple storefront, low-cost entrance	Drywall, few partitions or extras	Adequate lighting, minimum plumbing	Forced air	565.11	3.75	52.50

❖For load-bearing parking roofs, add $5.15 per square foot ($55.43 per square meter).

Access ramps cost $18.25 – $32.45 per square foot ($196.44 – $349.29 per square meter).

MULTISTORY BUILDINGS – Add .5% (1/2%) for each story over three, above ground, to all base costs of the building, including basements, but excluding mezzanines.

SPRINKLERS – Sprinkler systems are not included. Costs should be added from Page 36.

AUTOMOTIVE LIFTS – Hoists are not included. See Page 32 or Section 64.

CANOPIES – Large entrance marquees or carport canopies generally cost 1/3 to 3/5 of the final base cost per square foot of the building, or they may be computed from the Segregated Costs, Section 44, or from Unit-in-Place Costs.

CALCULATOR METHOD

SERVICE (REPAIR) GARAGES (528)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
A-B	Average	Brick, reinforced concrete, good fenestration	Some plaster and glazed surfaces, offices, masonry partitions	*Good level of lighting, adequate plumbing	Space heaters	$ 757.57	$5.03	$70.38
C	Excellent	Steel or concrete frame, brick, decorative block or concrete panels	Some good offices and supply rooms, good fleet-municipal type	Good electrical, lighting and service outlets, good restrooms	Forced air	1,000.30	6.64	92.93
	Good	Steel, concrete or glulam frame, masonry curtain or bearing walls	Finished office, painted walls, some partitions	Adequate lighting and service outlets, adequate restrooms	Space heaters	703.64	4.67	65.37
	Average	Masonry bearing walls with pilasters, light trusses	Unfinished, small finished office area, some supply area	Adequate lighting and service outlets, small restroom	Space heaters	509.24	3.38	47.31
	Low cost	Light masonry bearing walls, light rafters	Unfinished, small partitioned office area, concrete floor	Minimum electrical and plumbing	Space heaters	370.50	2.46	34.42
D	Good	Wood frame, good siding, brick veneer or stucco and fenestration	Partially finished, finished office area, some partitions	Adequate lighting and service outlets, adequate restrooms	Space heaters	611.93	4.06	56.85
	Average	Light wood frame, siding or stucco	Unfinished, small finished office area, some supply area	Adequate lighting and service outlets, small restroom	Space heaters	448.32	2.98	41.65
	Low cost	Cheap frame, stucco or siding	Unfinished, small office area, concrete floor	Minimum lighting and plumbing	Space heaters	330.24	2.19	30.68
DPOLE	Average	Pole frame, metal siding, lined and insulated	Small finished office area, some supply area	Adequate lighting and service outlets, small restroom	Space heaters	385.57	2.56	35.82
	Low cost	Pole frame and truss, metal siding	Small partitioned office area, concrete floor, utility type	Minimum lighting and plumbing	Space heaters	282.12	1.87	26.21
S	Good	Sandwich panels or metal with interior finish	Partially finished, finished office area, some partitions	Adequate lighting and service outlets, adequate restrooms	Space heaters	597.08	3.96	55.47
	Average	Single wall with some interior finish	Unfinished, small finished office area, some supply area	Adequate lighting and service outlets, small restroom	Space heaters	431.64	2.86	40.10
	Low cost	Light, pre-engineered, utility-type building	Unfinished, small office area, concrete floor	Minimum lighting and plumbing	Space heaters	313.77	2.08	29.15

*For elevator costs, see bottom of Page 34.

SPRINKLERS – Sprinkler systems are not included. Costs should be added from Page 36.

SERVICE GARAGE SHEDS (526)

C	Good	Open front, block or low-cost brick, good roof	Unfinished, concrete floor, shop area and cabinets	Good lighting and outlets, adequate plumbing	Space heaters	$317.54	$2.11	$29.50
	Average	Open front, tilt-up, block, steel or wood truss, average cover	Unfinished, concrete or asphalt floor, some cabinets, work area	Adequate electrical and water service and outlets	None	225.40	1.50	20.94
	Low cost	End walls only, concrete block, shed or flat roof	Unfinished, concrete or asphalt floor	Adequate electrical and water service and outlets	None	170.39	1.13	15.83
DPOLE	Good	Open front, good metal siding on pole frame	Unfinished, concrete floor, shop area and cabinets	Good lighting and outlets, adequate plumbing	Space heaters	247.57	1.64	23.00
	Average	Open front, metal or board on light pole frame	Unfinished, concrete or asphalt floor, some cabinets, work area	Adequate electrical and water service and outlets	None	175.24	1.16	16.28
	Low cost	End walls only, low-cost siding on wood pole frame	Unfinished, concrete or asphalt floor	Adequate electrical and water service and outlets	None	134.55	.89	12.50
S	Good	Open front, good metal and steel frame	Unfinished, concrete floor, shop area and cabinets	Good lighting and outlets, adequate plumbing	Space heaters	276.20	1.83	25.66
	Average	Open front, enameled siding on light frame	Unfinished, concrete or asphalt floor, some cabinets, work area	Adequate electrical and water service and outlets	None	197.20	1.31	18.32
	Low cost	End walls only, low-cost siding on steel frame	Unfinished, concrete or asphalt floor	Adequate electrical and water service and outlets	None	151.45	1.01	14.07

NOTE: Use total length of walled sides as the perimeter in the floor area-perimeter table.
For service stations, see prefabricated building costs, Section 64.

HOISTS
Automotive and truck hoist costs can be found in Section 64, Page 3.

MUNICIPAL SERVICE GARAGES (527)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
C	Excellent	Good masonry, concrete, glazed tile, ornamentation, heavy frame	Plaster, acoustic tile, finished floors, good offices, shops, supply rooms	Many power outlets, good lighting and plumbing	Package A.C.	$1,558.41	$10.34	$144.78
	Good	Steel or concrete frame, brick, or concrete panels	Some good offices and interior finish, supply rooms and shops	Good electrical, lighting and service outlets, good restrooms	Package A.C.	1,110.09	7.37	103.13
	Average	Steel, concrete or glulam frame, masonry curtain or bearing walls	Finished office, painted walls, some partitions, supply areas and shops	Adequate lighting and service outlets, adequate restrooms	Forced air	758.65	5.03	70.48
D	Average	Stucco or brick veneer, some frame or bearing, finished interior	Finished office, some partitions, supply areas and shops	Adequate lighting and service outlets, adequate restrooms	Forced air	671.35	4.46	62.37
S	Excellent	Good sandwich panels, some ornamentation, heavy frame	Finished walls & floor, acoustic tile, good offices, shops, supply rooms	Many power outlets, good lighting and plumbing	Package A.C.	1,343.89	8.92	124.85
	Good	Good steel frame, siding and fenestration	Some good offices and interior finish, supply rooms and shops	Good electrical, lighting and service outlets, good restrooms	Package A.C.	970.59	6.44	90.17
	Average	Sandwich panels or metal with interior finish	Partially finished, finished office area, some partitions, supply and shop areas	Adequate lighting and service outlets, adequate restrooms	Forced air	668.44	4.44	62.10

MINI-LUBE GARAGES (423)

C	Excellent	Best block, entry, 20% or more finished sales area	Good store type finish in sales, good lobby, waiting room, restrooms	Good retail illumination, good garage in balance	Package A.C.	$1,511.91	$10.03	$140.46
	Good	Good ornamental block and parapet, storefront lobby	Good drywall, acoustic tile, pavers, VCT, carpet, good office/waiting room	Good lighting and plumbing, service outlets	Forced air	1,164.99	7.73	108.23
	Average	Masonry bearing walls or frame, roll-up doors	Painted walls, slab, some partitions, floor and ceiling finish, waiting area	Adequate lighting and plumbing, service outlets	Space heaters	900.19	5.97	83.63
	Low cost	Block, cheap brick, tilt-up, light construction	Painted wall, slab, few partitions, small office area	Minimum lighting and plumbing, service outlets	Space heaters	711.82	4.72	66.13
D	Excellent	Best masonry veneer, entry, 20% or more finished sales area	Good store type finish in sales, good lobby, waiting room, restrooms	Good retail illumination, good garage in balance	Package A.C.	1,438.07	9.54	133.60
	Good	Good masonry veneer, EIFS, decorative parapet, storefront lobby	Good drywall, acoustic tile, pavers, VCT, carpet, good office/waiting room	Good lighting and plumbing, service outlets	Forced air	1,100.19	7.30	102.21
	Average	Frame and stucco, siding, masonry veneer, some trim, roll-up doors	Some gypsum walls and ceiling, slab, some finished floor, waiting area	Adequate lighting and plumbing, service outlets	Space heaters	844.01	5.60	78.41
	Low cost	Stucco or siding on wood or steel	Some gypsum walls and ceiling, slab, small office area	Minimum lighting and plumbing, service outlets	Space heaters	663.49	4.40	61.64
S	Average	Pre-engineered, steel studs or frame, good panels, roll-up doors	Some gypsum walls, acoustic tile, slab, some finished floor, waiting area	Adequate lighting and plumbing, service outlets	Space heaters	838.52	5.56	77.90
	Low cost	Pre-engineered frame, metal siding	Some gypsum walls, acoustic tile, slab, small office area	Minimum lighting and plumbing, service outlets	Space heaters	664.14	4.41	61.70
CDS	Average basement	Reinforced concrete or block, unfinished interior	Unfinished, storage areas, some partitions, service walkways	Minimum lighting and plumbing, drains	None	378.57	2.51	35.17

NOTE: Walk-in service pits cost $2,050 to $4,350 per bay. For second-floor office-apartments, see Section 12. For storage mezzanines, see Page 27. Small double-walled oil container tanks cost $6.10 to $10.65 per gallon. For lube equipment, see Sections 64 and 65.

PARKING BASEMENTS

A-B	Average	Unfinished concrete, waterproofed walls	Unfinished, concrete floor, striped	Minimum lighting, adequate drains	Ventilation	$529.91	$3.52	$50.87
CDS†	Average	Unfinished concrete, waterproofed	Plaster or drywall ceiling, concrete floor, striped	Minimum lighting, adequate drains	Ventilation	356.07	2.36	33.30
	Low-cost subterranean	Partially exposed, some ornamentation, unfinished interior	Finished ceiling, concrete slab, stripping	Minimum lighting, adequate drains	None	308.07	2.04	28.81

†For fire-resistant Type I basements, with concrete slab separation under C, D or S units, add $5.15 per square foot ($55.43 per square meter). Where utilized as courtyard deck on topside, add $10.50 per square foot ($113.02 per square meter).

MULTISTORY BUILDINGS – Add .5% (1/2%) for each story, over three aboveground, to all base costs of the building, including basements but excluding mezzanines.

SPRINKLERS - Systems are not included. Costs should be added from Page 36.

CALCULATOR METHOD

PARKING (PARKADE) STRUCTURES (345)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING, PLUMBING AND MECHANICAL	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
A	Good	Partial walls, brick or concrete, ornamentation	Unfinished, except good office and service area	*Reading-level lighting, rest-rooms and service plumbing	None	$659.40	$4.38	$61.26
	Average	Partial walls, brick, block, concrete, little trim	Unfinished, small office and service area	*Low-level lighting, drains, minimum restroom for office	None	506.66	3.36	47.07
B	Good	Partial walls, brick or concrete, ornamentation	Unfinished, except good office and service area	*Reading-level lighting, rest-rooms and service plumbing	None	620.22	4.12	57.62
	Average	Partial walls, brick, block, concrete, plain finish	Unfinished, small office and service area	*Low-level lighting, drains, minimum restroom for office	None	481.37	3.19	44.72
	Low cost	Low parapets, precast frame and floors, minimum finish	Unfinished, minimum extras	*Minimum lighting and plumbing	None	375.34	2.49	34.87
S	Low cost	Demountable type, exposed steel frame	Unfinished, some masonry shear walls, minimum extras	Low-level lighting, drains, minimum personnel plumbing	None	353.60	2.35	32.85
	Cheap	Demountable type, exposed steel frame, cable rails	Unfinished, no extras	Minimum lighting, drains only	None	277.50	1.84	25.78

*ELEVATORS

Parking structure buildings with elevators included in the base costs are marked with an asterisk (*). If none are found, deduct the following from the base costs for buildings on this page which are so marked. For buildings not marked, add costs from Page 36.

	Sq. M.	Sq. Ft.		Sq. M.	Sq. Ft.		Sq. M.	Sq. Ft.
Good	$24.22	$2.25	Average . .	$16.15	$1.50	Low Cost . .	$11.84	$1.10

NOTE: Cost per space for surface parking, see Section 66. Basement parking, see Section 11.

GENERAL INFORMATION

The following are based on a cost per space and average area per space. The median number of stories is 4, with 5 levels of parking and a range from 1 to 9 stories.

AREA PER SPACE						COST PER SPACE		
Low		Average		High		Low	Average	High
Sq. M.	Sq. Ft.	Sq. M.	Sq. Ft.	Sq. M.	Sq. Ft.			
28.8	310	32.5	350	40.9	440	$8,800	$12,900	$19,050

UNDERGROUND PARKING STRUCTURES (388)

A-B	Parking Underground	Unfinished concrete, waterproofed walls and load-bearing roof	Unfinished, some office and service areas	Good lighting, restrooms and service plumbing	Package A.C.	$842.71	$5.59	$78.29

STORAGE GARAGES (326)

A-B	Average	Brick, reinforced concrete, little ornamentation	Plaster or drywall, masonry partitions, small office and service area	*Low lighting levels, minimum plumbing	Space heaters	$671.89	$4.46	$62.42
C	Average	Brick, block, tilt-up, plain facade	Unfinished, small partitioned office area, concrete floors	Low-level lighting, minimum plumbing	Space heaters	507.41	3.37	47.14
C_{MILL}	Average	Mill-type frame, brick, plain facade	Painted walls, mill-type floors, masonry partitions	*Minimum electrical and plumbing	Space heaters	598.59	3.97	55.61
D	Average	Wood frame, stucco or siding, plain facade	Unfinished, small partitioned office area, concrete floors	Minimum electrical and plumbing	Space heaters	454.35	3.02	42.21
S	Average	Single-wall construction, enameled steel or aluminum	Unfinished, small partitioned office area, concrete floors	Low-level lighting, minimum plumbing	Space heaters	438.63	2.91	40.75

NOTE: For residential garages, see Section 12. Light maintenance or warm storage, repair shops, see Section 17. Finished municipal garages, see volunteer fire stations, Section 15.

MULTISTORY BUILDINGS – Add .5% (1/2%) for each story over three, above ground, to all base costs of the building, including basements, but excluding mezzanines.

SPRINKLERS – Sprinkler systems are not included. Costs should be added from Page 36.

PEDESTRIAN BRIDGES – See Section 66 for open connecting walkways. For enclosed skyways and pedestrian tunnels, see Section 15.

SURFACE PARKING LOTS – See Section 66.

***ELEVATORS –** Storage and repair garage base costs which include elevators are marked with an asterisk (*). If the subject building has no elevators, deduct the following from the base costs for buildings on this page, which are so marked. For buildings not marked or for basement stops, add costs from Page 36.

Average: **Square Meter** . . . . . .$18.84 **Square Foot** $1.75

UNDERBUILDING PARKING – See Section 15 for on- and above-grade-level parking.

PARKING LIFTS – See Section 58.

PARKING KIOSKS – See Section 64.

ALTERNATE METHOD

This method is presented as an alternative to the normal calculator method, which includes average office/shop space commensurate with the occupancy type and quality level. Listed below are typical office-finish costs based on actual office space, which can be added to a basic shell cost for a complete building cost. For two-story offices, add mezzanine structure cost, which includes a weighting for additional fenestration and exterior trim.

LIGHT INDUSTRIAL/WAREHOUSE SHELL BUILDINGS (454)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING AND PLUMBING	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
C	Good	Good frame and wall panels, elastomeric roof, good fenestration	6" – 7" hardened slab, painted walls	Good fluorescent or high bay factory lighting and utilities	None	$455.32	$3.02	$42.30
	Average	Light frame or bearing walls, block or tilt-up, some trim, storefront, windows	5" – 6" slab, sealer, exposed insulation	Adequate general warehouse lighting and utilities	None	328.09	2.18	30.48
	Low cost	Light block or tilt-up, built-up cover, panelized roof, small storefront entry	Light concrete slab, no interior paint	Minimum single-tube fluorescent or high bay (18 f.c.), sewer and water service	None	236.70	1.57	21.99
	Cheap	Light tilt-up, panelized roof, small entry	Unfinished, adequate slab	Minimum lighting and rough plumbing	None	190.74	1.27	17.72
D	Good	Good frame with stucco or siding, some ornamentation	6" – 7" hardened slab, painted walls	Good fluorescent or high bay factory lighting and utilities	None	415.81	2.76	38.63
	Average	Wood studs, stucco, wood rafters and sheathing, some trim	5" – 6" slab, sealer, exposed insulation	Adequate general warehouse lighting and utilities	None	297.30	1.97	27.62
D_{POLE}	Average	Pole frame, metal siding, lined and insulated, some trim, storefront, windows	5" – 6" slab, sealer, exposed insulation	Adequate general warehouse lighting and utilities	None	239.71	1.59	22.27
	Low cost	Pole frame, metal siding, little fenestration, exposed insulation	Light concrete slab	Minimum single-tube fluorescent or high bay (18 f.c.), sewer and water service	None	172.12	1.14	15.99
	Cheap	Pole frame, light metal utility siding, minimal openings, no storefront	Unfinished, light utility slab, exposed frame	Minimum utility lighting and rough plumbing	None	133.80	.89	12.43
S	Good	Good steel frame, heavy metal siding, sandwich panels, good fenestration, trim	6" – 7" hardened slab, some finished wainscot or liner	Good fluorescent or high bay factory lighting and utilities	None	409.14	2.72	38.01
	Average	Steel frame, siding or sandwich panels, some trim, storefront entry, windows	5" – 6" slab, sealer, exposed insulation	Adequate general warehouse lighting and utilities	None	290.20	1.93	26.96
	Low cost	Light steel frame, metal siding, little fenestration, exposed insulation	Light concrete slab, no interior liner	Minimum single-tube fluorescent or high bay (18 f.c.), sewer and water service	None	206.02	1.37	19.14
	Cheap	Light pre-eng. frame, light metal utility siding, minimal openings, no storefront	Unfinished, light utility slab, exposed frame	Minimum utility or high bay lighting and rough plumbing	None	156.19	1.04	14.51

NOTE: The base wall height is 14 feet (4.27 meters). Add or deduct 2% per foot. For draft curtains, add $1.30 to $1.70 per square foot ($13.99 to $18.30 per square meter) of curtain. Add for heat from Page 36. The cheap industrial utility shell is comparable to the shed structures found in Section 17, except for slightly heavier commercial frame, fenestration and trim. For greater detail, see Section 64. Cold storage insulation can be added from Section 44 or 58. To convert illumination in foot candles (f.c.) to lumens per square meter, multiply by 10.764.

INDUSTRIAL, INTERIOR OFFICE SPACE (994)

(SQUARE FOOT OF OFFICE FINISH)

TYPE	INTERIOR FINISH	LIGHTING AND PLUMBING	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
Excellent	Good executive suites, cafeteria, glazed finishes, hardwoods	Good fixtures, kitchen, some extras	Heat pump	$1,236.57	$8.21	$114.88
Good	Good plaster, partitions, paneling, suspended acoustic, carpet, tile or vinyl, good meeting or showroom space	Good fluorescent lighting, good restrooms and fixtures, some tile	Package A.C.	788.25	5.23	73.23
Average	Average drywall or plaster, acoustic tile, vinyl composition or carpet, adequate shelving and counters	Adequate lighting and outlets, average restrooms and fixtures	Forced Air	479.97	3.19	44.59
Low cost	Low-cost partitions, paint, suspended ceiling, vinyl composition, minimal counters and shelving	Minimum lighting and plumbing, few extras, small restroom	Electric wall heaters	287.72	1.91	26.73
Good office mezzanine structure	Metal structure and concrete deck over offices, stairs and railings	Included in office cost	Included in office cost	268.88	-----	24.98
Average office mezzanine structure	Wood structure and deck over offices, stairs and railings	Included in office cost	Included in office cost	212.05	-----	19.70

NOTE: The base office wall height is 8' (2.44 meter). Add or deduct 2% for each foot (.305 meter) of deviation. Partition density can cause the costs to vary as much as plus or minus 30%. For shop plumbing, including enclosure, add $3,500 plus $2,750 per fixture. For bay height partition walls, per square foot of wall: frame, one-hour construction at $5.60 to $11.45 for three-hour ($60.28 to $123.25 per square meter); masonry costs $8.10 to $9.35 per square foot ($87.19 to $100.64 per square meter) of wall area. For prefabricated modular offices and mezzanines, see Section 64.

GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES REFINEMENTS

On this page and the next are means of making adjustments to the base costs given in this section. The component parts which are not defined, such as the roof or foundation, are considered to be commensurate with the general quality of the building. If further refinements are required or the construction is unusual, either price entirely or adjust the base costs by the Segregated Cost System, Section 44. Special items which should be added to the total cost may be added from the Unit-in-Place cost sections.

HEATING AND COOLING

These costs are averages of the total cost of the entire heating or cooling installation, including its prorated share of the contractor's overhead and profit and the architect's fees. If the heating found in the building being appraised is different from that indicated for the base being used, take the difference between the costs of the two and add to or subtract from the base square foot cost. If a cubic foot cost is used, use one-fourteenth (1/14) the difference shown to adjust the base cubic foot cost. All of the heating costs included in the base costs are those listed under "Moderate Climate." For specific system costs not found below, see Section 44 or 53. For laminar flow clean rooms, see Section 44.

COOLING ONLY

Cooling costs in industrial buildings are dependent on the summer heat load, types of walls and roof, type of manufacturing, number of partitions, and traffic in and out. In general, the following figures will serve as a guide for picking the proper cost of separate cooling. For cold-storage refrigeration, see Page 24 or Section 58 for greater detail.

TYPE	SQUARE METER COSTS			SQUARE FOOT COSTS		
	Mild Climate	Moderate Climate	Extreme Climate	Mild Climate	Moderate Climate	Extreme Climate
Central refrigeration with ducts and zone controls	$48.98	$71.58	$104.95	$4.55	$6.65	$9.75
Package refrig. (short ductwork)	34.98	49.51	69.97	3.25	4.60	6.50
Central evaporative (with ducts)	25.30	33.37	43.59	2.35	3.10	4.05
Package refrigeration	$1,420 to $1,870 per ton of rated capacity.					
Evaporative coolers	$200 to $330 per thousand CFM of rated capacity.					

ELEVATORS

Lump sum cost per elevator plus the cost per stop or landing, including the ground level. Use the cost per stop for basement and mezzanine stops. See Section 58 for more detailed costs, for glass observation elevators and for personnel lift costs.

TYPE	COST RANGE
Passenger, 2- to 3-story	$ 37,100 – $ 60,550
4-story and over	64,450 – 97,050
add cost per stop	5,350 – 8,150
Freight, base cost, 2- to 3-story	28,650 – 66,100
4-story and over	56,300 – 113,600
add, cost per stop, manual doors	7,250 – 9,400
power doors	12,600 – 16,350
Escalators, each stairway	150,050 – 183,950
Vertical wheelchair lifts, each	9,700 – 20,150

HEATING ONLY

TYPE	SQUARE METER COSTS			SQUARE FOOT COSTS		
	Mild Climate	Moderate Climate	Extreme Climate	Mild Climate	Moderate Climate	Extreme Climate
Electric, baseboard or cable	$25.83	$38.21	$ 56.51	$2.40	$3.55	$ 5.25
radiant panel	24.76	31.75	41.44	2.30	2.95	3.85
Electric wall heaters (incl FWA)	13.46	17.22	23.14	1.25	1.60	2.15
Forced-air furnace	29.60	43.06	64.05	2.75	4.00	5.95
Hot water, baseboard/convector	47.36	73.20	113.02	4.40	6.80	10.50
radiant floor or ceiling	46.29	74.81	121.10	4.30	6.95	11.25
Space heaters, with fan	11.84	19.38	32.29	1.10	1.80	3.00
radiant	13.99	22.60	36.06	1.30	2.10	3.35
Steam (incl. boiler)	45.75	67.28	98.49	4.25	6.25	9.15
(without boiler)	36.60	55.97	85.57	3.40	5.20	7.95
Wall or floor furnaces	13.99	18.84	25.83	1.30	1.75	2.40

HEATING AND COOLING – EXCEPT LABORATORY BUILDINGS

Package A.C. (short ductwork)	$ 54.36	$ 82.34	$124.32	$ 5.05	$ 7.65	$11.55
Warm and cool air (zoned)	71.58	110.33	170.07	6.65	10.25	15.80
Hot and chilled water (zoned)	123.79	188.91	286.86	11.50	17.55	26.65
Heat-pump system	58.13	95.26	156.08	5.40	8.85	14.50
add for grnd. loop heat source	15.07	26.91	46.29	1.40	2.50	4.30
Individual thru-wall heat pumps	25.30	40.37	65.66	2.35	3.75	6.10

Small individual heat pumps cost $1,375 to $1,850 per ton of rated capacity.

VENTILATION ONLY

Ventilation (blowers and ducts) or smoke removal system	$8.61	$12.38	$18.30	$ .80	$1.15	$1.70

SPRINKLERS

Sprinkler costs include all costs for the system and supply lines, but not tanks, towers, or high-pressure pumps. The square foot costs listed are based on the total area of sprinkler system installation on a single main connection, including its prorated share of the contractor's overhead and profit and the architect's fees. The approximate low-end density is .33/3,000 with the high end of the range at .60/3,000 sprinkler density. For a more specific cost, see Section 44 (wet, ranks 1-3; dry, ranks 2-4) or Section 53. Sprinklers should not be modified for size or shape. For extra-hazard occupancies, add 15% to the costs below. For supplemental in-rack systems, add 30% to 100% per level. For Early Suppression Fast Response system, add $ .46 ($4.95 per Square Meter) plus $ .91 ($9.80 per Square Meter) to $1.35 ($14.53 per Square Meter) for pumps.

COVERAGE	WET SYSTEMS		DRY SYSTEMS	
Square Feet (Sq. M.)	Sq. M.	Sq. Ft.	Sq. M.	Sq. Ft.
under 10,000 (929)	$26.27 – $45.91	$2.44 – $4.27	$34.72 – $60.76	$3.23 – $5.64
10,000 to 100,000	19.99 – 33.58	1.86 – 3.12	25.92 – 43.51	2.41 – 4.04
over 100,000 (9,290)	14.62 – 23.18	1.36 – 2.15	18.39 – 29.12	1.71 – 2.71

GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

FLOOR AREA – PERIMETER MULTIPLIERS

AVERAGE FLOOR AREA		M.	AVERAGE PERIMETER																M.	AVERAGE FLOOR AREA	
Sq.M.	Sq. Ft.	FT.	30	38	46	53	61	76	91	107	122	137	152	183	213	244	274	305	FT.	Sq. Ft.	Sq. M.
93	1,000		1.252	1.360	1.468	1.576	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----		1,000	93
139	1,500		1.112	1.182	1.252	1.323	1.395	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----		1,500	139
186	2,000		-----	1.095	1.147	1.199	1.252	1.360	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----		2,000	186
232	2,500		-----	-----	1.083	1.125	1.168	1.252	1.340	1.430	-----	-----	-----	-----	-----	-----	-----	-----		2,500	232
279	3,000		-----	-----	-----	1.077	1.112	1.182	1.252	1.323	1.395	-----	-----	-----	-----	-----	-----	-----		3,000	279
372	4,000		-----	-----	-----	1.013	1.040	1.094	1.147	1.199	1.252	1.306	-----	-----	-----	-----	-----	-----		4,000	372
465	5,000		-----	-----	-----	-----	.996	1.040	1.083	1.125	1.168	1.210	1.252	-----	-----	-----	-----	-----		5,000	465
557	6,000		-----	-----	-----	-----	-----	1.004	1.040	1.077	1.112	1.147	1.182	1.252	-----	-----	-----	-----		6,000	557
650	7,000		-----	-----	-----	-----	-----	-----	1.008	1.040	1.071	1.102	1.132	1.192	1.252	-----	-----	-----		7,000	650
743	8,000		-----	-----	-----	-----	-----	-----	.984	1.013	1.040	1.068	1.094	1.147	1.199	1.252	-----	-----		8,000	743
929	10,000		-----	-----	-----	-----	-----	-----	-----	.972	.996	1.019	1.040	1.083	1.125	1.168	1.210	-----		10,000	929
1,115	12,000		-----	-----	-----	-----	-----	-----	-----	-----	.965	.984	1.003	1.040	1.077	1.112	1.147	1.182		12,000	1,115
1,301	14,000		-----	-----	-----	-----	-----	-----	-----	-----	.945	.961	.977	1.008	1.040	1.071	1.102	1.132		14,000	1,301
1,486	16,000		-----	-----	-----	-----	-----	-----	-----	-----	-----	.943	.957	.984	1.013	1.040	1.068	1.094		16,000	1,486
1,672	18,000		-----	-----	-----	-----	-----	-----	-----	-----	-----	.929	.942	.967	.991	1.016	1.040	1.065		18,000	1,672
1,858	20,000		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	.926	.949	.972	.996	1.019	1.040		20,000	1,858
2,323	25,000		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	.907	.924	.942	.959	.977	.996		25,000	2,323
2,787	30,000		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	.907	.921	.935	.949	.965		30,000	2,787
3,252	35,000		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	.896	.907	.919	.932	.945		35,000	3,252
3,716	40,000		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	.899	.907	.916	.926		40,000	3,716
4,181	45,000		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	.898	.907	.916		45,000	4,181
4,645	50,000		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	.891	.898	.907		50,000	4,645

AVERAGE FLOOR AREA		M.	AVERAGE PERIMETER																M.	AVERAGE FLOOR AREA	
Sq.M.	Sq. Ft.	FT.	274	305	335	366	396	427	457	488	518	549	579	610	671	731	792	914	FT.	Sq. Ft.	Sq. M.
1,858	20,000		1.019	1.040	1.062	1.083	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----		20,000	1,858
2,323	25,000		.977	.996	1.015	1.032	1.049	1.066	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----		25,000	2,323
2,787	30,000		.949	.965	.980	.995	1.010	1.025	1.040	-----	-----	-----	-----	-----	-----	-----	-----	-----		30,000	2,787
3,252	35,000		.932	.945	.957	.969	.982	.995	1.008	1.021	-----	-----	-----	-----	-----	-----	-----	-----		35,000	3,252
3,716	40,000		.916	.926	.937	.949	.961	.972	.984	.995	1.007	1.019	-----	-----	-----	-----	-----	-----		40,000	3,716
4,181	45,000		.907	.916	.926	.935	.945	.955	.965	.975	.985	.995	1.005	1.015	-----	-----	-----	-----		45,000	4,181
4,645	50,000		.898	.907	.916	.924	.933	.942	.950	.959	.968	.977	.986	.996	1.015	-----	-----	-----		50,000	4,645
5,574	60,000		.889	.895	.901	.907	.914	.921	.928	.935	.942	.949	.957	.965	.980	.995	-----	-----		60,000	5,574
6,503	70,000		.877	.884	.890	.896	.902	.907	.913	.919	.925	.932	.939	.945	.957	.969	.982	-----		70,000	6,503
7,432	80,000		.869	.875	.881	.887	.893	.898	.903	.907	.911	.916	.921	.926	.937	.949	.961	.984		80,000	7,432
9,290	100,000		-----	.863	.868	.872	.877	.882	.887	.891	.895	.899	.903	.907	.916	.924	.933	.950		100,000	9,290
11,148	120,000		-----	.856	.859	.863	.867	.871	.875	.879	.883	.887	.891	.895	.901	.907	.914	.928		120,000	11,148
13,006	140,000		-----	.851	.854	.857	.860	.863	.867	.871	.874	.877	.880	.884	.890	.896	.902	.913		140,000	13,006
14,864	160,000		-----	-----	.850	.853	.855	.858	.860	.863	.866	.869	.872	.875	.881	.887	.893	.903		160,000	14,864
16,722	180,000		-----	-----	.846	.849	.851	.854	.856	.858	.860	.863	.866	.869	.874	.879	.884	.895		180,000	16,722
18,580	200,000		-----	-----	-----	.846	.848	.850	.853	.855	.857	.859	.861	.863	.868	.873	.877	.887		200,000	18,580
20,903	225,000		-----	-----	-----	-----	.845	.847	.849	.851	.853	.855	.856	.858	.862	.867	.871	.879		225,000	20,903
23,226	250,000		-----	-----	-----	-----	.842	.844	.846	.848	.849	.851	.853	.855	.858	.862	.866	.873		250,000	23,226
25,548	275,000		-----	-----	-----	-----	.839	.841	.843	.845	.847	.848	.850	.852	.855	.858	.862	.868		275,000	25,548
27,871	300,000		-----	-----	-----	-----	-----	.839	.841	.842	.844	.846	.847	.849	.852	.855	.857	.863		300,000	27,871
32,516	350,000		-----	-----	-----	-----	-----	.835	.836	.839	.840	.841	.843	.845	.847	.850	.853	.857		350,000	32,516
37,161	400,000		-----	-----	-----	-----	-----	-----	-----	.835	.836	.838	.840	.841	.843	.846	.848	.853		400,000	37,161
46,451	500,000		-----	-----	-----	-----	-----	-----	-----	.831	.832	.833	.834	.835	.838	.840	.842	.846		500,000	46,451

GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

FLOOR AREA – PERIMETER MULTIPLIERS

AVERAGE FLOOR AREA		M.	AVERAGE PERIMETER														M.	AVERAGE FLOOR AREA	
Sq.M.	Sq. Ft.	FT.	610	671	731	792	914	1067	1219	1372	1524	1676	1829	1981	2133	2286	2438	FT.	Sq. Ft.	Sq. M.
27,871	300,000		.849	.852	.855	.857	.863	.872	.880	-----	-----	-----	-----	-----	-----	-----	-----		300,000	27,871
32,516	350,000		.845	.847	.850	.853	.857	.863	.871	-----	-----	-----	-----	-----	-----	-----	-----		350,000	32,516
37,161	400,000		.841	.843	.846	.848	.853	.858	.863	.870	.875	-----	-----	-----	-----	-----	-----		400,000	37,161
46,451	500,000		.835	.838	.840	.842	.846	.850	.855	.859	.863	.868	.873	-----	-----	-----	-----		500,000	46,451
55,741	600,000		-----	-----	-----	.837	.841	.845	.849	.853	.856	.859	.863	.867	-----	-----	-----		600,000	55,741
65,032	700,000		-----	-----	-----	-----	.836	.841	.845	.848	.851	.854	.857	.860	.863	.867	-----		700,000	65,032
74,322	800,000		-----	-----	-----	-----	.834	.837	.841	.844	.847	.850	.853	.856	.858	.860	.863		800,000	74,322
83,612	900,000		-----	-----	-----	-----	.832	.835	.838	.841	.843	.847	.849	.851	.854	.856	.858		900,000	83,612
92,902	1,000,000		-----	-----	-----	------	-----	.832	.835	.838	.841	.843	.846	.848	.850	.853	.855		1,000,000	92,902
102,192	1,100,000		-----	-----	-----	-----	-----	.831	.833	.835	.839	.841	.843	.846	.848	.850	.852		1,100,000	102,192
111,483	1,200,000		-----	-----	-----	-----	-----	-----	.832	.834	.836	.839	.841	.843	.845	.847	.849		1,200,000	111,483
120,773	1,300,000		-----	-----	-----	-----	-----	-----	-----	.832	.834	.836	.839	.841	.843	.845	.847		1,300,000	120,773
130,063	1,400,000		-----	-----	-----	-----	-----	-----	-----	.831	.833	.835	.836	.839	.841	.843	.845		1,400,000	130,063
139,353	1,500,000		-----	-----	-----	-----	-----	-----	-----	.830	.832	.833	.835	.837	.839	.841	.843		1,500,000	139,353

NOTE: For larger buildings, enter the table by taking half the area and half the perimeter.

STORY HEIGHT MULTIPLIERS

Multiply the base cost by the following multipliers for any variation in average story height from the base of 14 feet (4.27 meters). For extremely high-pitched roofs (see Section 10), use the height of the eaves plus one-half the height from the eaves to the ridge as the effective height.

In some buildings it is better to compute the total volume and divide by the total square feet of floor area to get an effective height to use.

AVERAGE WALL HEIGHT		SQUARE FOOT OR SQUARE METER MULTIPLIER	CUBIC FOOT MULT.	AVERAGE WALL HEIGHT		SQUARE FOOT OR SQUARE METER MULTIPLIER	CUBIC FOOT MULT.	AVERAGE WALL HEIGHT		SQUARE FOOT OR SQUARE METER MULTIPLIER	CUBIC FOOT MULT.
(M.)	(FT.)			(M.)	(FT.)			(M.)	(FT.)		
2.44	8	.885	1.567	7.31	24	1.231	.718	16.76	55	2.075	.528
3.05	10	.921	1.289	7.92	26	1.281	.690	18.29	60	2.225	.519
3.66	12	.960	1.120	8.53	28	1.331	.666	21.33	70	2.530	.506
4.27	14	1.000 (base)	1.000	9.14	30	1.382	.645	24.38	80	2.845	.498
4.88	16	1.041	.911	10.67	35	1.515	.606	27.43	90	3.161	.492
5.49	18	1.086	.844	12.19	40	1.650	.577	30.48	100	3.461	.485
6.10	20	1.133	.794	13.72	45	1.788	.556	33.52	110	3.738	.476
6.71	22	1.181	.752	15.24	50	1.930	.540	36.57	120	3.977	.464

GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

MISCELLANEOUS BUILDINGS

The following table contains normal cost ranges and averages, exclusive of extremes, of various industrial-type buildings. Costs do not include elevators, but do include other fixed equipment. Costs are subject to the standard adjustments and refinements for the Calculator Method. The average building costs include the average cost for heating and/or cooling.

TYPE	DESCRIPTION	CLASS	COST RANGE per Square Meter	COST RANGE per Square Foot	AVERAGE COST Heating and/or Cooling per Sq. M.	AVERAGE COST Heating and/or Cooling per Sq.Ft.	AVERAGE COST per Sq. M.	AVERAGE COST per Cu. Ft.	AVERAGE COST per Sq. Ft.
Bakery Plants	Central baking production facility including a small retail area, but excluding all baking and shipping equipment.	C, D and S	$ 602.78 – $ 958.00	**$ 56.00 – $ 89.00**	$110.33	**$10.25**	$ 753.48	$ 5.00	**$ 70.00**
Bottling Plants	Central bottling facility including storage and distribution operations, but excluding all equipment.	C, D and S	602.78 – 990.29	**56.00 – 92.00**	75.89	**7.05**	764.24	5.07	**71.00**
Cannery Plants	Large processing and canning facility for food or other perishable items including storage and distribution, but excluding all equipment.	C, D and S	484.38 – 850.36	**45.00 – 79.00**	66.74	**6.20**	645.84	4.29	**60.00**
Control Towers	Air traffic control towers for major airport facilities.	A and B	3,659.76 – 6,253.88	**340.00 – 581.00**	32.83	**3.05**	4,746.92	31.50	**441.00**
Laundry Plants	Central laundry and dry cleaning plants excluding all equipment.	C, D and S	548.96 – 1,054.87	**51.00 – 98.00**	174.92	**16.25**	678.13	4.50	**63.00**
Mechanical Buildings	Small central utilities or boiler room buildings including electrical and plumbing necessary for operation, but excluding all equipment, chimneys or stacks.	C, D and S	387.50 – 1,291.68	**36.00 – 120.00**	-----	**-----**	570.49	3.79	**53.00**
Recycling Facilities	Waste transfer and recycling buildings with tipping floor and small office, excluding equipment.	C, D and S	505.91 – 850.36	**47.00 – 79.00**	22.07	**2.05**	602.78	4.00	**56.00**
Sound Stages	Large production sound stages including standard lighting and power, but excluding all production support buildings and equipment.	C, D and S	925.70 – 1,420.85	**86.00 – 132.00**	156.08	**14.50**	1,140.98	7.57	**106.00**
Telephone Buildings	Small central offices including conduit and cable vaults but excluding all equipment and telephone wiring. Typically, a small switching building less than 1,000 square feet would represent the high-end of the cost range with the average exchange building being around 5,000 square feet.	A and B C, D and S	1,367.03 – 2,432.66 925.70 – 2,088.22	**127.00 – 226.00** **86.00 – 194.00**	293.32 207.21	**27.25** **19.25**	1,829.88 1,388.56	12.14 9.21	**170.00** **129.00**

GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

MISCELLANEOUS INDUSTRIAL COSTS

The following "rules of thumb" should not be used for actual appraisals, but should be considered rough budgeting guides and checks only. The costs are, in some cases, based on one or only a few construction projects and may be trended from prior values where no new costs are available. They are presented here in conformity with our policy of furnishing all possible information to the users of the *Marshall Valuation Service*, with the knowledge that they will use the data with consideration for its probable degree of accuracy. All costs have been converted to the Section 14 base. Current Cost and Local Multipliers should be used for adjustments.

COMPLETE INDUSTRIAL PLANTS

The following costs include all costs of plant and equipment when ready for operation. The capacity listed for the various plants is the rated capacity.

TYPE OF PLANT	COST
Asphalt plants	$6,200 to $9,300 per ton per hour capacity
Cement plants	$195 to $330 per metric ton per year capacity
Lime plants	$37,300 to $44,100 per metric ton per day capacity
Breweries	$101.00 per barrel of annual capacity
Generating plants:	
Cool water gasifier power	$1,900 to $2,700 per KW
Fossil fuel power (steam-electric)	$975 to $1,925 per KW
Geothermal power	$700 to $900 per KW
Hydropower	$1,600 to $5,000 per KW
Natural gas, combined cycle	$500 to $900 per KW
Nuclear power	$2,450 to $5,675 per KW
Mass-burn trash plants	$128,500 to $224,300 per ton per day capacity
Sewage treatment plants:	
Small, steel, packaged, 1K – 5K GPD	$13.20 to $21.25 per gal. per day capacity
fiberglass, batch, 2K – 12K GPD	$4.80 to $6.75 per gal. per day capacity
Medium, steel or concrete, 15K – 500K GPD	$3.90 to $8.05 per gal. per day capacity
Large, municipal, 1M – 5M GPD	$3.55 to $7.40 per gal. per day capacity
Water treatment plants:	
Small, 200K – 500K GPD	$5.80 to $10.45 per gal. per day capacity
Medium, 750K – 1M GPD	$3.95 to $4.70 per gal. per day capacity
Large, 2M – 10M GPD	$1.20 to $2.85 per gal. per day capacity

INDUSTRIAL PLANTS (EQUIPMENT ONLY)

The following costs include all costs of equipment when ready for operation. The capacity listed for the various plants is the rated capacity.

TYPE OF PLANT	COST
Bottling lines	$5,725 to $11,625 per BPM (bottles per minute) of capacity
Canning lines	$100 to $175 per CPH (cans per hour) of capacity
Cogeneration equipment :	
Large (up to 2,000 KW)	$2,800 to $3,800 per KW
Small (up to 1,000 KW)	$1,675 to $2,250 per KW
Packaged (150 to 750 KW)	$775 to $1,150 per KW
Wind power turbine	$2,425 to $5,650 per KW
Gas wells (complete, on shore)	$71 to $191 per foot of depth
Methane gas wells	$81 to $139 per foot of depth
Oil wells (complete, on shore)	$55 to $144 per foot of depth

MISCELLANEOUS SITE WORK

Major airport runways, 42" thick (16" to 22" concrete topping), costs $50.00 to $91.00 per square foot excluding all offsite work and environmental issues. Imported earthwork can more than triple the costs. Concrete replacement, excluding sub-base work, costs $34.00 to $54.00 per square foot, including removal but not disposal or runway closure costs.

GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

Garages, industrial buildings, lofts and warehouses are characterized by utilitarian construction; however, many light industrial buildings now approach office buildings in interior construction and space division. In this respect, many electronics and similar industrial plants have many loft or office building characteristics. If the plumbing and interiors of these buildings are not priced in detail, great care should be exercised in using the typical cost ranges shown. The interior and plumbing costs included in the tables of costs per square foot of floor area include typical office and showroom space necessary for the manufacturing or storage operation. They do not include office and showroom space for other functions of the entire business even though these may be attached to the structure. Many buildings of the types covered by this section are designed to support heavy loads. Their foundations, frames, floors, and walls are heavier than most other occupancies, while fenestration is simpler. Sheds, including low-cost utilitarian storage structures, which are usually lighter than typical industrial or warehouse buildings, should be priced from Section 47 or 64. For descriptions of buildings included in this section, see Page 1, Section 14.

Cold-storage facilities can be priced by building up the basic structure cost from this section and adding costs for specific insulation and refrigeration from Section 58.

Foundations for Class A and B industrial buildings can be priced quite accurately on a square-foot-of-floor-area basis. However, with Class C, D and S light industrial shell-type buildings, a perimeter foundation or footings may carry most or all of the load, and the cost is generally proportional to the perimeter. Such costs may be better computed on the linear-foot-of-bearing-wall basis with costs of column footings added if interior columns support a roof or floor load above.

Frame costs should be adjusted for partial bearing walls, as described in Section 51, using a cost proportional to the load that is carried by the frame. If the frame members are visible and uniform enough to be easily measured and counted, they may be priced from Section 51. When a complete frame cost is used, generally the trusses or girders would be included as the horizontal members of the frame. See explanations in Section 51 or 40. In single-story buildings where the frame supports only a light roof, Rating 1 might often be chosen, even in average buildings.

Interior construction varies widely in industrial structures. The costs given are only typical ranges and should be used with caution. If desirable, partition costs may also be built up from Section 52; however, interior costs also include miscellaneous cabinets, shelves, stairs and other items.

Plumbing will vary widely and may be more accurately priced on a per-fixture basis; however, typical cost ranges are given on a square-foot basis. Industrial sinks and other specialized fixtures may also be found in Section 53. Plumbing costs do not include process piping for industrial equipment.

Electrical costs do not include power wiring or panels for industrial equipment.

Exterior walls may contain few or no windows, or they may be nearly all-glass area. Thus, the exterior wall costs have a wide variation, depending on the amount and quality of fenestration.

SEGREGATED COSTS

(For explanation of the rating numbers which head the cost columns, see Section 40)

EXCAVATION AND SITE PREPARATION	1	2	3	4
Excavation, bulk (per cu. ft.)	$ .25	$ .35	$ .48	$ .66
Fill (per cu. ft. of compacted earth)	.26	.34	.44	.58
Site preparation (per sq. ft. of site)	.21	.28	.37	.49

FOUNDATION – Table I gives complete average costs per square foot of floor area. If a more detailed estimate is desired for Class C, D or S buildings with continuous or column footing foundations, use Tables II and/or III as appropriate.

TABLE I. CONCRETE FOUNDATIONS – Apply to total floor area including basements, but excluding mezzanines.

Concrete foundations for:				
Class A	$1.99	$2.66	$3.56	$ 4.77
Class B	2.16	2.86	3.77	4.99
Class C, bearing wall	1.85	2.49	3.36	4.53
nonbearing wall	1.77	2.39	3.22	4.35
Class D, masonry veneer	1.63	2.21	3.00	4.08
siding or stucco	1.44	1.95	2.64	3.58
pole-frame construction	1.35	1.82	2.45	3.31
Class S	1.46	1.99	2.71	3.70
Classes C, D and S, light perimeter foundation for open shell-type structures	.60	.80	1.08	1.44
Add for perimeter insulation, ground floor area only	.08	.14	.23	.35
earth-sheltered structures	.11	.19	.32	.50
Add for seismic, base isolators	3.41	5.16	7.78	11.69
damping devices	3.04	4.12	5.59	7.59

FOUNDATION (Continued) – ALTERNATE METHOD

TABLE II. CONCRETE FOUNDATIONS – Apply to linear feet of continuous footings or foundation walls if Table I is not used. See foundation discussion above.

	1	2	3	4
Heavy grade beam or stem footing				
Class C	$24.50	$34.50	$48.50	$68.25
Class D, masonry veneer	21.75	30.75	43.75	62.00
siding or stucco	19.00	27.00	38.25	54.50
Class S	19.50	27.75	39.75	56.50
Classes C, D and S, reinforced light-grade beam	15.25	21.75	31.25	45.00
unreinforced-grade beam	7.50	11.00	16.25	24.00
Add for perimeter insulation	.81	1.82	3.32	5.57
earth-sheltered structures	1.15	2.65	4.85	8.15
Add for perimeter radon-control matting	2.50	3.05	3.55	4.15
Add for perimeter raised-floor skirting	7.25	8.50	9.75	11.75

TABLE III. CONCRETE COLUMN FOOTINGS – Apply to total number of columns if Table I is not used. Costs apply to one-story buildings. For others, add 20% for each story over one.

Concrete columns	$47.25	$84.50	$140.50	$223.75
Steel columns	43.00	78.75	132.00	211.75
light pre-engineered frame	35.50	47.25	63.00	83.75
light tubular/pipe frame	26.50	37.75	53.75	76.50
Wood columns	39.00	64.00	101.50	157.25
light pole-frame	27.00	38.25	54.25	76.75

FOUNDATION ADJUSTMENTS – Apply to base cost used.

Add 2% for each foot of average story height over 14' base.
Deduct 2% for each foot of average story height under 14' base.
Deduct .8% for each story over one, for multistory buildings.
For one story buildings with light perimeter grade beam foundations or foundations and footings formed and poured monolithically with floor slabs, use 60% of the above costs for that floor only. Add for pilings from Section 51. If foundations are brick or stone instead of concrete, increase costs by 20%. For concrete block, reduce costs by 8%.

SEGREGATED COST METHOD

GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

FRAME – Apply to total floor area including basements, but excluding mezzanines.

	1	2	3	4
Bearing walls, wood or steel floor supports only	$ 1.24	$ 1.49	$ 1.78	$ 2.14
masonry supports only	1.81	2.17	2.60	3.11
Steel, fireproofed, Class A	12.02	14.14	16.64	19.58
Composite concrete-steel, Class B	11.38	13.14	15.18	17.53
Concrete, reinforced, Class B	11.04	12.90	15.08	17.63
precast, post-tensioned	10.65	12.29	14.19	16.38
Steel, Classes C and D	4.52	5.81	7.48	9.62
Class S	4.27	5.52	7.13	9.21
light pre-engineered frame	2.70	3.48	4.47	5.76
light tubular/pipe frame	1.63	2.20	2.98	4.03
add for fireproofing	.72	1.16	1.82	2.80
Steel columns, wood beams	2.91	3.94	5.32	7.20
Wood, A-frame construction	3.50	4.40	5.54	6.97
laminated bents and arches	4.00	5.00	6.25	7.81
light arch-rib construction	2.53	3.21	4.08	5.19
mill-type (heavy timber) construction	4.17	5.23	6.57	8.24
heavy timber/log construction, architectural	8.16	10.73	14.10	18.54
post and beam construction	2.87	3.61	4.55	5.72
light pole-type construction	1.62	2.14	2.84	3.76
Add for seismic/wind bracing, Class A and B	2.39	3.38	4.78	6.77
open Class C, D and S frames	.67	.85	1.08	1.38
damping devices	1.01	1.32	1.74	2.28

FRAME ADJUSTMENTS – Apply to base cost used.

Add 4% for each foot of average story height over 14' base height.
Subtract 4% for each foot of average story height under 14'.
For multistory buildings, add 4% for each story over two, to apply against the total floor area.
For craneways, use frame member costs in Section 58.
For partially framed structures, see Section 51.

FLOOR STRUCTURE – Apply to area of described floor or mezzanine.

Asphalt, on ground, including base	$ 1.85	$ 2.54	$ 3.50	$ 4.81
Concrete, on ground (exclusive of vapor barrier)	2.98	3.77	4.76	6.02
lift slab	8.90	10.38	12.11	14.12
elevated flat slab and joists	10.04	11.76	13.77	16.12
pan or waffle slab and joists	9.22	10.74	12.51	14.58
precast joists and deck	8.75	10.20	11.89	13.86
precast joists, wood sheathing	6.81	7.93	9.23	10.75
cored plank on bearing walls	7.63	8.92	10.43	12.19
Steel joists, flat slab	10.80	12.93	15.47	18.52
corrugated deck and concrete	8.66	10.79	13.44	16.74
cellular deck and concrete	-----	12.66	16.03	20.48
open metal grating	15.60	22.13	31.41	44.56
precast deck	9.47	11.20	13.24	15.65
wood sheathing	5.27	6.92	9.08	11.92
light-gauge truss joists	4.59	6.10	8.10	10.77
Wood joists and sheathing	4.41	5.85	7.77	10.31
wood joists and bridging only	3.31	4.56	6.28	8.65

For treated wood, increase costs by 10% to 20%.

FLOOR EXTRAS – Add to floor structure costs.

Vapor barrier	$ .58	$ .83	$1.18	$1.69
Super flat (level) slab on grade, add	.52	.91	1.42	2.23
Each inch of slab on grade over 10", add	.38	.44	.52	.61
Each inch of sheathing over 1", (mill type) add	1.02	1.17	1.35	1.55
Foamed concrete surfacing, 1 1/2" – 2"	.82	1.02	1.28	1.59
Floor insulation, add	.61	.75	.93	1.15
cold storage	1.25	1.59	2.02	2.56
for each inch over 2", add	.26	.37	.54	.78

FLOOR COVER – Apply to area of described floor.

	1	2	3	4
Access (computer) floor, on stanchions	$15.25	$18.25	$21.50	$25.75
full office floors	10.10	11.90	14.00	16.45
Asphalt tile	1.80	2.10	2.45	2.85
Bamboo, laminated plank	8.40	10.00	11.90	14.15
Block, wood, treated	5.30	6.30	7.45	8.80
Brick, common, in mortar	6.95	8.15	9.55	11.20
Brick, industrial, acidproof	12.65	15.75	19.55	24.35
Brick pavers, in concrete	8.15	9.65	11.45	13.55
Carpet and pad	1.80	2.85	4.40	6.70
custom carpet and pad	6.70	10.70	16.70	25.65
indoor/outdoor	1.70	2.15	2.80	3.55
Color, concrete	.81	1.02	1.29	1.62
Cork	4.65	5.35	6.10	7.00
Diato, magnesite, etc.	6.00	6.95	8.00	9.25
Flagstone, random local stone, in concrete	11.05	13.00	15.30	18.00
Gratings, plastic	8.80	14.35	22.65	35.05
steel or aluminum	9.45	13.60	20.60	33.85
stainless steel	39.80	56.00	78.85	110.95
Hardener and sealer, concrete	.61	.83	1.12	1.51
heavy duty	1.45	1.75	2.10	2.55
aggregate topping, 1/2" – 1"	4.05	5.30	6.95	9.10
*Hardwood	6.45	8.30	10.70	13.80
sports-gym floors on resilient sleepers	7.55	9.25	11.30	13.85
Linoleum	2.95	3.50	4.15	4.90
Marble or granite	19.60	26.60	36.10	49.00
cast tile	12.30	14.35	16.80	19.60
Melamine/laminated tile	2.35	3.15	4.25	5.75
deluxe	6.05	7.05	8.25	9.65
Plastic tile, interlocking	5.90	6.55	7.25	8.00
Rubber fabric tile	7.85	9.10	10.55	12.20
Rubber tile or sheet	3.10	4.25	5.75	7.85
Seamless plastic, epoxy, urethane, neoprene,				
1/32" – 1/16" thincoat	3.05	3.75	4.60	5.65
1/8" – 3/8"	4.95	6.10	7.55	9.30
add for colored chips or glitter	1.25	1.60	2.05	2.55
Slate, grouted	12.30	14.45	16.95	19.90
Softwood	5.15	6.10	7.25	8.60
Stone plank	11.50	14.00	17.00	20.50
Synthetic sports surfacing	6.05	7.45	9.10	11.20
Terrazzo (exclusive of base slab)	8.55	10.50	12.90	15.80
tile	16.50	18.75	21.50	24.50
Tile, ceramic or quarry	8.40	10.50	13.15	16.50
custom tile	19.75	23.50	28.00	33.50
*Wood over concrete, hardwood	7.40	9.45	12.10	15.45
parquet block, prefinished, in mastic	7.25	9.80	13.30	18.00
softwood	6.00	7.05	8.30	9.75
Vinyl composition tile or sheet	1.65	2.05	2.55	3.20
Vinyl sheet	2.55	3.50	4.80	6.55
Vinyl tile	2.65	3.85	5.65	8.20
*Add for custom wood floors	4.95	10.50	18.80	31.20
For pictorial artwork, add	8.35	11.85	16.80	23.80

Add 15% for conductive floor coverings.

GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

CEILING – Apply to area of described ceiling.	1	2	3	4
Acoustical ceilings, tile or panels: metal panels,				
including pads and suspension system	$ 5.35	$ 6.95	$ 9.00	$11.70
clean room panels, incl. suspension system	9.15	10.35	11.70	13.25
mineral fiber, fiberglass, panels only	1.13	1.71	2.57	3.85
organic fiber, wood or cane, panels only	1.59	1.90	2.26	2.70
Embossed metal	4.20	6.00	8.55	12.25
Fiber sports court panel with suspension system	4.40	5.50	6.95	8.70
Gypsum board, taped and painted	1.69	1.89	2.11	2.36
spray-on texture	1.62	1.79	1.97	2.18
Mirror-faced panels	15.75	17.50	19.75	22.00
Paint or stain, bottom of roof or floor	.49	.67	.91	1.25
Plaster on lath: acoustical	3.36	3.85	4.41	5.06
spray-on, thincoat with texture on lath or drywall	2.43	2.73	3.06	3.44
standard, add 20% for Keene's	2.91	3.35	3.86	4.45
add for metal lath	.41	.47	.56	.66
Plaster on masonry soffit: acoustical	2.87	3.29	3.76	4.31
spray-on, thincoat with texture	1.94	2.17	2.42	2.70
standard, add 23% for Keene's	2.42	2.79	3.21	3.70
Plaster panels, decorative	10.80	12.00	13.35	14.85
Plastic panels, with suspension system,				
but excluding lighting (in electrical cost)	5.15	6.40	7.90	9.80
Plywood (softwood) or hardboard panels	2.40	2.90	3.45	4.15
hardwood	3.50	4.35	5.45	6.80
coffered or vaulted panel with molding	7.70	10.75	15.05	21.00
custom wood, site-built	20.50	24.25	28.50	33.50
Polylaminated panels (FRP)	2.55	2.85	3.25	3.65
insulated panel	3.85	4.40	5.05	5.75
Wood, boards or T & G, softwood	2.40	2.90	3.45	4.15
hardwood	3.80	4.60	5.60	6.80
carved, decorative	6.80	10.20	15.25	22.85

CEILING EXTRAS – Add to ceiling costs. For special ornamentation see Section 52.				
Ceramic tile, add	$10.10	$13.40	$17.85	$23.70
custom tile, decorative	22.25	27.50	33.75	41.75
Custom papers, stenciling, staff, add	9.75	13.75	19.50	27.75
border or coving only	2.50	3.30	4.40	5.80
Extensive decorating, cust. plaster, terra cotta, add	30.50	39.00	49.75	63.50
Wood furring	.75	.94	1.18	1.48
Metal furring	1.20	1.53	1.95	2.49
If ceiling structure is required which is not				
part of the roof or floor structure, add	1.21	1.55	1.98	2.53
Suspended ceiling, metal, (suspension system) add	1.06	1.38	1.80	2.35
fiberglass (FRP)	1.71	2.10	2.58	3.16
hardwood, decorative	2.85	4.00	5.60	7.90
seismic supports, add	.23	.31	.36	.46
Ceiling insulation, add	.59	.75	.95	1.21
vinyl faced, exposed	.82	.96	1.12	1.31
add for underdeck supporting bands	.27	.32	.38	.45
rigid board, faced	1.16	1.54	2.05	2.72
cold storage	1.80	2.40	3.20	4.30
for each inch over 2", add	.26	.38	.55	.79
vapor barrier, plastic	.11	.16	.23	.34

For specific cold storage insulation, see Section 58.

INTERIOR CONSTRUCTION – Apply to total floor area.
Add or deduct 5% for each foot of variations from 14' average story height.

FRAME INTERIOR PARTITIONS	1	2	3	4
Armories	$13.51	$15.89	$18.68	$21.97
Automotive centers	5.07	6.78	9.05	12.10
Auto dealerships, complete	2.87	4.06	5.75	8.14
Broadcasting facilities	28.38	34.56	42.09	51.26
Cold storage facilities	.88	2.18	4.12	7.01
Computer centers	27.10	30.38	34.06	38.18
Creameries	5.44	8.02	11.83	17.45
Garages, mini-lube	17.90	25.76	37.08	53.37
service, lower qualities	1.93	2.80	4.06	5.88
higher qualities (incl. municipal service centers)	3.09	9.22	18.37	32.05
service shed	.63	.91	1.31	1.89
storage	1.45	2.13	3.13	4.59
underground parking	1.93	2.48	3.19	4.10
Hangars, storage	.38	1.51	3.19	5.70
maintenance and offices	3.06	4.44	6.45	9.37
Industrials, manufacturing, light	1.05	2.39	4.39	7.38
heavy	16.13	19.77	24.22	29.68
engineering and research	4.14	7.15	11.64	18.36
laboratories	28.12	33.25	39.32	46.50
Lofts	2.45	4.73	8.13	13.22
flex buildings	1.88	3.89	6.88	11.36
Mini-warehouses	2.87	3.89	5.27	7.15
high-rise facilities	3.36	4.54	6.14	8.29
Parking structures, parkades	.87	1.70	2.93	4.77
Passenger terminals	11.08	18.34	29.18	45.38
Post offices, branch	28.32	33.93	40.65	48.70
main	26.01	32.77	41.28	52.01
processing facilities	4.66	7.14	10.84	16.37
Showrooms	5.25	7.17	9.80	13.38
T-hangars	1.06	1.40	1.84	2.43
Warehouses, storage	.34	1.23	2.55	4.53
distribution	1.93	2.57	3.40	7.56
mega storage/distribution	.15	1.36	3.17	5.87
transit	3.59	4.95	6.82	9.39
Add for masonry partitions	15%	12%	10%	10%

MEZZANINES – Apply to open mezzanine area. (Cost of miscellaneous items such as rail, stairs, etc.)				
	$2.28	$2.91	$3.71	$4.74

MISCELLANEOUS – Apply to total square feet of building area, if required. These costs vary greatly, and the following typical cost ranges should be used with caution. Built-in equipment which is normally included under the general contract is included in the interior construction costs.

Laboratories, fixed equipment	$13.50	$16.75	$20.75	$25.50

STORAGE VAULTS – Per square foot of vault area, excluding doors. Add or deduct 2% for each foot of height variation from the 14' standard. For more detailed costs see Section 52, Page 5.

Record storage	$62.50	$69.50	$77.25	$85.75
Modular vault systems, insulated/record storage	40.50	50.00	61.50	75.75

CATWALKS – Apply to linear footage of walkway.

Catwalks, steel	$86.50	$100.00	$115.75	$134.00
wood	74.00	85.75	99.25	115.00
Ladders, steel	13.50	18.00	24.00	32.00
wood	11.75	15.75	21.00	28.00

SEGREGATED COST METHOD

GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

PLUMBING – Apply Table I to total floor area. Use Table II or Section 53 for more detail.

TABLE I – Typical cost ranges.	**1**	**2**	**3**	**4**
Armories	$ 4.06	$ 5.86	$ 8.45	$12.20
Automotive centers	2.36	3.51	5.21	7.74
Auto dealerships, complete	2.40	3.59	5.36	8.01
Broadcasting facilities	2.54	3.74	5.50	8.10
Cold storage facilities	.95	1.69	2.80	4.46
Computer centers	3.93	5.19	6.86	9.07
Creameries	4.83	7.65	11.87	18.16
Garages, mini-lube	4.55	7.29	11.38	17.50
service, lower qualities	1.76	2.95	4.73	7.39
higher qualities (incl. municipal service centers)	2.96	4.83	7.63	11.80
service shed	.25	.38	.57	.85
storage	1.16	1.78	2.70	4.07
underground parking	1.27	1.63	2.10	2.70
Hangars, storage	.51	1.04	1.84	3.03
maintenance and offices	1.74	3.14	5.23	8.35
Industrials, manufacturing, light	1.28	2.09	3.31	5.12
heavy	4.62	5.55	6.68	8.03
engineering and research	3.28	4.79	7.00	10.22
laboratories	12.65	18.27	26.40	38.14
Lofts	1.71	3.11	5.20	8.32
flex buildings	1.38	2.31	3.69	5.76
Mini-warehouses	.28	.76	1.49	2.57
high-rise facilities	.46	.99	1.77	2.95
Parking structures, parkades	.53	1.03	1.79	2.91
Passenger terminals	5.81	8.53	12.53	18.41
Post offices, branch	3.16	4.25	5.73	7.71
main	3.56	4.99	6.99	9.80
processing facilities	3.91	5.41	7.49	10.36
Showrooms	3.48	4.89	6.87	9.66
T-hangars	.37	.62	.99	1.54
Warehouses, storage	.75	1.36	2.26	3.61
distribution	1.96	2.94	4.41	6.61
mega storage/distribution	.25	.54	.98	1.63
transit	2.90	3.77	4.89	6.35

TABLE II – ALTERNATE METHOD – Apply to total number of fixtures. Do not use these costs if Table I is used.

Cost per fixture	$2,275	$3,240	$4,615	$6,575
Cost per tap or drain without fixture	440	570	730	940

SPRINKLERS – Apply to sprinklered area. Costs include all piping for ordinary-hazard occupancies but do not include tanks. For extra-hazard occupancies, such as hangars, add 15% to the costs below. For supplemental in-rack systems, add 30% to 100% per level. For early-suppression, fast-response system, add $ .41 plus $ .85 – $1.27 for pumps. Chemical systems: see Section 53. For further discussion, see Sections 14 and 40.

2,500 square feet	$2.55	$3.40	$4.54	$6.05
5,000	2.30	3.04	4.02	5.32
10,000	2.08	2.73	3.57	4.68
15,000	1.95	2.55	3.32	4.34
20,000	1.86	2.42	3.15	4.10
30,000	1.75	2.27	2.94	3.81
40,000	1.68	2.17	2.79	3.60
50,000	1.63	2.09	2.69	3.46
60,000	1.58	2.03	2.60	3.33
80,000	1.51	1.93	2.47	3.16
100,000	1.47	1.87	2.39	3.04

SPRINKLERS (Continued)	**1**	**2**	**3**	**4**
125,000 square feet	$1.42	$1.80	$2.29	$2.91
150,000	1.38	1.75	2.22	2.82
200,000	1.32	1.67	2.12	2.68
250,000	1.28	1.61	2.03	2.55
300,000	1.24	1.56	1.96	2.46
400,000	1.20	1.50	1.87	2.34
600,000	1.12	1.40	1.75	2.18
800,000	1.07	1.33	1.66	2.07
1,000,000	1.03	1.28	1.59	1.98

HEATING, COOLING AND VENTILATING – Apply to total floor area.

Add or deduct 3% for each foot of variation in average story height from 14' base.

Costs are given for gas-fired heating surfaces. Add or deduct as follows for other fuels.

Oil-fired +7% Coal, stoker +7% Coal, hand-fired -2%

For Passenger Terminals, Research Labs and Cold Storage Buildings, use costs in Section 14.

Heating Only				
Electric cable or baseboard	$2.26	$2.93	$3.81	$ 4.95
radiant panels	2.16	2.57	3.06	3.64
Electric wall heaters (including FWA)	1.18	1.41	1.69	2.02
Forced air	2.58	3.34	4.32	5.59
Hot water, baseboard or radiators	4.17	5.56	7.42	9.90
radiant floor	4.05	5.58	7.68	10.58
Radiant heat, gas, suspended	1.25	1.70	2.32	3.16
Space heaters, gas, with fan	1.05	1.46	2.03	2.82
steam coil, with boiler	1.77	2.30	2.98	3.87
steam coil, without boiler	1.25	1.68	2.26	3.04
Steam radiator, with boiler	4.00	5.17	6.68	8.63
without boiler	3.21	4.26	5.66	7.51
Wall or floor furnace	1.25	1.52	1.86	2.26
Heating and Cooling				
Zoned A.C., hot and chilled water	$10.84	$14.35	$18.99	$25.13
warm and cooled air	6.26	8.36	11.17	14.92
Package heating and cooling, short ducts	4.77	6.28	8.28	10.90
Heat-pump system	5.13	7.11	9.85	13.64
add for ground-loop heat source	1.32	1.92	2.79	4.05
Individual thru-wall heat pump	2.21	3.04	4.17	5.73
Cooling Only				
Evaporative coolers	$2.21	$2.65	$3.18	$3.81
Refrigerated air conditioning only, zoned system	4.30	5.54	7.13	9.18
package unit, short ducts	3.04	3.83	4.83	6.09
Ventilation only, with ducts & blowers	.78	1.00	1.27	1.63

MISCELLANEOUS – Apply to square feet of floor area of described laminar flow coverage. These costs vary greatly and the following typical cost ranges should be used with caution.

Clean rooms, class 100,000 to 10,000	$140	$ 185	$ 255	$ 340
class 1,000 to 100	425	510	615	740
class 100 to 10	710	1,230	2,005	3,165

GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

ELECTRICAL AND LIGHTING – Apply to total floor area. Broadcasting facilities, computer centers, laboratories, passenger terminals and other buildings with heavy demand loads are not included in the general tables.

	1	2	3	4
Few Outlets: Nonmetallic	$1.59	$2.10	$2.77	$3.66
Armored cable (BX)	1.93	2.53	3.31	4.33
Flexible conduit	2.32	3.02	3.94	5.13
Rigid conduit	2.81	3.63	4.69	6.05
Average Number of Outlets: Nonmetallic	$2.79	$3.65	$4.77	$ 6.23
Armored cable (BX)	3.32	4.34	5.67	7.40
Flexible conduit	3.95	5.15	6.72	8.76
Rigid conduit	4.71	6.13	7.99	10.40
Many Outlets: Nonmetallic	$4.88	$ 6.33	$ 8.21	$10.65
Armored cable (BX)	5.75	7.48	9.73	12.65
Flexible conduit	6.75	8.81	11.50	15.01
Rigid conduit	7.94	10.40	13.61	17.82
Unfinished Areas: Nonmetallic	$ .99	$1.32	$1.76	$2.35
Armored cable (BX)	1.24	1.62	2.12	2.78
Flexible conduit	1.54	1.98	2.54	3.26
Rigid conduit	1.89	2.39	3.02	3.82
Typical costs for some occupancies:				
Armories	$ 5.47	$ 7.04	$ 9.07	$11.67
Automotive centers	4.06	5.76	8.18	11.62
Auto dealerships, complete	5.54	7.90	11.25	16.04
Broadcasting facilities	11.32	15.57	21.42	29.46
Cold storage facilities	3.14	4.70	7.02	10.50
Computer centers	15.90	20.92	27.53	36.23
Creameries	3.78	6.01	9.35	14.33
Garages, mini-lube	4.85	7.39	11.17	16.83
service, lower qualities	2.94	4.83	7.65	11.86
higher qualities (incl. municipal service centers)	4.88	8.30	13.40	21.02
service shed	1.11	1.66	2.49	3.73
storage	2.19	3.44	5.31	8.10
underground parking	3.11	3.84	4.74	5.85
Hangars, storage	1.45	2.23	3.39	5.12
maintenance and offices	4.09	6.14	9.20	13.77
Industrials, manufacturing, light	2.54	4.53	7.50	11.94
heavy	10.61	13.07	16.11	19.85
engineering and research	5.48	7.99	11.66	17.00
laboratories	15.93	23.27	33.99	49.66
Lofts	3.80	6.01	9.31	14.24
flex buildings	2.43	4.04	6.45	10.05
Mini-warehouses	1.34	1.98	2.92	4.30
high-rise facilities	1.60	2.38	3.54	5.27
Parking structures, parkades	1.60	2.73	4.42	6.95
Passenger terminals	9.36	14.23	21.51	32.38
Post offices, branch	9.41	12.37	16.27	21.39
main	10.22	13.47	17.75	23.40
processing facilities	13.41	18.20	24.69	33.51
Showrooms	7.20	9.84	13.45	18.38
T-hangars	1.22	1.80	2.67	3.95
Warehouses, storage	1.21	2.13	3.51	5.57
distribution	2.83	4.60	7.25	11.20
mega storage/distribution	1.30	2.38	4.00	6.42
transit	3.55	5.31	7.94	11.87

EXTERIOR WALL – Apply to total wall area.

Concrete or Masonry Walls	1	2	3	4
Adobe or hollow clay block, 6"	$15.96	$18.11	$20.55	$23.32
8"	17.07	19.47	22.21	25.33
12"	19.45	22.14	25.20	28.69
14"	21.47	24.47	27.88	31.77
Adobe block, grouted or cavity 22" – 24"	24.72	28.22	32.21	36.76
30" – 32"	26.80	30.50	34.71	39.50
Block, concrete, 6"	13.94	15.81	17.94	20.35
8"	14.97	16.99	19.27	21.87
12"	17.10	19.40	22.00	24.96
16"	19.25	21.83	24.75	28.06
for each additional 4" of block, add	2.17	2.45	2.76	3.11
Block, grouted or cavity, 10" – 12"	16.23	18.35	20.75	23.47
*Add for ornamented face block	1.14	1.72	2.58	3.86
Brick, block backup, 8"	18.02	20.46	23.22	26.36
12"	20.15	22.87	25.95	29.45
16"	22.30	25.29	28.69	32.54
Brick, common, 8"	20.18	22.87	25.92	29.37
12"	24.79	27.99	31.61	35.70
16"	29.42	33.13	37.32	42.03
for each additional 4" of brick, add	4.64	5.15	5.72	6.35
Brick, grouted or cavity, reinforced, 9" – 10"	22.15	25.08	28.41	32.17
block backup, 9" – 10"	20.04	22.65	25.60	28.93
block backup, 12" – 14"	22.19	25.08	28.35	32.04
Brick, 6" SCR modular	15.19	17.38	19.88	22.75
8"	16.99	19.32	21.96	24.97
*Add for face brick	2.47	2.72	3.00	3.30
Concrete, reinforced, formed, 4"	15.62	17.77	20.22	23.00
6"	16.83	19.11	21.69	24.62
8"	18.23	20.62	23.32	26.37
12"	20.83	23.46	26.42	29.75
for each additional 4" of concrete, add	2.60	2.83	3.08	3.35
precast panels, 2"	12.95	14.73	16.75	19.05
4"	13.83	15.71	17.85	20.28
6"	15.17	17.22	19.54	22.17
8"	16.88	19.07	21.54	24.34
12"	19.94	22.36	25.08	28.12
tilt-up panels, 4"	12.90	14.75	16.87	19.29
6"	13.80	15.82	18.14	20.79
8"	14.85	17.04	19.54	22.42
10"	16.02	18.39	21.11	24.24
12"	17.23	19.79	22.73	26.10
add for insulated sandwich	1.35	1.65	2.05	2.55
add for brick or tile inserts	4.95	6.05	7.45	9.10
Glass block, white or aqua	38.75	41.25	43.75	46.50
colors or reflective	51.00	54.25	57.75	61.50
Local stone, block backup, ashlar veneer, 12"	32.50	37.25	42.75	49.00
rubble or rustic, veneer, 12"	25.75	30.00	34.75	40.25
for each 4" variation in thickness	2.20	2.45	2.75	3.10
Local field stone, in mortar, 12"	22.50	26.00	29.75	34.25
for each 4" variation in thickness	2.05	2.40	2.75	3.20
Local stone, rough cut, solid, 12"	38.75	46.25	55.00	65.50
granite	39.75	49.50	61.25	76.25
limestone	43.00	51.25	61.00	72.75
for each 6" variation in thickness	17.50	20.50	24.00	28.25
Rammed earth, soil cement, 24"	17.25	20.00	23.25	27.00
pneumatic build-up, formed one side	27.25	31.00	35.25	40.00
for each 6" variation in thickness, add or deduct	1.10	1.25	1.45	1.70
Tile, structural clay, 6"	14.76	16.90	19.35	22.16
10"	17.34	19.80	22.62	25.83

***NOTE:** The additional cost for face block or brick is the difference between the cost of face block or brick and standard block or common brick in place as part of a wall. For the cost of ornamented, face, or synthetic masonry veneer, see Wall Ornamentation on Page 7.

SEGREGATED COST METHOD

GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

EXTERIOR WALL (Continued) Concrete or Masonry Wall Extras	1	2	3	4
Add for stay-in-place forming	$ .87	$ 1.18	$ 1.60	$ 2.17
Add for glazed block or tile, each side	5.30	5.90	6.60	7.40
Add for pilasters	.96	1.17	1.44	1.76
Add for bond beams	1.03	1.24	1.50	1.81
Add for seismic reinforcement	.42	.69	1.10	1.70
Add for synthetic plaster on rigid insulation (EIFS)	4.10	5.00	6.15	7.50
deluxe, textured or aggregate	6.80	8.10	9.70	11.55
Add for thin masonry on rigid insulation	10.45	11.65	12.95	14.45
Add for clay tile backup in lieu of block	1.75	2.05	2.45	2.90
Add for earth-sheltered waterproofing	.77	1.18	1.79	2.70
Add for insulation	.62	.90	1.29	1.87
earth-sheltered structures	1.03	1.52	2.24	3.30
For special stonework, see Section 56.				
Curtain Walls				
Brick or tile panels	$19.75	$23.75	$ 28.50	$ 34.25
Concrete and glass panels, precast	24.75	28.50	32.75	37.75
glass fiber reinforced, molded	21.00	25.50	31.00	37.75
Metal and glass panels (ordinary)	27.00	31.75	37.50	44.25
Stainless steel or bronze and glass	40.00	46.25	53.25	61.50
Stone panels, local stone	37.00	40.75	45.00	49.75
granite	39.75	45.00	51.25	58.00
limestone or slate	37.75	41.50	45.75	50.50
marble	38.50	43.50	49.25	55.75
composite or aggregate panels	24.75	30.50	37.50	46.25
Structural glazed atrium (including supports)	59.25	78.75	104.50	138.75
Steel studs and stucco	14.60	17.05	19.95	23.35
synthetic plaster on rigid insulation (EIFS)	16.50	19.75	23.65	28.30
deluxe, textured or aggregate	19.25	22.85	27.15	32.25
wood or aggregate board siding	14.00	17.15	21.00	25.75
Add for insulation, insulated areas only	.81	1.20	1.77	2.62
Pre-engineered Walls				
Sandwich panels, alum. or steel, both sides	$14.85	$17.45	$20.50	$24.10
cold storage, metal, both sides	18.50	21.25	24.35	27.95
cement fiber or shotcrete, two sides	11.05	13.50	16.50	20.20
fiberglass panels, two sides	14.25	17.25	20.90	25.30
glass exterior, metal interior	16.55	19.50	23.00	27.15
add for stainless steel or textured (Galbestos)	2.60	3.10	3.70	4.40
add for polylaminated (FRP) interior	.72	.87	1.06	1.28
deduct for gypsum or hardboard interior	1.13	1.23	1.34	1.46
Prefabricated building panels				
aluminum or steel and glass panels	22.00	24.50	27.00	30.00
add for porcelain enamel finish	2.25	2.70	3.20	3.80
add for block backup	4.65	5.25	5.85	6.60
stucco on steel panel	24.00	27.00	30.25	34.00
veneer, block or brick, on steel panel	27.00	31.00	35.50	40.50
stone, rubble or rustic	35.00	38.75	42.75	47.25
Single-wall Construction				
Aluminum or steel, on steel frame	$ 5.30	$ 6.70	$ 8.40	$10.60
on wood frame	4.70	5.90	7.50	9.50
add for porcelain enamel finish	2.25	2.70	3.20	3.80
add for stainless steel or textured (Galbestos)	2.60	3.10	3.70	4.40
Cement fiber (Transite), on steel frame	5.60	6.92	8.56	10.58
sheet siding on wood frame	5.06	6.29	7.82	9.73
siding or shingles on wood frame	5.52	6.79	8.35	10.27
Fiberglass light panels, on steel frame	4.51	5.27	6.15	7.18
sandwich panels	5.59	6.26	7.02	7.86
heavy, (FRP), over 8 oz.	6.58	7.99	9.71	11.80
light panels on wood frame	3.95	4.62	5.41	6.33
sandwich panels	5.05	5.63	6.28	7.00
heavy, (FRP), over 8 oz.	6.03	7.35	8.96	10.93
Glass panels	15.20	20.15	26.70	35.40
projected greenhouse	36.50	41.75	47.75	54.50

EXTERIOR WALL (Continued) Single-wall Construction (Continued)	1	2	3	4
Log, up to 10" diameter	$13.95	$18.40	$24.30	$32.05
deluxe, hand-hewn or oversized	19.60	25.15	32.30	41.45
Plywood, boards or siding, on steel frame	5.42	6.74	8.37	10.40
on wood frame	4.77	5.96	7.46	9.32
Stucco, on baled straw	12.65	15.20	18.20	21.85
Stucco, on wood frame	5.63	6.77	8.13	9.77
Synthetic plaster on rigid insul. (EIFS), on steel frame	8.26	10.00	12.10	14.64
Wood shingles on wood frame	5.79	6.99	8.43	10.18
Add for exterior sheathing, per layer	.97	1.10	1.26	1.43
Add for interior sheathing or liner, finished	1.60	1.90	2.26	2.68
polylaminated panel (FRP)	2.21	2.63	3.13	3.73
Add for stud wall backing	.61	.74	.89	1.08
Add for insulation	.59	.71	.87	1.05
vinyl faced, exposed	.78	.87	.97	1.08
rigid board, faced	1.01	1.32	1.74	2.28
Add for air infiltration wrap	.16	.21	.27	.36
Wood or Steel Stud Walls				
Aluminum or steel siding, horizontal	$11.58	$13.63	$16.05	$18.90
sheet panels	10.35	12.31	14.64	17.41
Asphalt siding	10.18	11.90	13.92	16.28
Cement fiber, siding or shingles, horizontal	11.29	13.31	15.69	18.50
sheet, embossed	10.70	12.47	14.53	16.93
Hardboard siding or shingles, horizontal	11.14	12.97	15.11	17.60
sheet, embossed	10.64	12.37	14.38	16.71
Plywood, textured	10.07	11.79	13.81	16.17
deluxe, redwood, cedar, etc.	11.25	13.19	15.47	18.14
Shingles or shakes, wood	11.41	13.46	15.88	18.73
Stucco	11.48	13.52	15.93	18.77
Synthetic plaster on rigid insulation (EIFS)	13.42	15.87	18.76	22.18
deluxe, textured or aggregate	15.78	18.68	22.11	26.17
Vinyl siding or shingles	11.50	13.54	15.94	18.77
Wood siding	10.89	12.76	14.96	17.53
deluxe, redwood, cedar, etc.	11.79	13.99	16.59	19.68
log veneer siding	12.72	15.73	19.44	24.04
deluxe, half round, full corners	19.86	22.55	25.61	29.09
Veneer, face block or concrete brick	14.40	16.80	19.65	22.95
common brick	14.60	17.10	20.05	23.50
face brick	16.70	19.50	22.75	26.55
mortarless brick	16.95	19.60	22.70	26.25
stone, ashlar veneer	25.65	30.10	35.30	41.45
rubble or rustic	20.40	24.10	28.40	33.55
synthetic veneer or panel	14.15	17.40	21.35	26.20
thin veneer on rigid insulation	17.90	20.80	24.20	28.15
Add for sheathing	.76	.94	1.17	1.45
Add for seismic/hurricane bracing	.42	.51	.63	.77
Add for insulation	.58	.70	.85	1.02
Add for air infiltration wrap	.19	.24	.30	.38
Add for air space wrap	.56	.63	.72	.81
Add for double-stud walls	1.18	1.44	1.77	2.16
Add for wood stresskin sandwich panels	3.65	4.30	5.10	6.00
HANGAR DOORS – Per square foot of door. For fabric curtain doors, use rank 4 base costs where costs may vary from a plus 20% to minus 10%.				
Steel doors, small hangars, to 20' high	$15.25	$22.00	$31.75	$46.00
medium hangars, to 40' high	32.50	41.50	53.25	68.25
large hangars, over 40' high	49.75	61.00	74.50	91.25
MISCELLANEOUS – Apply to total square feet of lined area if required.				
Secure compartmentalization, layered drywall	$ 4.75	$ 5.50	$ 6.25	$ 7.00
Metal shielding, radio frequency	19.75	27.00	37.00	50.50
radiation protection	11.50	14.50	18.50	23.25
Ballistic shielding, fiberglass panels	18.25	26.50	38.75	56.25
Cold storage, insulation board	1.45	1.95	2.65	3.55
for each inch over 2", add	.25	.37	.54	.79

GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

WALL ORNAMENTATION – Apply to ornamented area.	1	2	3	4
Brick, split face, Roman or Norman	$ 9.15	$ 10.55	$ 12.20	$ 14.05
face, standard size	10.05	11.65	13.45	15.60
mortarless brick	10.55	12.05	13.80	15.80
select common	9.00	10.40	12.00	13.85
used	9.75	11.20	12.90	14.85
simulated veneer or panel, 1/4" – 3/8"	7.95	9.65	11.70	14.15
thin veneer on rigid insulation	10.45	11.65	12.95	14.40
add for pictorial carved artwork	128.50	147.00	168.50	192.75
Cement fiber siding	2.80	3.40	4.15	5.05
Concrete, ornamental cast stone	20.20	24.15	28.85	34.45
Concrete block, imitation flagstone	8.15	9.45	11.00	12.80
solar screen	8.70	10.20	11.95	14.00
ornamental face, slump, fluted, split or ground	8.70	10.05	11.60	13.40
glazed one side, add	5.25	5.90	6.60	7.40
Cut stone, carved	86.00	124.50	180.00	260.50
Glass block, white or aqua	33.00	36.50	40.25	44.25
colors or solar reflective	45.75	50.00	54.50	59.50
Granite, ashlar or panel	42.25	48.75	56.25	64.75
Limestone, ashlar or panel	31.00	36.25	42.75	50.00
Local stone, ashlar veneer or panel	26.75	31.50	36.75	43.25
rubble or rustic	19.50	23.25	28.00	33.50
imitation precast stone	9.15	11.85	15.35	19.85
Marble, panels	34.50	40.25	47.25	55.25
Metal panels, screens, louvers	14.75	19.25	25.00	32.75
preformed wall panels	2.65	4.80	8.00	12.75
add for curved panels	.76	1.10	1.58	2.28
Ornamental doorways	53.00	102.25	176.00	286.00
Slate, panels	30.00	34.50	39.50	45.25
Stucco	3.30	3.70	4.15	4.65
on masonry	2.80	3.10	3.45	3.85
add for synthetic on rigid insulation (EIFS)	2.05	2.60	3.35	4.30
*built-up (EIFS) panel relief	4.40	5.60	7.15	9.15
Terra cotta	23.75	28.00	33.00	39.00
Tile, ceramic	11.50	13.25	15.25	17.50
*mosaics	17.25	20.75	25.00	30.25
hand-painted tiles	91.25	126.50	175.00	242.50
Vinyl siding	2.90	3.40	4.05	4.75
Vitrolite (structural glass)	19.25	22.55	26.40	30.95
Wood, plywood	2.15	2.70	3.40	4.30
shingles	3.00	3.55	4.25	5.05
siding	2.80	3.45	4.25	5.20
ornamented molding or trim	8.90	12.00	16.25	21.95
add for treated wood	.44	.53	.62	.74
***For pictorial artwork, add**	9.30	13.00	18.10	25.30

STAINED GLASS – Apply to art glass in window, dome or skylight area. These costs vary greatly, and the following typical cost ranges should be used with caution. See Section 56 for complete description and detailed costs. For residential straight seams or simple bevel, deduct 50% from the Low Cost.

Low cost, plain, min. work or detailed bevel-etched	$ 58.00	$ 79.25	$108.50	$ 148.25
Average, simple figures and scenes	186.00	249.25	334.00	447.75
High cost, highly detailed work (including domes)	398.50	549.25	757.00	1,043.50

EXTERIOR AND BASEMENT STAIRS – Per Riser. For fire escapes, see Section 55.

Concrete	$146.00	$202.00	$281.00	$389.00
Steel pans or prefab. concrete on steel	162.00	220.00	299.00	406.00
Steel or aluminum grating	188.00	249.00	331.00	439.00
Wood	52.00	83.00	130.00	200.00

EXTERIOR BALCONIES – Apply to balcony area.

Concrete	$16.00	$20.75	$27.25	$35.50
Steel	15.00	20.50	28.00	38.50
Wood	12.50	17.00	23.25	31.75
Add for ornate finishes, balustrades	13.50	16.75	21.00	26.25

BASEMENT WALLS – Apply to basement wall area.	1	2	3	4
Concrete block, reinforced, 6"	$ 9.20	$10.45	$11.85	$13.45
8"	10.25	11.60	13.15	14.90
12"	12.35	14.00	15.90	18.00
for each additional 4" of block, add	2.20	2.45	2.75	3.10
Concrete, reinforced, 6"	11.15	12.60	14.20	16.05
8"	12.50	14.10	15.85	17.85
12"	15.15	16.95	19.00	21.25
16"	17.75	19.75	22.00	24.50
for each additional 4" of concrete, add	2.60	2.85	3.10	3.35
Masonry, brick, 8"	15.40	17.35	19.55	22.00
stone, 12"	21.50	24.95	29.00	33.70
for each 4" variation in thickness	4.65	5.15	5.70	6.30
Wood, treated	8.40	10.40	12.85	15.85
Add for stay-in-place forming	.56	0.82	1.21	1.75
Add for waterproofing	.86	1.06	1.32	1.63
earth-sheltered structures	1.06	1.56	2.31	3.41
Add for insulation	.64	.91	1.31	1.87
earth-sheltered structures	1.02	1.51	2.23	3.29

For specific earth-sheltered waterproofing, see Section 51.

ROOF STRUCTURE – Apply to roof area.				
Concrete joists, slab	$ 8.91	$10.11	$11.47	$13.01
lift slab	8.10	9.11	10.26	11.54
pan or waffle slab and joists	8.25	9.30	10.48	11.81
precast joists and deck	7.81	8.82	9.96	11.25
precast joists, wood deck	6.21	6.98	7.85	8.83
cored plank on bearing walls	6.93	7.80	8.79	9.90
thin shell	13.25	15.75	18.75	22.25
Concrete dome, cast-in-place	30.25	33.25	36.25	39.75
thin shell	19.50	22.00	24.75	27.75
Fabric roof, air supported	32.00	34.75	37.75	41.00
tension supported	36.25	40.00	44.25	48.75
add for thermal liner	3.10	3.80	4.65	5.65
Steel joists, concrete slab	9.65	11.20	13.00	15.05
gypsum on formboard	4.34	5.73	7.58	10.01
precast deck	8.46	9.79	11.34	13.13
steel deck	4.55	6.13	8.27	11.15
light-gauge truss joints	3.73	5.13	7.04	9.68
steel deck, gypsum or concrete	6.12	7.95	10.34	13.44
wood or composition deck	3.71	5.05	6.89	9.38
light-gauge truss joists	3.03	4.23	5.90	8.24
Open steel system for corrugated metal	2.16	3.13	4.53	6.57
light purlin supports only	1.04	1.35	1.76	2.29
Steel space frame and sheathing (three dimensional)	15.50	20.50	27.00	35.50
architectural (exclusive of glazing)	26.25	39.50	59.25	88.75
Metal dome and cover	24.25	27.75	31.75	36.25
glazed or translucent panels	51.25	63.25	78.00	96.00
Wood joists, wood or composition deck	2.83	4.02	5.71	8.12
exposed rafters, 2" T&G sheathing	4.57	6.07	8.06	10.71
prefab. panels (exclusive of girders)	1.45	1.82	2.29	2.87
stresskin sandwich panels (exclusive of purlins)	5.25	6.75	8.65	11.15
add for snow roof, furred sheathing layer	1.60	1.75	1.95	2.15
Open wood system for corrugated metal	1.40	2.31	3.66	5.68
light purlin supports only for metal, wood or fiberglass	.52	0.73	1.02	1.42
Lamella	9.90	12.00	14.50	17.55
Wood dome and deck	15.50	19.25	24.00	29.75
Add for seismic/hurricane truss ties	.28	.36	.46	.50
Add for monitor roof	60%	50%	40%	40%
Add for sawtooth roof	40%	35%	30%	25%
Add for complex roof turrets, ornate trim	70%	55%	45%	35%

For treated wood, increase costs by 10% to 20%.

SEGREGATED COST METHOD

GARAGES, INDUSTRIALS, LOFTS AND WAREHOUSES

ROOF COVER – Apply to roof area.	1	2	3	4
Aluminum or steel, corr., crimped or tile panels,				
preformed, light, to 26 gauge	$ 1.49	$ 1.99	$ 2.66	$ 3.55
heavy, under 26 gauge	3.15	3.75	4.45	5.25
formed seam, flat or standing	3.75	4.90	6.40	8.40
batten seam	4.40	5.70	7.30	9.45
sandwich panels, pre-engineered	5.80	7.75	10.40	13.95
cold storage	14.55	16.95	19.80	23.10
shingles	3.00	3.75	4.70	5.90
aggregate finish	3.90	4.90	6.15	7.75
thatch	13.50	15.00	16.75	18.75
add for interior liner, metal	1.40	1.65	1.95	2.30
plastic	1.35	1.60	1.85	2.20
add for porcelain enamel finish	2.25	2.70	3.20	3.80
add for stainless steel or textured (Galbestos)	2.60	3.10	3.70	4.40
Asphalt, corrugated	1.20	1.45	1.75	2.10
Atrium skylight, frame and glazing	25.50	34.75	47.25	64.50
Built-up composition	1.35	1.80	2.35	3.15
Cement fiber, shingles	3.00	3.90	5.05	6.55
corrugated or sheet (Transite)	2.70	4.00	5.85	8.65
Composition, roll, mineral surface	.75	.95	1.20	1.50
Composition shingles, light to 235#	1.35	1.55	1.80	2.10
heavy, over 235# or laminated	1.75	2.30	2.95	3.85
Copper, flat or standing seam	9.05	10.70	12.60	14.90
batten seam	9.75	11.50	13.55	16.00
shingles	9.10	9.90	10.80	11.75
Elastomeric or modified bitumen, single ply	2.45	3.30	4.50	6.05
reinforced sheet or spray-fluid coat	4.25	5.10	6.20	7.45
Fiberglass, corrugated or sheet, light	1.50	1.80	2.20	2.70
sandwich panels	2.70	3.15	3.60	4.20
heavy, (FRP), over 8 oz.	3.00	3.90	5.00	6.50
Slate	5.75	7.15	8.85	10.95
red	11.05	13.75	17.10	21.25
composite, reinforced fiber	4.10	5.10	6.40	7.95
Terne, flat or standing seam	8.35	10.00	11.95	14.30
batten seam	9.05	10.80	12.85	15.35
Tile, clay	4.85	6.55	8.90	12.05
concrete	3.85	4.65	5.65	6.80
plastic or rubber	3.35	4.00	4.80	5.75
add for custom coloring or glazing	1.05	1.35	1.70	2.20
Wood, shakes	2.80	3.30	3.95	4.65
shingles	2.47	2.95	3.55	4.30
fiber shingles	1.75	2.15	2.60	3.15
plywood sheets	.98	1.14	1.33	1.57
add for fire-resistant finish	.41	.51	.61	.76
Add for roof insulation	.76	1.19	1.82	2.77
earth-sheltered structures	1.11	1.81	2.86	4.43
Add for earth-sheltered waterproofing	.96	1.51	2.33	3.55

NOTE: For under-roof insulation and supporting structures, see Ceiling Extras on Page 3. For specific earth-sheltered waterproofing, see Section 51. For earthen roof cover, see Fill costs on Page 1. For cold storage insulation, see Ceiling Extras or Section 58 for detailed costs.

ROOF MODIFIERS – Use the following multipliers for sloping roofs 6' : 12' or greater to convert the unit costs to cost per square foot of horizontal roofed area.

Rise	Run	Multiplier	Rise	Run	Multiplier
6'	: 12'	1.12	12'	: 12'	1.42
8'	: 12'	1.20	18'	: 12'	1.80

TRUSSES AND GIRDERS – Apply to area supported.	1	2	3	4
Steel trusses or longspan girders	$2.08	$2.75	$3.63	$4.79
Timber trusses	2.26	2.99	3.95	5.23
Glued, laminated trusses or girders	2.10	2.73	3.56	4.63

CANOPIES OR MARQUEES – Apply to horizontal area. For light false mansard structures, deduct 50%. For greater detail, see Section 56 or 57.

Wood frame	$19.25	$24.00	$29.75	$37.00
Steel frame	24.50	31.25	39.50	50.25

MISCELLANEOUS

Automotive lifts	Section 64
Automotive repair and lube equipment	Section 65
Automotive spray booths	Section 65
Cranes, elevators and material handling	Section 14 or 58
Security systems	Section 54
Shipping dock equipment	Section 65
Site paving and fencing, railroad spurs	Section 66
Sound systems	Section 52
Storage tanks	Section 61
Truck scales	Section 17
Warehouse racks and equipment	Section 65

NUMBER OF STORIES MULTIPLIER

To allow for the cost of hoisting materials, increased labor costs, and miscellaneous costs due to high-rise construction, multiply the total Segregated Costs of aboveground portions of the building by 100% plus .25% for each story over three.

Example:
Seven-story building: Multiplier = 1.010

SPECIAL HEIGHT MULTIPLIER – TALL BUILDINGS

To allow for the cost of hoisting materials, increased labor costs, and other increased costs due to great wall heights on major hangars or other tall single-story buildings, multiply the total Segregated Cost of these buildings by 100% plus .25% for each foot over 30 feet of wall height.

Example:
Story height = 50 feet: Multiplier = 1.050

COMPLETION OF BUILDING VALUATION

Contractors' overhead and profit, sales taxes, nominal permit fees, and insurance during construction are included in the above costs. Interest on interim construction financing is also included, but not financing costs, real estate taxes, or broker's commissions.

Architects' fees are not included and should be added from Section 99, Page 2.

Depreciation suggestions are given in Section 97.

Fire insurance exclusion suggestions based on percentages of the total cost are listed in Section 96. The portion to be excluded may be deducted directly from the Segregated Cost components, or omitted, instead of using a percentage of the total cost, if appropriate.

Current Cost Multipliers and Local Multipliers, which bring the basic costs up to date for each locality, are found in the Green Supplement, Section 99.

DEPRECIATION

DEFINITIONS

Depreciation is loss in value due to any cause. It is the difference between the market value of a structural improvement or piece of equipment and its reproduction or replacement cost as of the date of valuation. Depreciation is divided into three general categories, as discussed below.

1. **Physical** depreciation is loss in value due to physical deterioration.
2. **Functional** or technical obsolescence is loss in value due to lack of utility or desirability of part or all of the property, inherent to the improvement or equipment. Thus a new structure or piece of equipment may suffer obsolescence when built.
3. **External,** locational or economic obsolescence is loss in value due to causes outside the property and independent of it, and is not directly included in the tables.

Effective age of a property is its age as compared with other properties performing like functions. It is the actual age less the age which has been taken off by face-lifting, structural reconstruction, removal of functional inadequacies, modernization of equipment, etc. It is an age which reflects a true remaining life for the property, taking into account the typical life expectancy of buildings or equipment of its class and its usage. It is a matter of judgment, taking all factors, current and those anticipated in the immediate future, into consideration. Effective age on older structures may best be calculated by establishing a remaining life which, subtracted from a typical life expectancy, will result in an appropriate effective age with which to work. Effective age can fluctuate year by year or remain somewhat stable in the absence of any major renewals or excessive deterioration.

Extended life expectancy is the increased life expectancy due to seasoning and proven ability to exist. Just as a person will have a total normal life expectancy at birth which increases as he grows older, so it is with structures and equipment.

Remaining life is the normal remaining life expectation. It is the length of time the structure may be expected to continue to perform its function economically at the date of the appraisal. This does not imply a straight-line expiration, particularly for mortgage purposes, since normal recurring maintenance and renewal of replaceable items will continue to contribute toward an extended life expectancy. This extended life process is accomplished by use of effective age as the sliding scale and not by continually lengthening the typical life expectancy as the structure ages chronologically.

Percent good equals 100% less the percentage of cost represented by depreciation. It is the present value of the structure or equipment at the time of appraisal, divided by its replacement cost.

APPROACHES TO DEPRECIATION

The simplest and, in past years, a widely used accounting-type concept of depreciation, particularly with individual short-lived components, is the straight-line (age/life) approach. A life expectancy is estimated and a constant annual percentage (equal wear or serviceability each year) is taken for depreciation so that at the end of that life the depreciation equals 100% of the initial cost. This linear approach is simple and easy to use but does not represent reality in most cases since time is not the only factor affecting depreciation and it fails to recognize any value-in-use. The passage of time may not in itself create additional depreciation if the property or component is well maintained and functionally sound.
While age is a critical factor, the best approach to the physical depreciation estimate is a combination of age and condition. The observed condition of each component subject to wear is estimated relative to new condition. A major replaceable component, such as a HVAC system under heavy loading in a hot, humid climate, can wear out quite rapidly, shortening the life expectancy before replacement, while many other portions of a structure, such as excavations, foundations, and concrete exterior walls, wear out slowly if at all. Such long-lived portions often represent a major portion of the total reproduction cost and if still functional will contribute toward an extended life expectancy. Physical depreciation cannot be considered a straight-line deduction from reproduction cost, since necessary and normal maintenance can offset, retard and, in some cases, even eliminate deterioration.

Another approach to depreciation was called the mid-life theory. This takes into account that most buildings depreciate little during the first few years. When it becomes evident that the buildings are no longer new, even though they are adequately maintained, the maintenance expenses rise, rentals tend to decrease and the building depreciates faster. After a number of years, they reach the period called mid-life, at which time, if the buildings are structurally sound and properly maintained, the depreciation remains constant. The mid-life theory suffers from the fact that maintenance expenses on the average building continue to go up in order to maintain the same appearance and utility, and at any age, certain building features may suffer from obsolescence.

These concepts lead to a third theory, the extended life concept, which starts with the hypothesis that buildings age in much the same manner as people and that the older they get, the greater is their total life expectancy. This concept recognizes that a building is in the prime of life before mid-life and that the road is downhill after that, but that correction of deficiencies may lower the effective age and lengthen the remaining life. This recurring revitalization process periodically reverses a continuous progression down the effective age scale, reducing the indicated depreciation percentage as components are renewed throughout the life-span of the building. This nonlinear approach accounts for a greater present value or slower depreciation rate in the early years as compared to the later years when diminishing serviceability and higher maintenance can accelerate depreciation.

EXPLANATION OF DEPRECIATION TABLES

The general depreciation tables in this section were developed from actual case studies of sales and market value appraisals and formed the basis of the extended life theory which encompasses a remaining life and effective age approach. From confirmed sales prices the land value was deducted to obtain a building residual, and the replacement cost of the building was computed. The difference between the replacement cost new of the building and the residual sales price of the building was divided by the replacement cost new, to give the market depreciation in percentage. A similar procedure was followed with the market value appraisals, always excluding those observed cases having excessive obsolescence.

The data was then collated by type of construction and usage, plotted with similar typical total life expectancies, with curves computed for the groupings, for which sufficient data was available, for statistical reliability. From these curves, a matching family of empirical mathematical curves was found, from which the depreciation for any initial (when new) life expectancy could be computed under normal market conditions.

A check of equipment depreciation by similar procedures showed that portions of the family of curves, which was used for nonresidential properties, were suitable as an indicator of that depreciation.

Churches were found to fit in the depreciation category of residential structures, and those tables should therefore be used. Motels, hotels and larger apartments are included in the nonresidential tables, while small apartments or multiples are residential in nature. The division between residential and nonresidential depreciation appears to lie in the usage, whether operated solely for income or for amenities.

Thus, a hotel operated commercially would be expected to fit into the commercial family of curves, but if the same building were operated as a private club, its normal depreciation would be expected to follow the residential curve. The proper curve to use is therefore a matter of judgment on the part of the appraiser, considering the usage and the type of return normally expected, whether cash, equity or intangible amenities.

USE OF THE DEPRECIATION TABLES

1. Note from your inspection the overall and/or individual condition, severity of use, utility and remaining life of all building or equipment components.
2. Determine the true age of the structure or equipment.
3. Compare with like properties and study the effect of, or the lack or need of, typical maintenance or any modernization or major repair to determine the effective age.
4. Check the tables and discussion on Pages 5 through 15 for the recommended initial typical (normal) useful life of the occupancy, component or piece of equipment and for any further modification before establishing an appropriate life.
5. Check the properties listed in each depreciation table to see which to use. (Page 16, Non-residential; Page 17, Residential; Page 18, Fixtures and Equipment.)
6. Enter the proper table choosing a typical life expectancy and effective age and read off the normal depreciation, or use the remaining life expectancy as an aid as described below.
7. Note any excessive obsolescence that may require special consideration separate from the normal depreciation developed from the tables. (Review Pages 2 and 3.)

REMAINING LIFE TABLES

The remaining life tables are based on mortality tables derived from studies of building and equipment, discarding all cases of mortality due to excessive obsolescence. Their primary mission is to provide an easy way for the appraiser to determine the normal remaining life expectancy of buildings for use in the capitalization process, using the effective age and the typical life expectancy.

Many times, the remaining life expectancy of a building or piece of equipment can be established more readily than the effective age. The Remaining Life Table on the right side of each depreciation page may then be entered with the remaining life in the proper typical life column and the effective age read off at the left, or the appraiser may move straight across to the left side of the page and read the depreciation directly.

DEPRECIATION

OVERVIEW

Depreciation is an opinion of a structure's loss in value in relation to its cost-new estimate. If you properly consider all the pertinent factors, you should be able to reliably estimate depreciation. The overall depreciation tables in this section consider the progression of normal deterioration and obsolescence based on age and condition for the class and usage of the improvement. Any abnormal or excessive functional and any or all external obsolescence are considered separately, and are not included directly in the tables.

Physical deterioration is the wearing out of the improvement through the combination of wear and tear of use, the effects of the aging process and physical decay, action of the elements, structural defects, etc. It is typically divided into two types, curable and incurable, which may be individually estimated by the component breakdown method using some type of age/life approach. Damage caused by accidents, vandalism, etc., may be further categorized as deferred maintenance, generally requiring immediate attention, whether curable or incurable, and treated separately based on the items' cost to repair.

Curable physical deterioration is generally associated with individual short-lived items such as paint, floor and roof covers, hot-water heaters, etc., requiring periodic replacement or renewal, or modification continuously over the normal life span of the improvement.

Incurable physical deterioration is generally associated with the residual group of long-lived items such as floor and roof structures, mechanical supply systems and foundations. Such basic structural items are not normally replaced in a typical maintenance program and are usually incurable except through major reconstruction. The distinction here is whether or not such corrections would be justified, economically and/or practically, in view of the cost, time and value gain involved. Exceptions might be historical or landmark buildings or a component that threatens the structural integrity of the structure itself.

In estimating the loss of value attributable to physical deterioration, you are attempting to set up the cost of restoring the building to new condition. A new improvement, suitable for its site, requires little study to establish a reasonable estimate of accrued depreciation. However, after weathering for a few years, a structure showing signs of age, deterioration and abuse requires a more detailed analysis to determine the extent of value loss. This seasoning can be prolonged with sound, well-maintained components, or rather rapid, as in the case of a building shoddily or improperly constructed of inexpensive, short-lived components that have been inadequately or poorly maintained. A detailed building examination and appraisal itemizes the component parts of a structure or plant, and where total depreciation may be difficult to judge, the depreciation of individual components may be more logically estimated. This detailed component breakdown can then form the foundation from which the overall depreciation tables may be reasonably used once properly benchmarked.

PHYSICAL INDICATORS

When considering the extent of physical deterioration, pay particular attention to the following points as you complete the field inspection of your subject property, as some types of deterioration may be very apparent, while others may require a more thorough examination.

1. Floors and Floor Coverings – Cracks, chips, missing tiles, unevenness, sagging, worn finish, rough or scarred finishes, creaking or springiness underfoot, cracks in slabs at column connections and separation at expansion joints in slabs, damaged insulation or drainage.
2. Interior Construction – Cracks in plaster or drywall, open joints in millwork, sticking doors, peeling paper or paint, scars, missing or loose hardware, smoke stains, mildew stains or the effect of prolonged dampness, mold, rodent, insect or termite infestation, damage or decay.
3. Mechanical Equipment – Defective wiring, broken or tarnished light fixtures, loose switches, worn, broken or stained plumbing fixtures, leaking faucets or piping connections, odors indicative of faulty sewer piping, septic systems, drip pans, escaping steam, noisy radiators, rusting pipes, battered or rusted ductwork, furnaces or boilers in poor repair, mold, mildew from defective filters, air cleaners and venting, excessive soot or dust stains.
4. Roof – Evidence of leakage, oxidized roof metal, shingles or tiles missing or split, punctures, tears, shrinkage, splitting, blistering or embrittlement of coating, missing flashing, stained interior ceilings, sagging or decaying roof structure, cracking laminated trusses, tie rods to strengthen bottom chords of timber trusses, damaged truss bracing, plugged roof drains, evidence of standing water, vibration from mechanical equipment, damaged insulation.
5. Exterior Walls – Peeling paint, water or mildew stains, cracked or loose mortar joints, oxidized sheet metal, frame lines out-of-plumb, loose or decaying wood siding, loose ornamentation, exposed reinforcing bar at joints or in footings, unprotected or deteriorating steel framing, brick that needs painting or pointing, inoperable windows or clerestory sashes, broken or rusted screens, sticking doors, inoperable hardware.

Some of the external factors affecting the extent and rate of physical deterioration that you need to be aware of are listed below:

1. Temperature Extremes – Extreme heat tends to dry out and warp lumber, damage roofing, cause cracks in stucco or plaster due to expansion and contraction, and oxidize paint coatings. Extreme cold with freezing down to frost line, expansion and contraction, etc., can cause similar problems. Mechanical equipment can have shortened life spans due to excessive loads placed on them from constant or heavy use because of extreme temperatures.
2. Humidity Extremes – High humidity tends to promote dry rot and insect infestation.
3. Weather Extremes – Heavy snow, floods, hurricanes and tornadoes obviously cause damage. Torrential rains can undermine foundations and create ponding and leaks in roof structures, which in turn may damage interior finishes. Rainstorms accompanied by high winds can damage walls, doors, flooring and mechanical building equipment.
4. Earthquakes – Earthquakes may cause not only damage which is apparent, but structural damage to substructures and bearing soils, which may not become evident for years after the disturbance.
5. Airborne Corrosives – Structures located near oceans are subjected to corrosive salt air, which attacks nearly every part of the structure. Buildings located in areas where large concentrations of corrosive industrial waste gases are vented into the atmosphere typically have relatively short physical lives also.

These external extremes due to the elements are quite variable depending on your local climatic cycles. A very mild winter or summer may have no effect, while a very harsh storm or season can cause excessive wearing in a relatively short period of time.

Functional obsolescence is the perceived market reaction to under- or overimprovements in the utility or desirability of part or all of the improvement. It is divided into two types, curable or incurable. These are further subdivided into inadequacies or deficiencies and superadequacies or excesses. Again, the test as to when an item is curable or incurable is whether the capitalized gain or value, added by correcting the obsolescence by replacement, remodeling, addition or removal, is equal to or greater than the cost to cure as indicated in the market.

Inadequacies are building characteristics that are deficient in that they do not meet current market expectations. Inadequate fixtures or ceiling insulation may be curable, while a poor floor plan or tandem rooms may be incurable.

Superadequacies are those unwanted items which do not add value at least equal to their cost, notably special- or singular-purpose features for a particular user. Many superadequacies are incurable except where excess operating costs might make it economical to remove or replace the item.

There are areas where a pool has limited market appeal and high maintenance costs that cause them to be a heavily discounted superadequancy, where as, other neighborhoods may penalize a property whose yard is not big enough to entertain the addition of a pool as being inadequate.

FUNCTIONAL INDICATORS

When considering the extent of functional obsolescence, pay particular attention to the following indicators:

1. Design Characteristics – Unappealing or poor or antiquated style or design, climate considerations, traffic and noise levels, maintenance or serviceability, security, antiterrorism, evacuation, market acceptance or resistance, sustainability, environmental responsibility or safety, eye appeal, symmetry, scale, orientation, interaction or appropriate blend of materials, glazing, durability, colors, etc., suitability for the occupancy, highest and best use, quality level, distinctive motif of a singular- or special-purpose use or architectural style.
2. Physical Layout – Suitable room or floor layout and orderly flow, overall or room or bay size, massing, net vs. gross space, volume, column, beam or mechanical run obstructions, appropriate wall heights, lighting levels, natural light and ventilation, shading, automated controls, ingress/egress, traffic patterns and doors, adequate support facilities, smoking area, work, storage, counter, cabinet size and placement, space configuration, room for expansion.
3. Mechanical Equipment – Inadequate or excess number of poorly spaced or antiquated plumbing or electrical and lighting fixtures, adequate loading and controls, HVAC, conveyance, appliances, PA systems and other equipment, service or power requirements, excessive heat gain, energy consumption or efficiency, renewable systems, actual vs. rated capacity or performance, abnormal operating costs, proper leak detection or emission controls, pressure differentials, technological changes, e.g., electric vs. standing pilot ignition, high speed wiring, etc., appropriate air quality and changes.
4. Site Assessment – Land use, size, usable pad area, shape, topography, access, parking, easements or other encroachments, utilities, soil type, stability, drainage and percolation, water table and use, erosion, vegetation, land or waterscape, view or other amenities, flood plain, wetlands, coastal, brush, seismic or fault areas, and presence of hazardous contaminants (see Environmental next page), etc., can all affect the structure and its setting.

FUNCTIONAL INDICATORS (Continued)

Some of the external factors affecting the extent of functional obsolescence are:

1. Code Requirements – Most current building codes or zoning for conforming use, height, stories, area, setback, building separation, size/mansionization, energy equivalency tradeoffs, etc., OSHA, fire and life safety, etc. compliance (see below).
2. Fire Protection Requirements – Proper rating, detection for life safety and security, signaling controls, communications, signage, standpipe, sprinklers, extinguishers, hydrants, vents, draft curtains, fans, pumps, door and smoke controls, standby power, emergency phones, appropriate exits, overhang, balcony and deck exposures, stairways, roofing classification, safety or double glazing, fire doors and shutters, etc.
3. Handicapped Requirements – ADA compliance, barrier-free design, parking, ramps, automatic entry, door, hallway widths, markings, signage, alarms, service, cabinet and railing heights, drinking fountains, grab bars, exposed hot-water piping, handicap fixtures, turnaround space, elevator controls, cab size, lifts, etc.
4. Environmental – EPA, wetlands and air quality compliance, water, soil, radon, asbestos, UREA formaldehyde foam insulation, PCBs, CFCs, high-voltage lines, halon, heavy metal or lead contamination, runoff, emissions or sediment containment, detection and testing, septic tanks, leach fields, demolition constraints, disposal or remediation. Evidence of leakage, absence of plants or animals, sick or stressed plants or animals, discolored soil or water, surface sheens and noxious odors, presence of discarded batteries, abandoned wells, sumps, tanks, barrels or other containers of fertilizer, pesticides and herbicides, paints and thinners, heating oil, petroleum or other hazardous chemical substances.
5. Weather Extremes – Appropriate insulation levels, heat gain or loss, shading, passive or active alternatives, energy equivalency tradeoffs, window treatment, glass strength, proper trusses, size, spacing, pitch and drainage for rain and snow loading, proper flashings and penetrations, proper connections for hurricane wind forces, uplift exposure, operable shutters, impact glazing.
6. Earthquakes – Appropriate bracing, connections to structural shell or foundation, shear walls, storefront facade or parapet, overhang exposure, irregular shape, framing stress, torsion, distance from other structures for pounding, etc.

External Obsolescence is a change in the value of a property, usually negative but can be an enhancement, caused by forces outside the property itself, and is not included directly in the tables that follow. It can be divided into two types, locational and economic. Locational factors are generally incurable and may affect only a small area, while economic factors can cover a wide geographic area and may be only temporary and reversible. Different types of property, residential or commercial, will be affected differently by these external forces. For example, it is desirable or advantageous for a manufacturing plant to be situated close to a railroad spur; conversely, it is a disadvantage for a residential property to be located close to that same spur. Close proximity to a major highway is generally much more beneficial for an apartment complex than a single-family residence, etc. Any abnormal, isolated or temporary cases of external obsolescence, usually computed separately, can be measured by market abstraction and capitalization of the imputed loss or gain, which generally affects land values first, then the improvements, by changing the possible uses and altering remaining life.

EXTERNAL INDICATORS

When considering the extent of external obsolescence, pay particular attention to the following indicators in the immediate vicinity, marketing area or community as a whole:

1. Physical Factors – Proximity of desirable or unattractive natural or artificial features or barriers, general neighborhood maturity, conformity, deterioration, rehabilitation or static character, known cleanup sites, fumes, noise, traffic or flight patterns, nuisances, graffiti, waste dump, swamp, toxic industry, electromagnetic fields, brush area, lack of view or landscaping, floodplain, dam inundation area, drainage, water table, sinkholes, fault or seismic zones, soil types, cut and fill, liquefaction, landslides, etc., local ecosystem, endangered species, habitat areas.
2. Economic – Demand/supply imbalance, saturation or monopoly, competition or alternatives, market share, industry or major plant relocation, employment development and growth patterns, downsizing, utility and insurance rates, availability of funds or terms, labor and materials, interest rates, vacancy, building rates, general inflation or deflation rates, tenant ratings, length of time on market or lease up or absorption, income streams and returns, changing consumer habits, purchasing power, property association or government forces, zoning, land use, air rights, legal nonconformity, permit, taxing and assessment policies and bureaucracy or other limiting conditions or restrictions.
3. Infrastructure – Surrounding highest and best use; availability, quality and source of utilities; public services; fire stations, staffed or volunteer; distance from hydrants; street improvements; traffic patterns; emergency response, evacuation routes; public parking, transportation and shipping facilities; retail; recreation; education facilities, etc.

General condition ratings can be assigned to the improvement to assist in the development of an appropriate effective age based on observed condition, utility and age. The better the overall condition, the younger or lower the effective age, which lowers the percentage and amount of depreciation. Condition is an integral part in measuring the degree at which items subject to depreciation have been maintained. Applying any additional condition modifier once the effective age has been established based on condition would be redundant.

Effective age will change as conditions fluctuate, determined by the amount of observed deterioration and obsolescence at the date of the appraisal. Over the life of a structure, you could expect the condition rating and effective age to move up and back down the effective age scale many times over. During the mid-life cycles, the effective age will drift upward at a relatively slow pace, assuming normal maintenance, for longer periods of time than at any other period over the structure's entire life span. With each evaluation, the effective age choice must be reconsidered based on the actual conditions encountered at the current date, taking into account any changes that may have taken place since the last appraisal. Neglect or weather extremes could have accelerated condition and age, while major repairs will correct deficiencies to a like-new condition, lowering the effective age and starting the cycle all over again. Operating extremes, such as abrupt increases or decreases in plant or equipment activity from normal or designed usage or excessive rental turnover can certainly impact the rate of wear and tear and maintenance performed.

Certain industries such as fast food, hotels, markets, and other retail chains which are highly competitive and responsive to rapidly changing consumer tastes and/or investor holding periods, may require frequent major renovations and fixture change-outs in search of market share. Consequently, excessive functional and separate economic obsolescence rates that move much faster than normal physical deterioration, may require special consideration, depending on the value sought, before establishing an appropriate effective age and/or typical life expectancy with which to work. Due to the unique character of certain outdoor recreational facilities like golf courses, special attention should be paid to the possible shorter lives of individual land improvements which are subject not only to the constant exposure of the elements, but to the wear and tear from selective use or play. The functionality, composition and age or maturity of the various features that make up each improvement or golf hole can also have a great effect on a facility's maintenance, operational and reserve schedules and expenses, which in turn affect condition, usability or playability and ultimately, depreciation.

CONDITION RATING INDICATORS

Excellent Condition – All items that can normally be repaired or refinished have recently been corrected, such as new roofing, paint, furnace overhaul, state-of-the-art components, etc. With no functional inadequacies of any consequence and all major short-lived components in like-new condition, the overall effective age has been substantially reduced upon complete revitalization of the structure regardless of the actual chronological age.

Very Good Condition – All items well maintained, many having been overhauled and repaired as they've shown signs of wear, increasing the life expectancy and lowering the effective age, with little deterioration or obsolescence evident and a high degree of utility.

Good Condition – No obvious maintenance required, but neither is everything new. Appearance and utility are above the standard, and the overall effective age will be lower than the typical property.

Average Condition – Some evidence of deferred maintenance and normal obsolescence with age in that a few minor repairs are needed, along with some refinishing. But with all major components still functional and contributing toward an extended life expectancy, effective age and utility are standard for like properties of its class and usage.

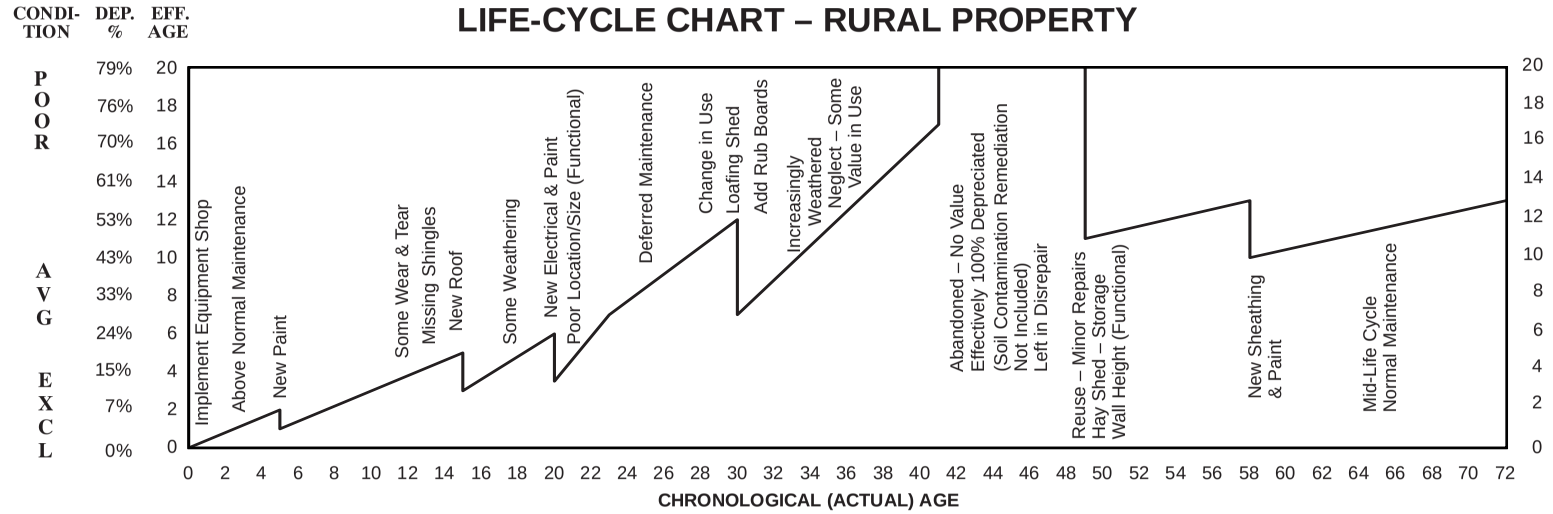
Fair Condition (Badly Worn) – Much repair needed. Many items need refinishing or overhauling, deferred maintenance obvious, inadequate building utility and services all shortening the life expectancy and increasing the effective age.

Poor Condition (Worn Out) – Repair and overhaul needed on painted surfaces, roofing, plumbing, heating, numerous functional inadequacies, substandard utilities, etc. (found only in extraordinary circumstances). Excessive deferred maintenance and abuse, limited value-in-use, approaching abandonment or major reconstruction; reuse or change in occupancy is imminent. Effective age is near the end of the scale regardless of the actual chronological age.

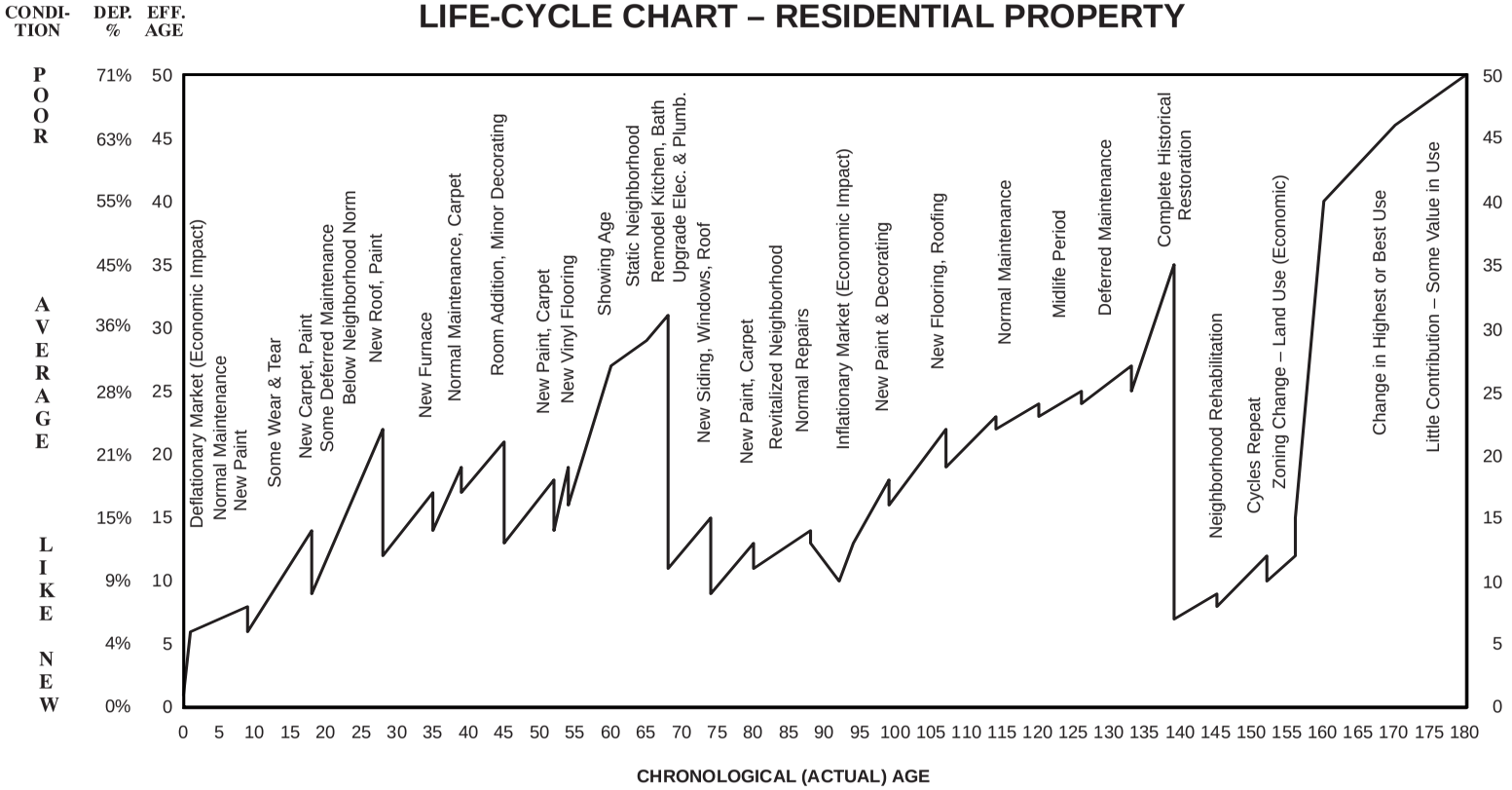
DEPRECIATION

Examples of the life cycles of a rural and a residential property are displayed in chart form to the right. The theoretical depreciation shown is reflective of many scenarios, taking into account all physical, functional and external obsolescence at different times and under different conditions. Actual effective age changes must take into account the effects of current local property use, maintenance, climate, neighborhood vitality, economics, turnover, etc., associated with the property in question at the time of valuation. Life cycles can extend over long periods of time or can be quite short due to excessive functional or economic obsolescence or marketing or investor policies. The appraiser must carefully consider the property type and usage, and the type of appraisal and value sought before establishing a proper life expectancy and effective age. The depreciation curves in this section generally account for normal deterioration and obsolescence only. Any abnormal or excessive functional and external obsolescence that measurably affects the property must be considered separately, and therefore is not inherently included in the actual normal depreciation tables that follow.

LIFE-CYCLE CHART – RURAL PROPERTY



LIFE-CYCLE CHART – RESIDENTIAL PROPERTY



LIFE EXPECTANCY GUIDELINES

TYPICAL BUILDING LIVES

Below are recommended life expectancies, in years, of buildings included in the *Marshall Valuation Service* by type of occupancy and class and quality of construction. These are based on appraisers' opinions and studies of actual mortality, condition of survivors, and ages at which major reconstruction or change of occupancy has taken place. These life expectancy studies do not include cases of mortality from excessive economic or environmental changes, shortened specialty product use, poor business management, natural disasters, etc. Some occupancies, such as hotels, fast-food restaurants and other retail chains or service stations, etc., are completely remodeled or rebuilt long before the end of their useful life as a matter of marketing policy. Certain locations may be considered atypical due to harsh weather extremes. In these cases, the appraiser must carefully consider the purpose of the appraisal and the value sought before establishing an appropriate life expectancy and effective age with which to work.

OCCUPANCY — CLASS	A	B	C	D	S
SECTIONS 11 & 41, APARTMENTS, CLUBS AND HOTELS					
Apartments, mid-, high-rise, good, excellent and luxury	60	60	55	50	50
low cost and average	55	55	50	45	45
City clubs, good	60	60	50	-----	-----
average	50	50	45	-----	-----
Clubhouses and senior centers, good and excellent	-----	-----	45	40	40
low cost and average	-----	-----	40	35	35
Country clubs, good and excellent	-----	-----	50	45	-----
low cost and average	-----	-----	45	40	40
Dormitories, good and excellent	60	60	55	50	-----
low cost and average	50	50	45	40	40
Fraternity houses, good and excellent	-----	-----	55	50	-----
average	-----	-----	50	45	-----
Group care homes, good, very good and excellent	-----	-----	55	50	-----
average	-----	-----	50	45	-----
low cost	-----	-----	45	40	-----
Health clubs and spas, good and excellent	-----	-----	45	40	40
low cost and average	-----	-----	40	35	35
Homes for the elderly, good	60	60	50	45	45
low cost and average	50	50	45	40	40
Hotels, full service, good and excellent	60	60	50	45	-----
average	55	55	50	45	-----
low cost	50	50	45	40	-----
limited service, excellent	60	60	50	-----	-----
good	55	55	50	45	-----
low cost and average	50	50	45	40	40
Mortuaries, excellent	-----	-----	50	50	-----
average and good	50	50	45	45	45
low cost	-----	-----	40	35	35
Recreational (pool) enclosures, good	-----	-----	45	40	40
average	-----	-----	40	35	35
low cost	-----	-----	35	25	20
cheap	-----	-----	-----	-----	10
Rectories, good and excellent	-----	-----	55	50	-----
average	-----	-----	50	45	-----
low cost	-----	-----	45	40	-----
Rooming houses, good	-----	-----	55	50	-----
average	-----	-----	50	45	-----
low cost and fair	-----	-----	45	40	-----
Row houses, high-rise, good and excellent	-----	-----	60	55	-----
low cost and average	-----	-----	55	50	-----
SECTIONS 12 & 42, RESIDENCES, MULTIPLES (GARDEN APTS.) AND MOTELS					
Baled-straw homes, good	-----	-----	-----	50	-----
average	-----	-----	-----	45	-----
low cost	-----	-----	-----	40	-----
Bath houses, excellent	-----	-----	65	60	-----
good	-----	-----	60	55	-----
average	-----	-----	55	50	-----
low cost	-----	-----	45	40	-----
cheap	-----	-----	30	20	-----

OCCUPANCY — CLASS	A	B	C	D	S
SECTIONS 12 & 42, RESIDENCES, MULTIPLES (GARDEN APTS.) AND MOTELS (Cont.)					
Assisted living/retirement complexes, excellent	-----	-----	60	55	-----
average and good	-----	-----	55	50	50
low cost and fair	-----	-----	50	45	45
Bed and breakfast inns, excellent	-----	-----	65	60	-----
good	-----	-----	60	55	-----
average	-----	-----	55	50	-----
low cost	-----	-----	50	45	-----
Earth-sheltered homes, good and excellent	-----	-----	60	-----	-----
low cost and average	-----	-----	55	-----	-----
Guest cottages, excellent	-----	-----	50	45	-----
good	-----	-----	45	40	-----
average	-----	-----	40	35	-----
low cost and fair	-----	-----	35	30	-----
cheap	-----	-----	-----	25	-----
Lodges, very good and excellent	-----	-----	50	45	-----
good	-----	-----	45	40	-----
average	-----	-----	40	35	-----
low cost and fair	-----	-----	35	30	-----
cheap	-----	-----	35	30	-----
Log homes, excellent	-----	-----	-----	55	-----
average and good	-----	-----	-----	50	-----
low cost	-----	-----	-----	45	-----
Motels and extended-stay motels, good and excellent	-----	-----	45	40	-----
average	-----	-----	40	35	35
fair, low cost and cheap	-----	-----	35	30	-----
Multiple residences, excellent	-----	-----	60	55	-----
good	-----	-----	55	50	50
average	-----	-----	55	50	50
low cost and fair	-----	-----	50	45	-----
Office apartments, good and excellent	-----	-----	45	40	-----
average	-----	-----	40	35	35
low cost	-----	-----	35	30	-----
cheap	-----	-----	35	30	-----
Resort cottages and cabins, good	-----	-----	-----	50	-----
average	-----	-----	-----	45	-----
low	-----	-----	-----	35	-----
substandard	-----	-----	-----	20	-----
Senior citizen multiples and town houses, excellent	-----	-----	60	55	-----
average and good	-----	-----	55	50	50
low cost and fair	-----	-----	50	45	-----
Single-family and guest houses, excellent and high value	-----	-----	65	60	-----
average, good and very good	-----	-----	60	55	55
fair quality	-----	-----	55	50	-----
low cost	-----	-----	50	45	-----
substandard	-----	-----	35	30	-----

LIFE EXPECTANCY GUIDELINES

TYPICAL BUILDING LIVES

OCCUPANCY CLASS	A	B	C	D	S
SECTIONS 12 & 42, RESIDENCES, MULTIPLES (GARDEN APTS.) AND MOTELS (Continued)					
Single-family, historical residences, excellent	----	----	70	65	----
good and very good	----	----	65	60	----
low cost, fair and average	----	----	60	55	----
Town and row houses, excellent	----	----	60	55	----
good	----	----	55	50	50
average	----	----	55	50	50
low cost and fair	----	----	50	45	----
Tropical houses, good	----	----	55	----	----
average	----	----	50	----	----
low cost	----	----	45	----	----
Yurts, good	----	----	----	30	----
average	----	----	----	20	----
low cost	----	----	----	15	----
SECTIONS 13 & 43, STORES AND COMMERCIAL BUILDINGS					
Banquet halls, excellent	----	----	50	45	----
good	----	----	45	40	40
average	----	----	40	35	35
low cost	----	----	35	30	30
Barber and beauty shops, good	45	45	40	35	35
low cost and average	40	40	35	30	30
Bars and taverns, good	----	----	45	40	----
average	45	45	40	40	40
low cost	----	----	40	35	35
Cafeterias, excellent	----	----	45	40	----
good	45	45	35	35	35
low cost and average	40	40	35	30	30
Cocktail lounges, good and excellent	45	45	40	40	40
average	40	40	40	35	35
low cost	----	----	35	35	35
Convenience stores, excellent	----	----	45	40	40
average and good	45	45	40	35	35
low cost	----	----	35	30	30
Mini-marts, good and excellent	----	----	40	35	30
low cost and average	----	----	35	30	25
Dairy sales buildings, average	----	----	35	30	30
Department stores, good and excellent	55	55	50	----	----
low cost and average	50	50	45	----	----
mall anchor stores, average and good	50	50	45	40	----
low cost	45	45	40	35	35
Dining atriums and playrooms, good to excellent	----	----	35	35	35
low cost and average	----	----	30	30	30
cheap	----	----	----	----	10
Discount stores, good	----	----	40	35	35
low cost and average	40	40	35	30	30
Drug stores, excellent	----	----	45	40	----
average and good	45	45	40	35	----
low cost	----	----	35	30	30
Fast-food restaurants, very good and excellent	40	40	35	35	35
low cost, average and good	----	----	30	30	30
Florist shops, excellent	----	----	45	40	40
average and good	50	50	40	35	35
low cost	----	----	35	30	30
Kiosks, miscellaneous stands				5 to 20 years	

OCCUPANCY CLASS	A	B	C	D	S
SECTIONS 13 & 43, STORES AND COMMERCIAL BUILDINGS (Continued)					
Laundry/dry cleaning, good	----	----	45	40	40
average	----	----	40	35	35
Laundromats, average	----	----	35	30	30
Luxury boutiques, good	60	60	55	50	----
low cost and average	55	55	50	45	----
Markets and supermarkets, excellent	----	----	45	40	40
average and good	40	40	40	35	35
low cost	----	----	35	30	30
Modular, resturants excellent	----	----	----	----	35
low cost, average and good	----	----	----	----	30
Restaurants, very good and excellent	45	45	40	40	40
average and good	40	40	35	35	35
low cost	----	----	30	30	30
Retail stores, good and excellent	55	55	50	45	45
average	50	50	45	40	40
low cost	45	45	40	40	40
Roadside markets, excellent	----	----	40	35	35
good	----	----	35	30	30
average	----	----	30	25	25
low cost	----	----	----	20	20
cheap	----	----	----	15	----
Shopping centers, neighborhood, good	----	----	45	40	----
average	----	----	40	35	35
low cost	----	----	35	30	30
community, good and excellent	----	----	50	45	45
average	----	----	45	40	40
regional, good and excellent	55	55	55	50	----
average	----	----	50	45	45
regional discount, good	50	50	50	45	----
average	45	45	45	40	40
mixed retail centers with office/residential units, good	----	----	50	45	----
low cost and average	----	----	45	40	----
Snack bars, excellent	----	----	35	35	----
good	----	----	35	30	----
average	----	----	30	25	25
low cost	----	----	25	20	20
cheap	----	----	20	15	15
Truck stop restaurants, good	----	----	35	35	35
average	----	----	30	30	30
Warehouse discount stores, good	----	----	35	30	30
low cost and average	----	----	30	30	30
mega discount, average and good	----	----	35	----	30
low cost	----	----	30	----	30
food, good	----	----	40	35	35
average	----	----	35	30	30
low cost	----	----	30	30	30
showroom, good	----	----	40	35	35
low cost and average	----	----	35	30	30
Winery shops, excellent	----	----	50	45	----
good	----	----	45	40	----
average	----	----	40	35	35
low cost	----	----	35	30	30

LIFE EXPECTANCY GUIDELINES

TYPICAL BUILDING LIVES

OCCUPANCY CLASS	A	B	C	D	S
SECTIONS 14 & 44, GARAGES, INDUSTRIALS AND WAREHOUSES					
Armories, good and excellent	-----	-----	55	50	-----
average	-----	-----	50	40	40
Automotive service centers, good	-----	-----	45	40	40
average	-----	-----	40	35	35
low cost	-----	-----	35	30	30
Broadcasting facilities, good and excellent	55	55	50	45	45
average	50	50	45	40	40
low cost	45	45	40	35	35
Cold storage facilities, excellent	-----	-----	50	-----	45
average and good	50	50	45	40	40
low cost and fair	-----	-----	40	35	35
Complete auto dealerships, good and excellent	50	50	45	40	40
average	45	45	40	35	35
low cost	-----	-----	35	30	30
Computer centers, good and excellent	50	50	45	40	40
low cost and average	45	45	40	35	35
Creameries, good	-----	-----	45	45	45
average	45	45	35	30	30
low cost	-----	-----	25	20	20
Garages, municipal service, excellent	-----	-----	45	-----	40
average and good	-----	-----	40	35	35
Service and repair garages, good and excellent	-----	-----	40	35	35
low cost and average	40	40	35	30	30
Service garage sheds, good	-----	-----	35	30	30
low cost and average	-----	-----	30	25	25
Storage, average	45	45	40	35	35
Hangars, maintenance, excellent	-----	-----	45	-----	40
good	-----	-----	40	-----	40
average	-----	-----	40	35	35
low cost	-----	-----	35	30	30
Storage, excellent	-----	-----	40	-----	40
good	-----	-----	40	-----	35
average	-----	-----	35	30	30
low cost	-----	-----	30	30	30
cheap	-----	-----	-----	20	20
T-hangars, average	-----	-----	30	-----	30
low cost	-----	-----	-----	20	20
Industrial flex-mall buildings, average and good	-----	-----	50	40	40
low cost	-----	-----	40	35	35
Industrials, engineering, good and excellent	55	55	50	45	45
average	50	50	45	40	40
low cost	50	50	40	35	35

OCCUPANCY CLASS	A	B	C	D	S
SECTIONS 14 & 44, GARAGES, INDUSTRIALS AND WAREHOUSES (Continued)					
Industrials, manufacturing, heavy, good and excellent	60	60	55	-----	50
low cost and average	55	55	50	45	45
light, good	50	50	45	-----	40
average	50	50	40	35	35
low cost	45	45	40	35	35
Laboratory buildings, good and excellent	55	55	50	45	45
low cost and average	50	50	45	40	40
Lofts, excellent	60	60	-----	-----	-----
average and good	55	55	50	40	40
low cost	50	50	40	35	-----
Mini-lube garages, good and excellent	-----	-----	40	35	35
low cost and average	-----	-----	35	30	30
Mini-warehouses, low and high rise, good	-----	-----	45	40	40
average	45	45	40	35	35
low cost	-----	-----	35	30	30
Parking structures/parkades, good	45	45	-----	-----	-----
low cost and average	40	40	-----	-----	35
cheap	-----	-----	-----	-----	30
Passenger terminals, very good and excellent	45	45	40	40	-----
average and good	40	40	35	35	35
low cost and fair	35	35	30	30	30
control towers, good	35	35	-----	-----	-----
average	30	30	-----	-----	-----
low cost	25	25	-----	-----	-----
Post offices, main and branch, good and excellent	60	60	55	50	50
low cost and average	55	55	50	45	45
mail processing facilities, good	-----	-----	50	-----	45
average	50	50	45	-----	40
Showrooms, good and excellent	50	50	45	40	40
average	45	45	40	35	35
low cost	-----	-----	35	30	30
Transit warehouses, average and good	-----	-----	45	40	40
Underground parking garages, average	45	45	-----	-----	-----
Warehouses, distribution, good and excellent	55	55	50	45	45
average	50	50	45	40	40
low cost	-----	-----	40	35	35
Storage and mega storage, excellent	-----	-----	50	-----	45
average and good	50	50	45	40	40
cheap and low cost	45	45	40	35	35
Miscellaneous buildings, excellent	60	60	55	45	45
average and good	55	55	50	40	40
low cost	50	50	40	35	35
Misc. structures, shipping docks	-----	-----	-----	40	40
loading docks, excellent	-----	-----	-----	35	35
average and good	-----	-----	-----	30	30
low cost	-----	-----	-----	25	25

LIFE EXPECTANCY GUIDELINES

TYPICAL BUILDING LIVES

OCCUPANCY CLASS	A	B	C	D	S
SECTIONS 15 & 45, BANKS, OFFICES AND PUBLIC BUILDINGS					
Atriums, good and excellent	60	60	55	50	50
average	55	55	50	45	45
Banks, branch and central, good and excellent	60	60	55	50	50
average	55	55	50	45	45
low cost	50	50	45	40	40
mini, drive-up, good and excellent	55	55	50	45	45
low cost and average	50	50	45	40	40
Convalescent hospitals, good and excellent	50	50	45	40	-----
low cost and average	45	45	40	35	35
Dispensaries and urgent care, good	50	50	40	35	35
average	45	45	35	30	30
Fire stations, staffed, good, very good and excellent	50	50	45	40	40
low cost and average	45	45	40	35	35
volunteer, good	-----	-----	40	35	35
low cost and average	40	40	35	30	30
General hospitals, good and excellent	50	50	45	40	-----
low cost and average	45	45	40	35	35
Governmental buildings, good and excellent	60	60	55	50	-----
low cost and average	55	55	50	40	40
Community service buildings, excellent	-----	-----	55	50	-----
average and good	55	55	50	40	40
low cost	50	50	45	35	35
Jails, correctional facilities, good and excellent	55	55	45	40	-----
low cost and average	50	50	40	35	35
Police stations, good and excellent	55	55	50	45	-----
average	50	50	45	40	-----
low cost	45	45	40	-----	-----
Kennels, very good and excellent	-----	-----	45	40	-----
average and good	-----	-----	40	35	35
low cost	-----	-----	35	30	30
cheap	-----	-----	25	20	20
Medical offices, good and excellent	50	50	45	40	40
low cost and average	45	45	40	35	35
Dental clinics, good and excellent	-----	-----	45	40	40
low cost and average	-----	-----	40	35	35
Offices, good and excellent	60	60	55	50	50
average	55	55	50	45	45
low cost	50	50	45	40	40
Outpatient (surgical) centers, good and excellent	50	50	45	40	-----
low cost and average	45	45	40	35	35
Parking levels, excellent	60	60	-----	-----	-----
good	55	55	50	50	50
average	50	50	45	45	45
low cost	30	30	25	25	25
cheap	25	25	20	20	20
Public libraries, good, very good and excellent	60	60	55	50	50
average	55	55	50	45	45
low cost	-----	-----	45	40	40
Veterinary hospitals, excellent	-----	-----	45	40	-----
average and good	45	45	40	35	35
low cost	-----	-----	35	30	30
Misc. buildings: firing ranges, good and excellent	-----	-----	45	40	40
low cost and average	-----	-----	40	35	35

OCCUPANCY CLASS	A	B	C	D	S
SECTIONS 16 & 46, CHURCHES, THEATERS AND AUDITORIUMS					
Arcade buildings, good and excellent	-----	-----	45	40	-----
average	-----	-----	40	35	35
low cost	-----	-----	35	30	30
Auditoriums, excellent	55	55	50	45	-----
average and good	50	50	45	40	40
low cost	-----	-----	40	35	35
Bowling centers, good and excellent	-----	-----	40	35	35
low cost and average	-----	-----	35	30	30
Casinos, very good	-----	-----	50	-----	-----
good	-----	-----	45	40	-----
average	-----	-----	40	35	35
low cost	-----	-----	35	30	30
Churches, sanctuaries, narthexes, classrooms, excellent	60	60	60	50	-----
good	60	60	50	45	45
average	50	50	45	40	40
cheap and low cost	-----	-----	40	35	35
Community recreation centers, good and excellent	50	50	45	40	40
low cost and average	45	45	40	35	35
Convention centers, good and excellent	55	55	50	45	-----
average	50	50	45	40	40
low cost	45	45	40	35	35
Fellowship halls, good and excellent	50	50	45	40	40
low cost and average	45	45	40	35	35
cheap	-----	-----	-----	30	30
Fitness centers, good and excellent	50	50	45	40	40
average	45	45	40	35	35
Fraternal buildings, excellent	55	55	50	45	-----
good	50	50	45	40	-----
average	45	45	40	35	35
low cost	-----	-----	35	30	30
Handball/racquetball clubs, good	-----	-----	45	40	40
average	-----	-----	40	35	35
Indoor tennis clubs, good	-----	-----	45	40	40
average	-----	-----	40	35	35
low cost	-----	-----	35	30	30
Museums, good and excellent	60	60	55	50	-----
average	55	55	50	45	-----
low cost	-----	-----	40	35	35
Pavillions, excellent	-----	-----	50	45	-----
very good	-----	-----	45	40	-----
good	-----	-----	40	35	-----
fair and averge	-----	-----	35	30	30
low cost	-----	-----	30	25	25
cheap	-----	-----	25	20	20
Skating rinks, good and excellent	50	50	45	40	40
average	45	45	40	35	35
low cost	-----	-----	35	30	30
Theaters, live-stage presentation, good and excellent	50	50	45	40	-----
fair and average	45	45	45	40	40
low cost	-----	-----	40	35	35
Motion picture/cinema, very good and excellent	50	50	45	40	-----
average and good	45	45	40	35	35
low cost and fair	-----	-----	35	30	30
Visitor centers, good and excellent	55	55	50	45	-----
average	50	50	45	40	40
low cost	-----	-----	40	35	35

TYPICAL BUILDING LIVES

OCCUPANCY	CLASS	A	B	C	D	S
SECTIONS 17 & 47, FARM BUILDINGS						
Arenas, excellent		-----	-----	40	35	35
good		-----	-----	35	30	30
average		-----	-----	30	25	25
cheap and low cost		-----	-----	20	15	15
Arena shelters, good		-----	-----	-----	-----	25
average		-----	-----	-----	-----	20
low cost		-----	-----	-----	15	15
Barns, freestall and confinement, good and excellent		-----	-----	-----	30	30
average		-----	-----	-----	25	25
cheap and low cost		-----	-----	-----	15	15
general purpose, good		-----	-----	35	30	30
average		-----	-----	30	25	25
low cost		-----	-----	20	15	15
special purpose, excellent		-----	-----	40	35	-----
good		-----	-----	35	30	-----
low cost and average		-----	-----	30	25	-----
Calving barn shed, good		-----	-----	-----	20	20
low cost and average		-----	-----	-----	15	15
Commodity storage sheds, average		-----	-----	25	20	20
Corncrib bins, good and excellent		-----	-----	-----	15	-----
low cost and average		-----	-----	-----	10	-----
Corncrib buildings, spaced board, average and good		-----	-----	-----	20	-----
wire mesh, good		-----	-----	-----	20	-----
average		-----	-----	-----	15	-----
Dairies/milking parlors, good and excellent		-----	-----	35	30	30
average		-----	-----	30	25	25
low cost		-----	-----	20	15	15
Feed handling and mixing, average		-----	-----	-----	20	20
Feeder barns/loafing sheds, good		-----	-----	-----	20	20
low cost and average		-----	-----	-----	15	15
Fruit-packing barns, average		-----	-----	30	25	25
Hay sheds/shelters, good		-----	-----	-----	20	20
average		-----	-----	-----	15	15
low cost		-----	-----	-----	10	10
Hog barns, breeding, farrowing, good and excellent		-----	-----	35	30	30
average		-----	-----	30	25	25
cheap and low cost		-----	-----	20	15	15
finishing, average		-----	-----	25	20	20
cheap and low cost		-----	-----	20	15	15
nursery, good		-----	-----	35	30	30
average		-----	-----	30	25	25
Hog sheds and modified sheds, average		-----	-----	25	20	20
cheap and low cost		-----	-----	20	15	15
Hunting shelters, good		-----	-----	-----	15	-----
cheap, low cost and average		-----	-----	-----	10	-----

OCCUPANCY	CLASS	A	B	C	D	S
SECTIONS 17 & 47, FARM BUILDINGS (Continued)						
Implement, arch-rib buildings, good		-----	-----	-----	30	30
average		-----	-----	-----	25	25
low cost		-----	-----	-----	20	20
implement/equipment buildings, good		-----	-----	30	25	25
low cost and average		-----	-----	25	20	20
implement/equipment sheds, average		-----	-----	25	20	20
low cost		-----	-----	20	15	15
Individual livestock shelters, good and excel.		-----	-----	-----	15	-----
low cost and average		-----	-----	-----	10	-----
Labor dormitories, good		-----	-----	30	25	25
average		-----	-----	25	20	20
low cost		-----	-----	20	15	-----
Lean-tos, equestrian, average		-----	-----	-----	25	25
low cost		-----	-----	-----	15	15
farm utility, good		-----	-----	-----	20	20
low cost and average		-----	-----	-----	15	15
Milkhouses and sheds, good		-----	-----	35	30	-----
average		-----	-----	30	25	-----
Potato storage buildings, good		-----	-----	30	25	25
average		-----	-----	25	20	20
cheap and low cost		-----	-----	20	15	15
Poultry, cage operation, enclosed/screened, good		-----	-----	30	25	25
average		-----	-----	25	20	20
cheap and low cost		-----	-----	20	15	15
floor operation, breeder/broiler, turkey, good		-----	-----	25	20	20
average		-----	-----	20	15	15
cheap, low cost and fair		-----	-----	-----	15	15
Sheep barns, average and good		-----	-----	-----	25	25
sheds, good		-----	-----	-----	25	25
average		-----	-----	-----	20	20
cheap and low cost		-----	-----	-----	15	15
Stables, good		-----	-----	35	30	30
average		-----	-----	30	25	25
low cost		-----	-----	20	15	15
high-value estate stables, excellent		-----	-----	50	45	-----
good		-----	-----	45	40	-----
low-cost and average		-----	-----	40	35	35
Tobacco barns, flue curing, average		-----	-----	25	20	20
air curing, average		-----	-----	-----	25	-----
low cost		-----	-----	-----	20	-----
Toolshed buildings, good		-----	-----	25	20	-----
average		-----	-----	-----	15	-----
low cost		-----	-----	-----	10	-----
Transient labor cabins, average		-----	-----	-----	15	-----
Utility/arch-rib buildings, good		-----	-----	-----	25	25
average		-----	-----	-----	20	20
low cost		-----	-----	-----	15	15
Utility buildings, farm/grain storage, very good		-----	-----	-----	25	-----
good		-----	-----	25	20	20
low cost and average		-----	-----	20	15	15

LIFE EXPECTANCY GUIDELINES

TYPICAL BUILDING LIVES

OCCUPANCY CLASS	A	B	C	D	S
SECTIONS 17 & 47, FARM BUILDINGS (Continued)					
Utility storage/loafing sheds, good	-----	-----	-----	20	-----
average	-----	-----	-----	15	-----
low cost	-----	-----	15	10	10
Vegetable storage buildings, good	-----	-----	-----	-----	35
low cost and fair	-----	-----	-----	-----	30
Grain elevator facilities	-----	60	-----	55	-----
Silos	-----	-----	30	25	25
bunker silos, good	-----	-----	25	20	-----
average	-----	-----	20	15	-----
low cost	-----	-----	15	10	-----
Shelters, misc. sheds and prefab. outbuildings, good	-----	-----	-----	20	20
average	-----	-----	-----	15	15
low cost	-----	-----	-----	10	10
COMMERCIAL SHEDS AND UTILITY BUILDINGS					
Bag fertilizer storage, average	-----	-----	-----	30	30
Boat storage buildings, good	-----	-----	-----	-----	30
average	-----	-----	-----	25	25
low cost	-----	-----	-----	20	20
Boat storage sheds, good	-----	-----	-----	20	20
low cost and average	-----	-----	-----	15	15
Bulk fertilizer storage, average	-----	-----	35	30	30
Bulk oil storage, average	-----	-----	-----	30	30
Cold storage buildings, good	-----	-----	40	35	35
average	-----	-----	35	30	30
low cost	-----	-----	30	25	25
Commodity warehouse, light commercial, good	-----	-----	35	30	30
average	-----	-----	30	25	25
low cost	-----	-----	-----	20	20
Controlled atmosphere storage, average	-----	-----	35	30	30
Cotton gin buildings, average	-----	-----	-----	-----	30
low cost	-----	-----	-----	-----	25
Dehydrator buildings, average	-----	-----	35	-----	-----
Equipment shop buildings, good	-----	-----	35	30	30
average	-----	-----	30	25	25
Equipment sheds, good	-----	-----	30	25	25
average	-----	-----	25	20	20
Flathouse storage buildings, good	-----	-----	45	40	40
average	-----	-----	35	30	30
Golf cart storage buildings, good	-----	-----	-----	35	30
average	-----	-----	-----	30	25
Golf starter booths, excellent	-----	-----	40	35	-----
good	-----	-----	35	30	25
average	-----	-----	25	20	20
low cost	-----	-----	-----	15	10
Greenhouses, straight wall, very good and excellent	-----	-----	-----	-----	40
good	-----	-----	-----	-----	35
average	-----	-----	-----	20	25
fair	-----	-----	-----	15	20
cheap and low cost	-----	-----	-----	10	15
hoop structures, very good	-----	-----	-----	-----	35
good	-----	-----	-----	-----	30
average	-----	-----	-----	-----	20
fair	-----	-----	-----	-----	15
cheap and low cost	-----	-----	-----	10	10
Lath shade houses, average	-----	-----	-----	20	25
shade shelters, low cost and average	-----	-----	-----	10	10

OCCUPANCY CLASS	A	B	C	D	S
SECTIONS 17 & 47, COMMERCIAL SHEDS AND UTILITY BUILDINGS (Continued)					
Lumber storage buildings, good	-----	-----	-----	25	25
average	-----	-----	-----	20	20
low cost	-----	-----	-----	15	15
Lumber storage sheds, good	-----	-----	-----	25	20
low cost and average	-----	-----	-----	15	15
Manufacturing, light commerical utility, good	-----	-----	-----	30	35
average	-----	-----	-----	25	30
low cost	-----	-----	-----	20	25
Material storage buildings, good	-----	-----	30	25	25
average	-----	-----	25	20	20
Material storage sheds, average	-----	-----	25	20	20
low cost	-----	-----	20	15	15
Material shelters, good	-----	-----	-----	25	30
average	-----	-----	-----	20	20
low cost	-----	-----	-----	15	15
Prefabricated storage sheds, good and excellent	-----	-----	-----	20	20
average	-----	-----	-----	15	15
low cost	-----	-----	-----	10	10
secure storage, average and good	-----	-----	25	-----	20
low cost	-----	-----	-----	-----	15
Seed processing storage, average	-----	-----	-----	30	30
Shed office structures, good	-----	-----	40	35	35
average	-----	-----	35	30	30
low cost	-----	-----	-----	25	25
Utility buildings and arch-rib, light commercial, good	-----	-----	35	30	30
average	-----	-----	30	25	25
low cost	-----	-----	-----	20	20
SECTIONS 18 & 48, ELEMENTARY AND SECONDARY SCHOOLS					
Schools, Complete plants,					
Daycare centers, good and excellent	-----	-----	45	40	-----
low cost and average	45	45	40	35	35
Elementary, good and excellent	50	50	45	40	40
average	45	45	45	40	40
low cost	-----	-----	40	35	35
Intermediate (junior high), good and excellent	50	50	45	40	40
average	45	45	45	40	40
low cost	-----	-----	40	35	35
High and alternative schools, good and excellent	50	50	45	40	40
average	45	45	45	40	40
low cost	-----	-----	40	35	35
Vocational schools, good and excellent	50	50	45	40	40
average	45	45	45	40	40
low cost	-----	-----	40	35	35
Administration buildings, excellent	55	55	50	45	-----
good	50	50	45	40	40
average	45	45	45	40	40
low cost	45	45	40	35	35
Bookstores, good	-----	-----	45	40	-----
average	45	45	40	35	35
low cost	40	40	35	30	30
Classrooms and special learning, good and excellent	50	50	45	40	40
low cost and average	45	45	40	35	35
cheap	-----	-----	35	30	30
Laboratories, good and excellent	50	50	45	40	40
low cost and average	45	45	40	35	35
Lecture, good and excellent	50	50	45	40	40
low cost and average	45	45	40	35	35

LIFE EXPECTANCY GUIDELINES

TYPICAL BUILDING LIVES

OCCUPANCY CLASS	A	B	C	D	S
SECTIONS 18 & 48, SCHOOL BUILDINGS (Continued)					
Field houses, excellent	50	50	45	40	40
average and good	45	45	40	35	35
low cost	-----	-----	35	30	30
cheap	-----	-----	-----	25	25
Fine arts buildings, excellent	-----	-----	45	-----	-----
average and good	45	45	40	35	35
low cost	-----	-----	35	30	30
Gymnasiums, excellent	50	50	45	40	-----
average and good	45	45	40	35	35
cheap and low cost	-----	-----	35	30	30
Institutional greenhouses, very good and excellent	-----	-----	-----	-----	40
good	-----	-----	-----	-----	35
fair and average	-----	-----	-----	25	30
low cost	-----	-----	-----	20	25
Maintenance buildings, good	-----	-----	35	30	30
average	-----	-----	30	25	25
Manual arts buildings, average and good	45	45	40	35	35
low cost	-----	-----	35	30	30
Media centers, libraries, good and excellent	60	60	55	50	50
average	55	55	50	45	45
low cost	50	50	45	40	40
Multipurpose buildings, excellent	-----	-----	45	-----	-----
average and good	45	45	40	35	35
low cost	-----	-----	35	30	30
Natatoriums, average and good	45	45	40	35	35
low cost	-----	-----	35	30	30
Relocatable classrooms and offices, excellent	-----	-----	-----	35	-----
good	-----	-----	-----	30	-----
average	-----	-----	-----	25	-----
low cost	-----	-----	-----	20	-----
cheap	-----	-----	-----	10	-----
Restroom buildings, good and excellent	-----	-----	35	30	-----
average	35	35	30	25	-----
low cost	-----	-----	25	20	20
cheap	-----	-----	20	15	15
Shower buildings, good and excellent	-----	-----	35	30	-----
average	35	35	30	25	25
low cost	-----	-----	25	20	20
cheap	-----	-----	20	15	15
COLLEGES AND UNIVERSITIES					
College level: entire school plant, excellent	60	60	55	50	-----
good	60	60	50	45	45
average	50	50	45	40	40
low cost	-----	-----	40	35	35
Arts and crafts buildings, excellent	60	60	55	-----	-----
good	60	60	50	45	45
average	50	50	45	40	40
low cost	-----	-----	40	35	35
Classrooms, excellent	60	60	55	50	-----
good	60	60	50	45	45
average	50	50	45	40	40
low cost	-----	-----	40	35	35

OCCUPANCY CLASS	A	B	C	D	S
SECTIONS 18 & 48, SCHOOL BUILDINGS (Continued)					
College library, good and excellent	60	60	55	50	50
average	55	55	50	45	45
low cost	50	50	45	40	40
College physical education, excellent	-----	-----	45	40	-----
average and good	45	45	40	35	35
low cost	-----	-----	35	30	30
Commons, excellent	60	60	55	50	-----
good	60	60	50	45	45
average	50	50	45	40	40
low cost	-----	-----	40	35	35
Lecture halls, excellent	-----	-----	55	-----	-----
good	60	60	50	45	45
average	50	50	45	40	40
Science buildings, excellent	60	60	55	50	-----
good	60	60	50	45	45
average	50	50	45	40	40
low cost	50	50	40	35	35
Technical trades buildings, good	60	60	50	45	45
average	50	50	45	40	40
low cost	-----	-----	40	35	35
SECTION 64, MISCELLANEOUS BUILDINGS					
Car and truck washes, automatic, excellent	-----	-----	30	30	30
good	-----	-----	30	25	30
average	-----	-----	25	20	25
low cost	-----	-----	20	20	20
drive-thru and self-serve, good	-----	-----	30	25	30
average	-----	-----	25	20	25
low cost	-----	-----	20	15	20
canopies, very good and excellent	-----	-----	30	30	30
good	-----	-----	25	25	25
fair and average	-----	-----	20	20	20
cheap and low cost	-----	-----	15	15	15
Greenhouses, residential, good	-----	-----	-----	35	40
average	-----	-----	-----	25	30
low cost	-----	-----	-----	15	20
Solar rooms, excellent	-----	-----	-----	45	50
good	-----	-----	-----	40	45
average	-----	-----	-----	35	40
low cost	-----	-----	-----	30	35
Service stations, excellent	-----	-----	25	25	25
good	-----	-----	25	20	20
average	-----	-----	20	20	20
cheap and low cost	-----	-----	-----	15	15
Service station food booths, good	-----	-----	-----	-----	25
low cost and average	-----	-----	-----	-----	20
Toll and guard booths, excellent	-----	-----	-----	-----	25
good	-----	-----	-----	-----	20
average	-----	-----	-----	-----	15
low cost	-----	-----	-----	-----	10
Miscellaneous prefabricated buildings	10 to 20 years				

LIFE EXPECTANCY GUIDELINES

REPLACEABLE COMPONENTS

When capitalizing the income of investment properties, it is necessary to include in the expenses an annual reserve for the replacement of various components which have a shorter life than the building as a whole (see Section 81). To estimate the annual reserve for replacement of a component, divide the estimated years of life into the total cost of the component. The following guide gives the most typical of such items and an estimated life under standard applications in years for each, subdivided by quality. Individual component lives can have a wide range depending on the loads and conditions placed on them, the method of installation, and appropriate maintenance and warranties. Lives may be shortened under severe requirements due to heavy or continuous wear, transient tenancy, corrosive contact and/or atmospheric conditions, high humidity, etc., or lengthened under very light usage, mild circumstances, protective coatings, etc. See pages 2 and 3 for further discussion. Costs for the various components may be selected from appropriate tables throughout the manual. The allocation of a component cost over its expected service life can also be used in establishing reserves for condominium or owners' association budgets or sinking funds, etc., and in the evaluation of life-cycle costing for use in the component selection or design alternative process (value engineering), for financial planning, energy analysis or audits, etc. For those items not listed, select the life for a component which has similar characteristics, modifying as necessary. For long-lived items use the typical life of the building or an appropriate extended life.

COMPONENT	LOW	AVG	GOOD	EXCL
APPLIANCES				
Major appliances, residential	10	12	15	18
Garage door openers	8	9	10	11
Garbage disposers, washing machines	6	8	10	12
Home electronics	5	7	9	12
Radio-intercom, paging systems	12	15	19	24
Telephone, antenna, dish systems	9	10	11	12
Vacuum-cleaning system	12	13	15	17
For multiresidential use, deduct from above	2	3	4	5
For commercial-grade appliances, add	2	2	2	3
FLOOR COVERING				
Access (computer) floor	10	12	15	18
Carpet and pad	4	5	7	10
Carpet tiles	5	6	8	10
Ceramic, quarry, precast terrazzo tile/pavers	25	30	34	40
Floor sealer	2	3	5	7
Indoor-outdoor carpet	3	5	7	10
Laminates	15	19	24	30
Linoleum	10	13	16	20
Rubber mats or artificial turf	3	4	5	6
Stone, slate, marble, granite, etc.	40	45	50	55
Terrazzo, bonded or epoxy	25	32	40	50
Vinyl composition tile or sheet	7	10	14	19
Vinyl or rubber tile or sheet	12	15	19	24
Wood flooring, hardwoods	35	40	45	50
softwoods	20	25	30	35
MISCELLANEOUS INTERIOR				
Acoustical ceiling tiles or panels	8	10	12	15
Built-in lockers, mail boxes, etc.	12	15	20	25
Cabinets, laminates, particle board	15	18	21	25
wood	20	25	30	35
Countertops, laminates	10	15	20	25
solid materials	20	25	30	35
stone	40	45	50	55
Doors, hollow core	18	20	22	25
solid	25	32	40	50
shower	5	9	15	25
hardware	10	15	20	25
Drapery	6	8	10	12
multiresidential	2	4	6	8
Partitions, demountable	16	20	25	30
fixed	20	25	30	40
folding	8	10	12	15
Paint	3	5	7	10
Saunas	16	20	25	30
Tile, glazed	20	25	35	45
Vertical blinds	5	7	11	16
miniblinds, multiresidential	4	5	7	10
Walk-in coolers	10	12	15	18
Wallpapers, carpet tiles, etc.	5	8	11	16
CONVEYING SYSTEMS				
Elevators, escalators and chairlifts	18	20	23	26
cable, closers, motors, controls	5	8	13	20
Pneumatic tube system	12	13	15	17
Dumbwaiter and dock levelers	13	16	20	25

COMPONENT	LOW	AVG	GOOD	EXCL
HEATING, VENTILATING AND AIR CONDITIONING				
Electric heaters, radiant	9	11	15	19
baseboard	13	16	20	24
heating rods	3	4	5	7
Forced-air heat and heat pumps	10	12	16	20
Hot water or steam heat	17	21	25	30
Heating and combined cooling plants	12	15	19	24
Package heating and cooling	5	8	13	20
Refrigerated air conditioning, central	10	13	16	20
Package refrigeration	5	7	10	15
Refrigerated coolers, window	7	9	11	14
Solar-heating systems	5	7	10	15
Unit heaters and thru-wall units	8	10	14	18
Wall or floor furnaces	10	13	16	20
Evaporative coolers	5	6	8	10
Exhaust and ventilating fans	6	9	12	18
Air ducts, galvanized steel	17	20	25	30
aluminum	15	19	25	32
fiberglass	14	17	22	28
duct insulation	12	15	19	24
Ancillary items:				
Controls, electric or electronic	9	11	13	16
pneumatic	14	16	18	20
Compressors	3	4	5	7
Fans and motors	14	16	18	20
Heating and cooling coils	10	12	14	17
Humidifiers and air washers	11	13	15	18
Circulation piping	25	27	30	33
piping insulation	13	15	17	20
Boilers	15	17	20	24
Industrial	16	20	25	31
Stokers and burners	12	14	17	21
Refrigeration machines, reciprocating	10	13	16	20
absorption or centrifugal	16	18	20	23
Water-cooling towers	8	13	20	33
Water evaporative condensers	9	12	15	20
ELECTRICAL				
Composite, fixtures and wire, residential	23	28	34	42
commercial	14	17	19	23
Emergency generators	20	22	25	28
Light fixtures, residential	15	20	26	35
commercial, all ceiling fans	7	10	14	20
Service wiring, residential	25	30	37	45
commercial	18	20	22	25
power wiring	20	23	26	30
Security alarm systems, residential	10	12	15	18
commercial	13	15	17	19
CCTV	4	5	6	7

LIFE EXPECTANCY GUIDELINES

REPLACEABLE COMPONENTS

COMPONENT	LOW	AVG	GOOD	EXCL
PLUMBING				
Composite, fixtures and pipe, residential	12	17	24	33
commercial	15	19	24	30
Plumbing fixtures	17	20	25	30
enameled steel and water fountains	5	7	10	14
fiberglass	10	13	16	20
Faucets and valves, softeners and purifiers	8	10	13	16
Water heaters, residential	3	5	7	12
commercial	8	11	15	20
Pumps, sump, well and waste water systems	8	10	12	15
fire	16	20	24	30
industrial and septic systems	11	15	20	27
Pipe, galvanized	12	16	22	30
copper	20	25	30	35
plastic	15	20	25	33
Sprinkler and fire protection systems	20	23	26	30
residential smoke detectors	10	12	14	17
smoke and heat detectors	13	15	17	20
fire hose and misc. equip.	7	9	11	13
Miscellaneous pumps, motors, controls	3	4	7	10
MISCELLANEOUS EXTERIOR				
Awnings and window screens	3	5	7	9
Canopies and patio covers	12	14	16	19
Exterior paint, masonry and metal	3	4	5	7
wood	2	4	5	6
sealers, silicone, etc.	1	2	3	5
waterproofing, bituminous	8	10	12	14
Fireplaces, chimneys, masonry	35	40	47	55
metal	20	25	30	35
Shutters	3	4	5	7
Sidings, aluminum, plywood and vinyl	15	20	25	35
wood lap and cement fiber	25	35	40	50
hardboard	10	15	20	30
masonry and masonry veneer	35	40	50	60
steel panels	20	30	35	40
stucco, natural	20	25	32	40
synthetic stucco	25	32	40	50
exterior insulation and finish system	10	15	25	35
Storefronts	18	20	22	25
entrance doors, automatic	7	10	14	20
overhead and mall fronts	8	10	12	15
Storm windows	8	10	12	14
ROOFING				
Built-up tar and gravel	10	13	16	20
Composition roll, mineral surface	8	10	13	16
Composition shingles	12	16	22	30
laminated	26	30	35	40
Elastomeric, single ply or modified bitumen	12	15	20	25
reinforced or fluid coat	25	30	35	42
Metal	13	20	30	45
Slate or copper	-----	-----	50	60
Tile, concrete or clay	30	36	42	50
Wood shakes	20	24	29	35
Wood shingles	16	20	24	30
Exposed insulation	19	20	22	24
Polyethylene film sheet	1	2	3	4
Woven fiber canvas tarp	3	5	7	10
Fiberglass panels	10	15	20	30
Gutters and downspouts	10	15	20	30
Skylights, glass	15	18	21	25
plastic	12	14	18	21
SITE IMPROVEMENTS				
Bulkheads, concrete	30	34	36	40
steel	25	29	31	35
wood	20	24	26	30

COMPONENT	LOW	AVG	GOOD	EXCL
SITE IMPROVEMENTS (Continued)				
Culverts, concrete	30	34	36	40
steel	10	14	18	25
Curbing, concrete	15	19	21	25
Flagpole	16	20	25	30
Fencing, chain link and security gates	13	15	17	20
masonry walls	20	25	30	35
vinyl	12	14	16	18
wood, including stock corrals	6	8	10	12
wind screens	4	5	6	7
Grating, steel	25	29	31	35
Landscaping, decorative shrubs, hedges, etc.	7	10	14	20
trees, deciduous	30	35	40	47
evergreen	20	25	32	40
Outdoor furniture	3	5	7	10
Outdoor lighting fixtures	10	13	16	20
Parking lots and docks, bumpers and gates	3	4	5	7
guard rails	7	9	11	13
striping	1	2	3	4
Paving, asphalt	5	8	11	17
reseal	4	5	6	7
concrete/brick	10	13	16	20
unreinforced	8	11	15	17
flagstone	25	30	35	40
gravel	3	5	7	10
granite	60	65	75	80
Signs	8	10	12	14
Snow-melting systems	8	10	12	14
Sprinklers, galvanized pipe	10	14	18	25
plastic pipe	15	18	22	28
controllers and pumping systems	8	9	11	13
Stairway and decks, wood	7	9	12	15
cement composition, composite and tropical hardwoods	12	15	20	25
Swimming pool, residential, aboveground	2	5	10	15
vinyl-lined, sand supported	10	15	20	30
fiberglass	15	20	25	30
concrete, gunite	15	20	25	35
replastering	10	12	15	18
mechanical equipment (spa, reduce by 50%)	4	5	7	10
vinyl liners	3	5	7	10
Swimming pool, commercial, concrete	15	20	25	30
stainless steel	25	30	35	40
mechanical equipment	10	12	15	20
Spas, portable	3	5	8	12
in-ground	8	12	20	25
Solar pool equipment	7	10	14	20
Synthetic sports surfaces	3	4	6	8
play yards	10	13	16	20
Tennis court	18	20	22	25
asphalt/colored concrete resurfacing	3	4	5	7
nets	1	2	2	3
Underground sewers, water lines, wells	22	25	28	32
STORAGE TANKS				
Concrete tanks	30	37	45	55
Galvanized steel, including feed bins	15	17	18	20
Steel oil storage	25	27	28	30
Steel surface water storage	30	33	36	40
Elevated steel tanks	30	33	36	40
Underground steel, single wall	10	13	16	20
double walled	25	28	31	35
fiber coated	25	28	31	35
Underground fiberglass	30	32	33	35
Wood	20	22	23	25
Steel pressure tanks	20	22	23	25
Galvanized steel chemical storage	3	5	10	17
Stainless steel chemical storage	15	19	24	30
Polyethylene chemical storage	15	17	18	20
Fiberglass chemical storage	15	17	18	20

LIFE EXPECTANCY GUIDELINES

FURNITURE, FIXTURES AND EQUIPMENT

Most of the following useful lives for depreciable assets other than buildings, by industry groups, are extracted from U.S. Treasury Department Internal Revenue Service Publication 946 titled "How To Depreciate Property". The midpoints of these ranges are listed under the Class Life system outlined in the "Table of Class Lives and Recovery Periods" Publication 946. They are presented here in alphabetical order for your convenience. For more complete descriptions or definitions, see Publication 534. See top of Page 12 and Pages 2 and 3 for further life expectancy and life range discussions.

Lives marked with an asterisk (*) are not from the Internal Revenue Service publication, but are a composite of studies of equipment, bookkeeping practices and appraisers' opinions as compiled from a consensus of recognized trade groups, suppliers and other interested parties.

INDUSTRY GROUP	ASSET RANGE LIFE IN YEARS		
Aerospace industry	8	10	12
Agriculture, machinery and equipment	8	10	12
Animals, cattle, breeding or dairy	5.5	7	8.5
hogs, breeding	2.5	3	3.5
horses, breeding or work	8	10	12
sheep and goats, breeding	4	5	6
Cotton ginning	9.5	12	14.5
Trees and vines, almonds, pecans, and walnuts*	-----	40	-----
apples, figs, and olives*	-----	50	-----
apricots, peaches, and nectarines*	-----	20	-----
cherries, pears, and citrus*	-----	40	-----
grapes, plums, and prunes*	-----	35	-----
Aircraft and all helicopters, except commercial aircraft	5	6	7
commercial aircraft	9.5	12	14.5
Amusement and theme parks	10	12.5	15
Apparel and fabricated textile manufacturing	7	9	11
Automobile repair shops	8	10	12
Bakeries and confectionery production	9.5	12	14.5
Barber and beauty shops	-----	10	-----
Billboards	16	20	24
Brewery equipment	9.5	12	14.5
Cable television, headend facilities	9	11	13
microwave systems	7.5	9.5	11.5
program origination	7	9	11
service and test	7	8.5	10
subscriber connection and distribution	8	10	12
Canneries and frozen food production	9.5	12	14.5
Cement manufacture	16	20	24
Chemical and allied production	7.5	9.5	11.5
Clay products manufacturing	12	15	18
Clocks and watches, manufacturing	8	10	12
electronic instrumentation	5	6	7
Cold storage and ice-making equipment*	-----	18	-----
Cold storage warehouse equipment*	-----	10	-----
Condiments, manufacturing and processing*	-----	10	-----
Construction equipment, general construction	5	6	7
marine construction	5	6	7

INDUSTRY GROUP	ASSET RANGE LIFE IN YEARS		
Dairy products manufacturing	9.5	12	14.5
Data handling equipment, except computers	5	6	7
computers and terminals*	3	5	7
Distilling	9.5	12	14.5
Electrical equipment manufacturing	8	10	12
Electric utilities, hydraulic production	40	50	60
nuclear or combustion turbine production	16	20	24
nuclear fuel assemblies	4	5	6
steam production	22.5	28	33.5
transmission and distribution facilities	24	30	36
Electronic equipment manufacturing	5	6	7
semiconductor manufacturing equipment	-----	5	-----
Fabricated metal products	9.5	12	14.5
special tools	2.5	3	3.5
Fishing equipment, excluding boats and barges*	-----	4	-----
Food and beverage production	9.5	12	14.5
special-handling devices	3	4	5
Fur processing	7	9	11
Gas utilities, distribution	28	35	42
liquified natural gas production	17.5	22	26.5
manufactured gas production	24	30	36
natural gas production	11	14	17
natural gas-coal gasification production	14.5	18	21.5
pipelines and related storage	17.5	22	26.5
Glass and glass products	11	14	17
special tools	2	2.5	3
Grain and grain mill products manufacture	13.5	17	20.5
Gypsum products	12	15	18
Hand tools*	-----	5	-----
Hospital furnishings and equipment*	7	10	15
magnetic resonance imaging	-----	5	-----
Hotel and motel furnishings and equipment	8	10	12
Industrial steam and electric generation	17.5	22	26.5
Information systems, computers and peripheral equipment	5	6	7
Jewelry products and pens	9.5	12	14.5
Knitwear and knit products	6	7.5	9
Land improvements, sidewalks, roads, etc.	-----	20	-----
Laundry equipment	8	10	12
Leather and leather products	9	11	13

FURNITURE, FIXTURES AND EQUIPMENT

INDUSTRY GROUP	ASSET RANGE LIFE IN YEARS		
Logging, timber cutting	5	6	7
Machinery manufacturing, except as otherwise listed	8	10	12
Meatpacking	9.5	12	14.5
Medical and dental supply production	-----	9	-----
Metalworking machinery manufacturing	8	10	12
Mining and quarrying	8	10	12
Motion picture and television production	9.5	12	14.5
Motor transport, freight	6.5	8	9.5
general purpose trucks, light	3	4	5
heavy	5	6	7
tractor units (over-the-road)	3	4	5
trailers and trailer-mounted containers	5	6	7
Motor transport, passenger	6.5	8	9.5
automobiles, including taxis	2.5	3	3.5
buses	7	9	11
Motor vehicle and parts manufacturing	9.5	12	14.5
special tools	2.5	3	3.5
Office furniture and equipment	8	10	12
Optical lenses and instrument manufacturing	8	10	12
Paints and varnishes	7.5	9.5	11.5
Paper and pulp manufacturing	10.5	13	15.5
converted paper, paperboard and pulp	8	10	12
Petroleum and natural gas, drilling, onshore	5	6	7
drilling, offshore	6	7.5	9
exploration and production	11	14	17
marketing	7	9	11
petroleum refining	13	16	19
pipeline transportation	17.5	22	26.5
Plastic products manufacturing	9	11	13
special tools	3	3.5	4
Plastics manufacturing	7.5	9.5	11.5
Primary metals production, nonferrous and foundry products	11	14	17
special tools	5	6.5	8
Primary steel mill products	12	15	18
Printing and publishing	9	11	13
Professional and scientific instruments	8	10	12
Radio and television, broadcasting	5	6	7
manufacturing*	-----	10	-----
Railroad cars and locomotives	12	15	18
Railroads, machinery and equipment	11	14	17
structures	24	30	36
tracks	-----	10	-----
wharves and docks	16	20	24
Railroad transportation equipment manufacturing	9.5	12	14.5
locomotive manufacturing	9	11.5	14
Recreation and amusement	8	10	12
Residential furniture*	7	10	12
multi-residential	2	3	5
Restaurant and bar equipment*	-----	10	-----
Restaurant equipment, fast foods*	-----	7	-----
Retail trades, fixtures and equipment	7	9	11
Rubber products manufacturing	11	14	17
special tools	3	4	5
Sawmills, permanent	8	10	12
portable	5	6	7
Service establishments	7	9	11
Ship and boat building machinery and equipment	9.5	12	14.5
dry dock improvements	13	16	19
special tools	5	6.5	8
Soft drink manufacture and bottling	9.5	12	14.5
Steam production and distribution	22.5	28	33.5
Stone products manufacturing	12	15	18
Sugar and sugar products manufacturing	14.5	18	21.5
Telephone, central office equipment	-----	18	-----
distribution	28	35	42
station equipment	8	10	12
Textile products, including finishing and dyeing	7	9	11
manufacture of nonwoven fabrics	8	10	12
manufacture of yarn, thread and woven fabrics	9	11	13
manufacture of textured yarns	6.5	8	9.5
Theater equipment	8	10	12
Tobacco and tobacco products	12	15	18
Vegetable oil products	14.5	18	21.5
Waste reduction and resource recovery	8	10	12
Water transportation	16	20	24
vessels, barges and tugs	14.5	18	21.5
Water utilities	40	50	60
Wharves, docks and piers	-----	20	-----
Wholesale trade fixtures and equipment	7	9	11
Wood products and furniture manufacturing	8	10	12

DEPRECIATION – COMMERCIAL PROPERTIES

EFFECTIVE AGE IN YEARS	TYPICAL LIFE EXPECTANCY IN YEARS									
	70	60	55	50	45	40	35	30	25	20
	DEPRECIATION – PERCENTAGE									
1	0	0	0	0	1	1	1	2	2	3
2	0	1	1	1	1	2	2	3	5	7
3	0	1	1	1	2	3	4	5	7	10
4	1	1	1	2	3	4	5	7	10	14
5	1	1	2	3	4	5	6	9	13	18
6	1	2	2	3	4	6	8	11	16	22
7	1	2	3	4	5	7	10	14	19	26
8	1	2	3	5	6	8	11	16	22	30
9	2	3	4	5	7	10	13	18	25	35
10	2	3	4	6	8	11	15	21	29	40
11	2	4	5	7	9	13	17	24	32	45
12	2	4	6	8	10	14	19	26	36	50
13	2	5	6	9	12	16	22	29	40	55
14	3	5	7	10	13	18	24	32	44	60
15	3	6	8	11	14	20	26	35	48	65
16	3	7	9	12	16	22	28	39	52	69
17	4	7	10	13	18	24	31	42	56	73
18	4	8	11	14	19	26	34	46	60	76
19	4	9	12	16	21	28	36	49	64	78
20	5	9	13	17	23	30	39	53	68	79
21	5	10	14	18	25	32	42	57	71	80
22	6	11	15	20	27	35	45	60	73	
23	6	12	16	21	29	37	48	63	75	
24	7	13	17	23	31	40	52	66	77	
25	7	14	19	25	33	43	55	69	79	
26	8	15	20	27	35	46	58	72	80	
27	9	16	21	28	37	49	61	75		
28	9	17	23	30	40	52	64	77		
29	10	18	24	32	42	54	68	78		
30	11	20	26	34	45	57	72	79		
32	13	22	30	38	50	62	75	80		
34	15	25	34	43	55	68	77			
36	17	28	38	48	61	73	79			
38	19	32	42	53	67	77	80			
40	21	35	46	59	72	79				
42	25	39	51	65	75	80				
44	28	43	56	70	77					
46	31	48	60	74	78					
48	34	53	64	77	79					
50	38	58	68	79	80					
55	48	67	75	80						
60	57	74	78							
65	65	78	80							
70	71	80								
75	75									
80	78									

EFFECTIVE AGE IN YEARS	TYPICAL LIFE EXPECTANCY IN YEARS									
	70	60	55	50	45	40	35	30	25	20
	REMAINING LIFE EXPECTANCY – YEARS									
1	69	59	54	49	44	39	34	29	24	19
2	68	58	53	48	43	38	33	28	23	18
3	67	57	52	47	42	37	32	27	22	17
4	66	56	51	46	41	36	31	26	21	16
5	65	55	50	45	40	35	30	25	20	15
6	64	54	49	44	39	34	29	24	19	14
7	63	53	48	43	38	33	28	23	18	13
8	62	52	47	42	37	32	27	22	17	12
9	61	51	46	41	36	31	26	21	16	11
10	60	50	45	40	35	30	25	20	15	10
11	59	49	44	39	34	29	24	19	14	9
12	58	48	43	38	33	28	23	18	13	8
13	57	47	42	37	32	27	22	17	12	7
14	56	46	41	36	31	26	21	16	11	6
15	55	45	40	35	30	25	20	15	10	5
16	54	44	39	34	29	24	19	14	9	4
17	53	43	38	33	28	23	18	13	8	4
18	52	42	37	32	27	22	17	12	7	3
19	51	41	36	31	26	21	16	11	6	2
20	50	40	35	30	25	20	15	10	5	2
21	49	39	34	29	24	19	14	9	5	2
22	48	38	33	28	23	18	13	8	4	
23	47	37	32	27	22	17	12	7	3	
24	46	36	31	26	21	16	11	6	3	
25	45	35	30	25	20	15	10	6	2	
26	44	34	29	24	19	14	9	5	2	
27	43	33	28	23	18	13	8	4		
28	42	32	27	22	17	12	7	4		
29	41	31	26	21	16	11	7	3		
30	40	30	25	20	15	10	6	3		
32	38	28	23	18	13	8	5	2		
34	36	26	21	16	11	7	4			
36	34	24	19	14	10	6	3			
38	32	22	17	12	8	5	2			
40	30	20	15	10	7	4				
42	28	18	13	9	6	3				
44	26	16	12	8	5					
46	24	14	10	7	4					
48	22	13	9	6	3					
50	20	11	8	5	3					
55	16	8	6	3						
60	12	6	4							
65	9	4	3							
70	7	3								
75	5									
80	4									

PROPERTIES INCLUDED

Section 11 All apartments, hotels, resorts
Section 12 Motels, lodges, large multiples & resorts
Section 13 All
Section 14 All
Section 15 All except libraries
Section 16 All except churches and fraternal bldgs.
Section 17 All commercial and industrial uses
Section 18 None
Section 64 All commercial and industrial uses

For lives less than 20 years, see Page 18.

DEPRECIATION – RESIDENTIAL PROPERTIES

EFFECTIVE AGE IN YEARS	TYPICAL LIFE EXPECTANCY IN YEARS										
	70	65	60	55	50	45	40	35	30	25	20
	DEPRECIATION – PERCENTAGE										
1	0	0	0	1	1	1	1	2	2	3	3
2	1	1	1	2	2	2	3	4	4	6	7
3	1	2	2	2	3	3	4	5	6	9	11
4	2	2	3	3	4	4	5	7	9	12	15
5	2	3	4	4	5	6	7	9	12	15	20
6	3	4	4	5	6	7	9	11	14	18	24
7	4	5	5	6	7	8	10	13	17	22	28
8	4	5	6	7	8	10	12	15	19	25	33
9	5	6	7	8	10	11	14	17	22	29	38
10	5	7	8	9	11	13	16	20	25	32	43
11	6	8	9	10	12	14	18	22	28	36	48
12	7	9	10	11	13	15	20	24	31	40	53
13	8	10	11	12	15	17	22	26	34	44	57
14	8	10	12	13	16	19	24	29	37	48	61
15	9	11	12	15	17	21	26	32	40	52	66
16	10	12	13	16	19	23	28	34	43	55	70
17	10	13	15	17	20	25	30	37	46	59	73
18	11	14	16	19	22	27	32	40	50	63	76
19	12	15	17	20	24	28	34	43	53	67	78
20	13	16	18	21	25	30	37	45	56	71	79
22	14	17	20	23	28	34	42	51	62	76	80
24	16	20	23	26	31	38	47	57	68	79	
26	18	22	25	29	35	43	52	62	74	80	
28	20	24	28	33	39	47	57	68	77		
30	22	27	31	36	44	52	62	71	79		
32	24	29	34	40	47	56	67	74	80		
34	27	32	37	44	51	60	71	77			
36	29	35	40	47	55	65	74	79			
38	32	38	43	51	59	69	77	80			
40	35	41	47	55	63	72	79				
42	38	45	51	59	66	75	80				
44	41	48	54	62	69	77					
46	44	51	57	65	72	79					
48	46	54	61	68	75	80					
50	49	57	64	71	77						
55	57	64	70	77	80						
60	64	69	74	80							
65	71	74	78								
70	76	78	80								
75	80	80									
80											
85											
90											
95											
100											

PROPERTIES INCLUDED

Section 11 All except apartments, hotels and large resorts
Section 12 All except motels, lodges, large multiples and resorts
Section 13 None
Section 14 None
Section 15 Libraries
Section 16 Churches, fraternal bldgs.
Section 17 All farm and residential uses
Section 18 All school buildings
Section 64 All farm and residential uses

For life expectancies less than 20 years, use table on Page 18.

EFFECTIVE AGE IN YEARS	TYPICAL LIFE EXPECTANCY IN YEARS										
	70	65	60	55	50	45	40	35	30	25	20
	REMAINING LIFE EXPECTANCY – YEARS										
1	69	64	59	54	49	44	39	34	29	24	19
2	68	63	58	53	48	43	38	33	28	23	18
3	67	62	57	52	47	42	37	32	27	22	17
4	66	61	56	51	46	41	36	31	26	21	16
5	65	60	55	50	45	40	35	30	25	20	15
6	64	59	54	49	44	39	34	29	24	19	14
7	63	58	53	48	43	38	33	28	23	18	13
8	62	57	52	47	42	37	32	27	22	17	12
9	61	56	51	46	41	36	31	26	21	16	11
10	60	55	50	45	40	35	30	25	20	15	10
11	59	54	49	44	39	34	29	24	19	14	9
12	58	53	48	43	38	33	28	23	18	13	8
13	57	52	47	42	37	32	27	22	17	12	7
14	56	51	46	41	36	31	26	21	16	11	6
15	55	50	45	40	35	30	25	20	15	10	5
16	54	49	44	39	34	29	24	19	14	9	5
17	53	48	43	38	33	28	23	18	13	9	4
18	52	47	42	37	32	27	22	17	12	8	3
19	51	46	41	36	31	26	21	16	11	7	3
20	50	45	40	35	30	25	20	15	10	6	2
22	48	43	38	33	28	23	18	13	9	5	2
24	46	41	36	31	26	21	16	12	7	4	
26	44	39	34	29	24	19	15	10	6	4	
28	42	37	32	27	22	17	13	9	5	3	
30	40	35	30	25	20	16	11	8	4	3	
32	38	33	28	23	18	14	9	6	3		
34	36	31	26	21	17	12	8	5	3		
36	34	29	24	20	15	10	7	5			
38	32	27	22	18	13	9	6	4			
40	30	25	21	16	11	8	5	3			
42	28	23	19	14	10	7	5				
44	26	21	17	13	9	6	5				
46	25	20	15	12	8	6	4				
48	23	19	14	11	7	5					
50	21	17	12	10	7	5					
55	17	14	10	8	5	4					
60	14	11	8	7	4						
65	11	9	7	6							
70	9	8	7								
75	8	7									
80	7	7									
85	7										
90											
95											
100											

DEPRECIATION – FIXTURES AND EQUIPMENT

These general tables are furnished primarily for the experienced equipment appraiser who has knowledge of the normal lives and retirement experiences of fixtures and equipment, as a check against his other methods of determination of the total depreciation of equipment. These tables were based on actual cases of sales and mortality to which empirical mathematical curves have been matched. They are averages and as such must be used with care using effective age and modifying for above- or below-normal utilization, wear and tear, obsolescence and buyer preferences. See top of Page 12 and Pages 2 and 3 for further life expectancy discussions.

EFFECTIVE AGE IN YEARS	TYPICAL LIFE EXPECTANCY IN YEARS																	
	30	25	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5
	NORMAL DEPRECIATION – PERCENTAGE																	
1	2	2	3	3	4	4	4	5	5	6	6	7	8	9	10	11	13	15
2	3	5	7	7	8	9	9	10	11	12	13	14	16	18	21	24	27	31
3	5	7	10	11	12	13	14	15	16	18	20	22	24	28	33	38	43	48
4	7	10	14	15	17	18	19	21	23	25	27	30	33	39	46	52	59	66
5	9	13	18	19	21	23	25	27	29	31	34	38	42	49	57	63	70	77
6	11	16	22	23	25	27	29	32	35	38	42	46	51	59	67	72	77	82
7	14	19	26	28	30	32	35	38	42	46	50	55	61	67	74	77	81	
8	16	22	30	32	35	38	42	45	49	53	57	63	70	74	78	80		
9	18	25	35	37	40	43	47	51	55	59	64	70	76	78	80			
10	21	29	40	43	46	49	53	57	61	66	71	75	79	80				
11	24	32	45	48	51	54	58	63	67	71	76	78	80					
12	26	36	50	53	56	60	64	69	72	75	78	80						
13	29	40	55	58	61	65	69	74	76	78	80							
14	32	44	60	63	66	69	73	77	78	80								
15	35	48	65	67	69	72	76	79	80									
16	39	52	69	71	73	75	78	80										
17	42	56	73	75	77	79	80											
18	46	61	76	77	78	80												
19	49	66	78	79	80													
20	53	70	79	80														
22	60	74	80															
24	66	77																
26	72	79																
28	77																	
30	79																	
32	80																	

EFFECTIVE AGE IN YEARS	TYPICAL LIFE EXPECTANCY IN YEARS																	
	30	25	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5
	REMAINING LIFE – YEARS																	
1	29	24	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4
2	28	23	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3
3	27	22	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
4	26	21	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
5	25	20	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	1
6	24	19	14	13	12	11	10	9	8	7	6	5	4	3	2	1	1	1
7	23	18	13	12	11	10	9	8	7	6	5	4	3	2	1	1	1	
8	22	17	12	11	10	9	8	7	6	5	4	3	2	1	1	1		
9	21	16	11	10	9	8	7	6	5	4	3	2	1	1	1			
10	20	15	10	9	8	7	6	5	4	3	2	1	1	1				
11	19	14	9	8	7	6	5	4	3	2	2	1	1					
12	18	13	8	7	6	5	4	3	2	1	1	1						
13	17	12	7	6	5	4	3	3	2	1	1							
14	16	11	6	5	4	3	2	2	1	1								
15	15	10	5	4	3	2	1	1	1									
16	14	9	4	3	2	1	1	1										
17	13	8	4	3	2	1												
18	12	7	3	2	1													
19	11	6	2	2														
20	10	5	2															
22	8	4																
24	6	3																
26	5	2																
28	4																	
30	3																	
32	2																	

SALVAGE VALUE

The following table lists average salvage value of all equipment and fixtures by industry. Thus, all the equipment in a bakery, taken as a whole, might be expected to have a 10% remaining salvage value when fully depreciated. If the installation is unmarketable, however, then the value could go to zero.

Airplane mfg.	10%	Clay products	7%	Library.	10%	Restaurant	14%
Apartment	10%	Construction equip.	14%	Logging equip.	10%	Rubber	9%
Bakery	10%	Creamery – dairy	11%	Metalworking	12%	School	10%
Bank	10%	Dwelling	12%	Mining, milling	8%	Sewage disposal (city)	7%
Bottling	10%	Elec. equip. mfg.	10%	Motion picture	12%	Shipbuilding	9%
Brewery, distillery	8%	Elec. power equip.	10%	Office equipment	12%	Steam power	10%
Candy, conf.	10%	Flour, cereal, feed	8%	Oil refining	7%	Store	10%
Cannery – fish	8%	Garage	10%	Packing – meat	7%	Textile	8%
Cannery – fruit	8%	Glass mfg.	8%	Paint mfg.	7%	Theater	12%
Cement mfg.	8%	Hospital	12%	Paper mfg.	7%	Warehousing	10%
Chemicals	6%	Hotel	10%	Printing	10%	Waterworks (city)	6%
Church	10%	Laundry – dry cleaning	10%	Refrigerating	8%	Woodworking	10%

COST MULTIPLIERS

CURRENT COST MULTIPLIERS

CURRENT COST MULTIPLIERS (Section 99, Page 3) are the multipliers for bringing costs published on the preceding pages up-to-date. This page is republished monthly and is based primarily on the Building Cost Indexes.

LOCAL MULTIPLIERS

LOCAL MULTIPLIERS (Section 99, Pages 5 thru 10) reflect local cost conditions and are designed to adjust the basic costs to each locality. They are based on weighted labor and material costs, including local sales taxes and the Canadian GST, but do not include any new construction rebate where applicable. Local multipliers apply to all costs in the manual but not to any cost indexes or replacement cost multipliers. The local multipliers, when applied to the total replacement cost, will adjust for variations in component costs as a whole for a particular geographical area. But they may not adequately adjust when applied to specific components or Unit-in-Place costs, e.g., in the case of a specific piece of equipment which may be national in scope requiring no significant localization. For most Unit-in-Place costs, the predominant building or material Class factor can be used (e.g., wood, Class D; masonry, Class C) or an average of all Classes may be appropriate. In some cases, local building problems and practices must be considered. In the best residential neighborhoods, costs are often higher than those for identical construction in a lower-cost neighborhood. These pages are republished every January, April, July and October.

SPECIAL LOCAL CONDITIONS: Normally, smaller cities and suburbs near larger cities fall generally under the same cost influence as the larger city; however, local wage scales, inspection practices, licenses, codes and fees may vary, and the valuator should consider these possible deviations. Within a large city, costs will often vary by distance from sources of materials, such as ready-mix plants, and the local multipliers apply only to typical conditions prevailing. The state multipliers are merely weighted averages of the various cities and do not have any other significance. They may fit quite closely to many of the cities in the state which are not listed, but some localities may vary appreciably.

SEISMIC AND WIND: In high wind (over 90 mph) and earthquake (zones 2, 3 & 4) prone areas, you can have additional structural elements which will affect the overall building costs. Lifeline structures, i.e., Hospitals, Governmental and Data Centers must meet stringent building and life safety codes. See Section 85 for further information. Individual components can be priced using the Segregated Method.

NATURAL DISASTERS: Widespread major natural disasters can create isolated materials and/or labor shortages requiring some upward adjustment to the multipliers. Some specific materials, such as roofing, can temporarily increase 30% to 50% or more above normal repair estimates.

ABNORMAL CONTRACTOR'S PROFIT: In areas of high growth, contractors are able to take higher than normal profits due to an increased demand with limited contractors and/or workforce availablity.

ABNORMAL SHORTAGES: Temporary supply-demand imbalances caused by events other than major catastrophes, such as factory closures, strikes, inadequate inventories, environmental legislation, trade embargoes, commodities speculation, etc., may require some upward adjustment to the multipliers.

NOTE: *Even though a particular material or trade may increase dramatically in a short span of time, it may only be a small part of an entire structure, and valuators should use caution.*

COMPLEX SITES: Hillside construction will be much more expensive, due to added foundation and sitework. Downtown buildings are usually somewhat more expensive than outlying buildings. Sidewalks must be barricaded or roofed for the protection of pedestrians. Due to the lack of adequate space, material storage and handling is often more costly. Bordering property must often be protected. Such expenses are definitely a part of construction costs.

GREEN BUILDINGS: High performance sustainable construction that is LEED certified can be more expensive requiring some upward adjustments to the base costs.

WEATHER EXTREMES: Extreme cold, heat or wet weather may require temporary enclosures or covers or special storage, handling and wrapping of materials. These added costs may require some upward adjustment to the multipliers.

REMOTE LOCATIONS: If a building or other structure is far removed from supplies of labor and material or if its location is accessible with difficulty, requiring higher freight charges on material, noncompetitive conditions for labor or materials, disproportionate crewing or labor per diem charges or unusual climatic conditions, some upward modification of the multipliers is appropriate. Examples are island, mountain, desert or resort locations and others not enjoying reasonable and adequate transportation facilities, and for which no local modifier has been computed. When using the Mountain and Resort Cottage costs in Section 12, normal erection in remote areas is already included.

QUANTITY OR DEVELOPMENT CONSTRUCTION: There is usually a cost saving in quantity or duplicate construction, which may or may not be passed on to the prospective buyer; usually, only part of the savings is passed on. Since costs in this manual for the types of buildings typically built in this manner will be based to some extent on such construction, the costs may require only small or no percentage reductions to reflect actual sales conditions in the area. Large industrial projects, using multiple tilt-up or residential modular construction can have savings double the listed averages.

AMATEUR WORKMANSHIP: All costs in this manual are based on professional labor supervised by a contractor or his job foreman. For amateur workmanship or work done by farm or ranch help, costs should be decreased to reflect the proper wage rate and lack of contractor and architectural supervision relative to the quality of the work.

REPAIR AND REMODEL: All costs in this manual are based on new construction. Typical repair work will run 10% to 20% higher because of restricted area, movement of materials, temporary supports, shoring, etc., and other contingencies not encountered in new construction, not including demolition and removal. For detailed costs we would recommend using our repair and claims products.

MODIFYING ADJUSTMENTS

The following are rough overall percentage ranges to apply for certain unusual conditions, which can be cumulative:

ADD FOR THE FOLLOWING:			
Abnormal contractor's profit	5%	to	25%
Abnormal shortages	2%	to	10%
Complex/congested areas	2%	to	5%
Hillside buildings	5%	to	20%
Remote areas	5%	to	15%
Resort locations	15%	to	30%
Weather extremes	2%	to	6%
Seismic or high wind lifeline occ., high event (Zone 3/4)	2%	to	5%
	5%	to	10%

ADDITIONS – CONTINUED			
Green Buildings, Commercial	0%	to	7%
Residential	3%	to	20%
SUBTRACT FOR THE FOLLOWING:			
Quantity or Development construction	1%	to	5%
Abnormal labor surplus	1%	to	5%
Amateur workmanship	15%	to	30%
Architects' fee adjustments: see discussion below and on Page 2.			

SPECIAL LOCAL MULTIPLIERS

If no multiplier is published for your city or if you desire a check on the published multipliers, we suggest that you send us your local data, and we will compute one for you. Forms for the required data may be obtained by writing, fax or email. See inside front cover for details.

ARCHITECTS' FEES

The architects' fees listed on the next page are based on averages of fees actually charged or recommended. Actual fees, since they are based on the size of the project, the technical difficulty, the artistic requirements, the reputation of the architect and his willingness to accept the assignment, vary greatly, and the estimate of the fee is a matter for the valuator's judgment. Architects' fees will normally include part or all of the following:

1. Plans and specifications including consultations, estimates and engineering studies.
2. General administration and overall supervision of construction, not including superintending construction.
3. Approving payment vouchers to the contractor.
4. Approval and acceptance of completed construction.

Regardless of the size and type of construction, all of these services must be performed by someone. On some projects the owner or the general contractor may do the supervision. On governmental projects, many services are performed by government employees; however, in replacing the building, the cost of these services, whether performed by the architect or others, must be included.

The architects' fee percentages given here are only a guide. On a simple pre-engineered structure or residence, stock plans and specifications may be purchased for under $300, plus $50 for each additional set, and on a large housing development, the architect may get full fees for each individual design and payments as low as $325 per unit for additional uses of the plans, or he may work as a corporate employee. Also, many shed, farm and utility buildings are commonly built without plans or from standard plans which can be obtained free or at a small price, and to add a full architects' fee would be unsuitable.

In actual practice, architects' fees are normally based, by contract, either on a percentage of the entire cost, on a multiplier of the technical payroll plus incidental expenses, or on a fixed sum plus listed expenses.

In the final analysis, the architect's function, when fully performed, is a proper cost of construction. A well-considered matching of structure to land may enhance the end value by more than the fees involved. However, when poorly performed, the cost of design and drafting work may be wasted and result in functional obsolescence in a brand-new structure. This determination is a matter of judgment.

The average fees listed for buildings do not include fees for design of furniture, built-in equipment or appliances, plant or off-site, utilities or subdivision layout, or other detailed special items designed for a specific trade or personal use.

ARCHITECTS' FEES

TABLE I

Furnishings and Interiors
Special Lighting
High-value – Luxury Residences
Mausoleums and Memorials

TABLE II

Airport Terminals, Control Towers
Cathedrals
Specialized College Buildings
Convention Centers
Governmental Buildings
Hospitals and Outpatient Centers
Laboratories and Computer Centers
Libraries
Medical Schools
Museums, Galleries and Aquariums
Penal and Mental Institutions
Storefronts

TABLE III

Banks and Financial Institutions
Churches, Amphitheaters and Pavillions
Commons, Bookstores, Luxury Apartments
Communications and Broadcasting
Convalescent and Veterinary Hospitals
Country Clubs and Marinas
Detention and Firing Range Buildings
Fieldhouses and Natatoriums
Fire (Staffed) and Police Stations
Fraternal, Community and Senior Center Buildings
Hotels, City Clubs and Resort Lodges
Institutional Greenhouses
Medical/Dental Office Buildings
Major Post Office Buildings
Public Health and Service Centers
Restroom and Shower Buildings
Secondary and Vocational Schools
Specialty Shops and Boutiques
Stadiums, Sports Facilities, Colleges
Theaters, Auditoriums and Casinos

TABLE IV

Apartments and Dormitories
Bars and Lounges
Branch Post Offices
Bus Stations and Visitor Centers
Clubhouses and Gymnasiums
Cold Storage Buildings
Convents, Rectories and Rooming Houses
Day Care Centers, Retirement Care Complexes
Department/Anchor Stores and Pharmacies
Elementary Schools and Relocatable Buildings
Engineering and Research Industrial Buildings
Equestrian Centers
Fellowship Halls, Fraternity and Sorority Houses
Guard Houses and Golf Starter Booths
Group Care Homes & Retirement Complexes
Health Clubs and Fitness Centers
Homes for the Elderly and Assisted Living
Hotels – Limited-service
Laundries and Cleaners
Maintenance Hangars and Storage Bldgs.
Mortuaries
Motels, Inns and Cottages
Office and Administration Buildings
Public Recreation Facilities
Racquetball and Tennis Clubs
Regional Shopping Centers
Residences, Individual Design, Historical
Restaurants and Clubs

TABLE V

Arcade Buildings
Armories
Automotive Centers
Barber and Beauty Shops
Bowling Centers
Bulk and Bag Fertilizer Buildings
Car Washes, Full-service Tunnels
Community and Discount Shopping Centers
Creameries, Dairies or Milking Barns
Discount and Warehouse Stores
Dispensaries and Kennels
Distribution Warehouses
Docks and Wharfs
Fast Food, Truck Stops and Snack Bars
Golf Cart Barns
Grain Elevators
Loft and Industrial Flex Buildings
Manufacturing Industrial Buildings
Markets and Convenience Stores
Multiples, Row Houses, Individual Design
Neighborhood and Mixed Shopping Centers
Retail Stores and Florist Shops
Senior Citizen Residences
Showrooms and Complete Auto Dealerships
Skating Rinks and Recreational Enclosures
Stables and Horse Arenas
Storage Hangars
Wineries

TABLE VI

Car Washes, Self-serve, Drive-thru
Garages, Minilube and Service
General-purpose, Poultry and Hog Barns
Greenhouse Structures
Prefabricated Booths and Shelters
Recycling, Waste Transfer Structures
Service Stations and Parking Structures
Shipping Docks and Transfer Points
Storage and Volunteer Fire Garages
Storage Warehouses & Roadside Markets

EXPLANATION

The tables of architects' fees are based on composite curves for new construction derived from many actual fees charged, recommendations of several architectural committees in various states, and architectural time studies. In cases where superior quality and detail are required, the fee may be higher than the average, while very low quality and standardized buildings may call for a fee which is lower. Special consultants or commissioning services for feasibility and energy and performance studies, post-occupancy evaluations, etc., can add .5 to 1.2 percent to the fees. Renovation or rehab work may require considerably more time, and fees can run 20% to 60% above those listed due to the many variables and complexities involved.

The fee schedules contain approximately 30% (20% to 40%) for contract administration and supervision. In many cases, this function may be performed by the contractor, an employee of the owner or an outside consultant. In any case, this is a proper charge against the building, and the total fee should be added to building costs computed from the Unit-in-Place or the Segregated Costs.

PROJECT COST Up To	TABLE I	II	III	IV	V	VI
$ 50,000	10.7	9.7	8.7	7.9	7.1	6.4
100,000	10.3	9.4	8.4	7.6	6.9	6.2
200,000	10.0	9.1	8.2	7.4	6.7	6.0
500,000	9.5	8.7	7.8	7.1	6.4	5.8
1,000,000	9.2	8.4	7.6	6.9	6.2	5.6
2,000,000	8.9	8.1	7.3	6.6	6.0	5.5
3,000,000	8.7	7.9	7.2	6.5	5.9	5.4
5,000,000	8.4	7.7	7.0	6.4	5.8	5.3
10,000,000	8.1	7.5	6.8	6.2	5.6	5.1
20,000,000	7.9	7.2	6.6	6.0	5.4	5.0
50,000,000	7.5	6.9	6.3	5.7	5.2	4.8
and up	7.3	6.8	6.2	5.6	5.1	4.7

The following are the approximate percentages included in the manual costs for single and multifamily residences and miscellaneous light commercial and farm structures not listed in the above table. The single-family residence, Low-to-Average quality percentage represents stock plans only, with some variations commensurate to the quality. The Good percentage represents custom drafting service and plans while the Very Good to Excellent percentages included in the tables above would represent full architects' fees, plans, specifications and supervision.

	LOW COST	FAIR	AVERAGE	GOOD
Single-family Residences and Structures	.5%	.8%	1.3%	3.6%
Multiple-residential Structures	1.5%	1.9%	2.4%	3.9%
Light Commercial Utility/Shop Structures	1.7%	2.1%	2.5%	3.5%
Miscellaneous Farm Structures	1.6%	1.9%	2.3%	3.3%

NOTE: To convert a percentage to a multiplier, simply move the decimal over two places and add the whole number "one" to the factors. Example, 10.7% expressed as a multiplier is 1.107 (1+.107).

EXCLUSION OF ARCHITECTS' FEES

The exclusion of architects' fees from the replacement cost for insurance purposes is a matter of underwriting and not of valuation. Plans and specifications can sometimes be reused in case of total loss, but this is not common practice and when used, they usually are greatly modified or a second fee may be imposed. See Section 96.

CURRENT COST MULTIPLIERS

These multipliers bring costs from preceding pages up to date. Also apply Local Multipliers, Section 99, Pages 5 through 10.

CALCULATOR COST SECTIONS

(Effective Date of Cost Pages)		11 (11/10)	12 (8/10)	13 (5/10)	14 (2/10)	15 (11/09)	16 (8/09)	17 (5/09)	18 (2/09)
EASTERN	A	1.03	1.03	1.04	1.04	1.05	1.00	.99	.99
	B	1.03	1.04	1.04	1.05	1.05	1.00	1.00	1.00
	C	1.02	1.02	1.05	1.04	1.07	1.03	1.02	1.00
	D	1.02	1.04	1.06	1.03	1.05	1.04	1.01	1.00
	S	1.04	1.03	1.04	1.06	1.04	.99	.95	.97
CENTRAL	A	1.00	1.00	1.01	1.03	1.03	.98	.95	.95
	B	.99	1.00	1.02	1.02	1.04	.98	.95	.95
	C	1.00	1.01	1.03	1.02	1.03	.99	.98	.97
	D	.99	1.02	1.03	1.02	1.05	1.03	.99	.99
	S	.98	1.00	1.00	1.04	1.01	.95	.94	.93
WESTERN	A	.99	1.02	1.03	1.06	1.04	.98	.96	.94
	B	.98	1.00	1.04	1.04	1.05	1.00	.98	.95
	C	.99	1.01	1.03	1.03	1.04	1.02	.98	.99
	D	1.01	1.01	1.03	1.04	1.04	1.02	1.01	.99
	S	.98	.98	1.03	1.04	1.01	.98	.94	.92

SEGREGATED COST SECTIONS

(Effective Date of Cost Pages)		41 (12/10)	42 (9/10)	43 (6/10)	44 (3/10)	45 (12/09)	46 (9/09)	47 (6/09)	48 (3/09)
EASTERN	A	1.03	1.03	1.04	1.04	1.05	1.00	.99	.99
	B	1.03	1.04	1.04	1.05	1.05	1.00	1.00	1.00
	C	1.02	1.02	1.05	1.04	1.07	1.03	1.02	1.00
	D	1.02	1.04	1.06	1.03	1.05	1.04	1.01	1.00
	S	1.04	1.03	1.04	1.06	1.04	.99	.95	.97
CENTRAL	A	1.00	1.00	1.01	1.03	1.03	.98	.95	.95
	B	.99	1.00	1.02	1.03	1.04	.98	.95	.95
	C	1.00	1.01	1.03	1.02	1.03	.99	.98	.97
	D	.99	1.02	1.03	1.02	1.05	1.03	.99	.99
	S	.98	1.00	1.00	1.04	1.01	.95	.94	.93
WESTERN	A	.99	1.02	1.03	1.06	1.04	.98	.96	.94
	B	.98	1.00	1.04	1.04	1.05	1.00	.98	.95
	C	.99	1.01	1.03	1.03	1.04	1.02	.98	.99
	D	1.01	1.01	1.03	1.04	1.04	1.02	1.01	.99
	S	.98	.98	1.03	1.04	1.01	.98	.94	.92

UNIT-IN-PLACE COST SECTIONS (51 – 70)

Sec.	Page	Date		Eastern	Central	Western
51 -	2-3	(3/09)	Concrete Foundations	.98	.96	.97
51 -	4	(3/09)	Pilings	.98	.95	.97
51 -	7-8	(3/09)	Steel and Concrete Frame	.99	.96	.97
51 -	3,7	(3/09)	Wood Foundations, Frame	1.00	.99	1.01
52 -	1-4, 6	(3/09)	Interior Construction	.99	.98	.98
52 -	5	(3/09)	Bank Vaults and Equipment	.98	.95	.95
53 -	1-8	(6/09)	Heating, Cooling & Ventilating	.99	.97	.99
53 -	9-12	(6/09)	Plumbing, Fire Protection, etc.	.96	.93	.95
54 -	1-6	(6/09)	Electrical, Security	.99	1.00	.98
55 -	3-7	(8/09)	Wall Costs	1.02	1.00	1.02
56 -	1-2	(8/09)	Stained Glass	1.02	1.00	1.02
56 -	3-6	(8/09)	Storefronts	1.02	1.00	1.02
56 -	7	(8/09)	Stonework	1.01	1.00	1.03
56 -	8	(8/09)	Columns, Stone & Concrete	1.01	1.00	1.03
56 -	8	(8/09)	Columns, Wood & Aluminum	1.01	1.00	1.01
57 -	1-6	(9/09)	Roofs	1.03	1.02	1.03
58 -	1	(9/09)	Cold Storage	1.03	1.01	1.03
58 -	2-8	(9/09)	Elevators, Conveying Systems	1.03	1.01	1.01

Sec.	Page	Date		Eastern	Central	Western
61 -	1-8	(12/10)	Tanks	1.01	.98	1.00
62 -	1	(6/10)	Industrial Pumps & Boilers	1.02	.98	1.03
62 -	2-3, 6	(6/10)	Piping	1.02	.98	1.03
62 -	4	(6/10)	Electrical Motors	1.02	.98	1.03
62 -	5	(6/10)	Steel Stacks, Chutes	1.02	.98	1.03
62 -	5	(6/10)	Masonry & Concrete Chimneys	1.02	1.00	1.04
62 -	6	(6/10)	Compactors, Incinerators	1.02	.98	1.03
63 -	1-4	(9/10)	Trailer and Mfg. Housing Parks	1.00	.99	1.03
63 -	5-10	(9/10)	Manufactured Housing	1.02	1.01	1.03
64 -	1-6	(3/10)	Service Stations, Car Washes	1.06	1.03	1.03
64 -	7-9	(3/10)	Prefabricated Metal Structures	1.02	.99	1.01
64 -	7-8	(3/10)	Prefab. Wood & Air Structures	1.05	1.04	1.04
65 -	1-12	(3/10)	Equipment Costs	1.04	1.03	1.02
66 -	1	(12/09)	Subdivision Costs	1.04	1.02	1.04
66 -	2-9	(12/09)	Yard Improvements	1.04	1.02	1.05
66 -	10-11	(12/09)	Demolition & Remediation	1.03	1.02	1.04
67 -	1-2	(12/09)	Golf Courses	1.03	1.03	1.03
67 -	3-7	(12/09)	Recreational Facilities	1.03	1.02	1.04
70 -	1-32	(1/11)	Green Section	1.00	1.00	1.02

This page supercedes the December 2010 Green Supplement.

CURRENT BUILDING COST INDEXES

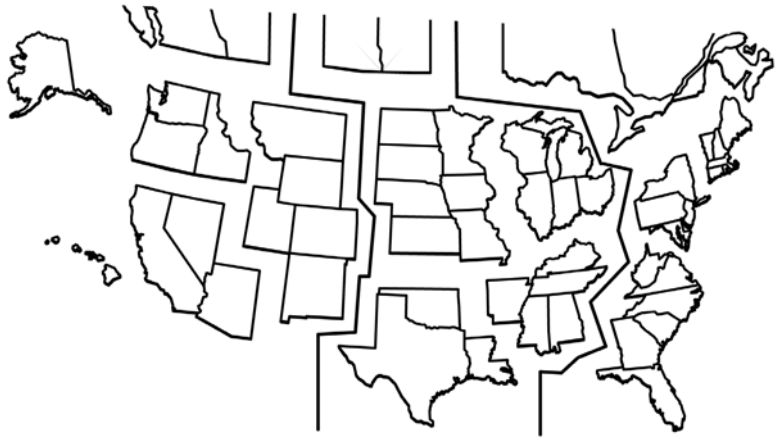
BUILDING COST INDEXES

		Jan. 2011	Jan. 2010 1 yr. ago	Jan. 2009 2 yrs. ago	Jan. 2008 3 yrs. ago	Jan. 2007 4 yrs. ago	Jan. 2006 5 yrs. ago
	A	2777.7	2696.2	2889.9	2647.7	2566.5	2383.9
	B	2755.9	2674.7	2850.0	2642.0	2563.0	2389.9
EASTERN	C	2729.6	2636.7	2755.8	2624.1	2573.6	2388.3
	D	2672.6	2565.3	2669.4	2604.4	2574.1	2404.5
	S	2567.5	2505.6	2734.2	2485.9	2411.9	2244.8
	A	2536.1	2446.9	2629.3	2402.3	2332.2	2174.4
	B	2517.5	2431.6	2582.7	2391.6	2324.1	2180.4
CENTRAL	C	2508.3	2417.3	2527.5	2388.9	2340.4	2195.9
	D	2465.9	2365.6	2462.4	2383.6	2348.3	2223.5
	S	2318.3	2258.1	2471.3	2251.8	2189.4	2047.3
	A	2747.0	2656.4	2861.2	2615.8	2530.8	2334.4
	B	2718.9	2627.0	2813.9	2609.8	2523.2	2334.9
WESTERN	C	2723.1	2618.0	2731.7	2591.6	2519.7	2327.0
	D	2646.0	2526.8	2619.5	2542.6	2494.9	2317.2
	S	2491.5	2433.7	2641.5	2404.3	2336.6	2158.7

ANNUAL COST CHANGES

		Jan. 2010 1 yr. ago	Jan. 2009 2 yrs. ago	Jan. 2008 3 yrs. ago	Jan. 2007 4 yrs. ago	Jan. 2006 5 yrs. ago
	A	3.0%	-3.9%	4.9%	8.2%	16.5%
	B	3.0%	-3.3%	4.3%	7.5%	15.3%
EASTERN	C	3.5%	-1.0%	4.0%	6.1%	14.3%
	D	4.2%	.1%	2.6%	3.8%	11.1%
	S	2.5%	-6.1%	3.3%	6.5%	14.4%
	A	3.6%	-3.5%	5.6%	8.7%	16.6%
	B	3.5%	-2.5%	5.3%	8.3%	15.5%
CENTRAL	C	3.8%	-.8%	5.0%	7.2%	14.2%
	D	4.2%	.1%	3.5%	5.0%	10.9%
	S	2.7%	-6.2%	3.0%	5.9%	13.2%
	A	3.4%	-4.0%	5.0%	8.5%	17.7%
	B	3.5%	-3.4%	4.2%	7.8%	16.4%
WESTERN	C	4.0%	-.3%	5.1%	8.1%	17.0%
	D	4.7%	1.0%	4.1%	6.1%	14.2%
	S	2.4%	-5.7%	3.6%	6.6%	15.4%

DISTRICT MAP



COMPARATIVE COST MULTIPLIERS

Bring the quarterly Comparative Cost Multipliers from Section 98, Pages 5 and 6 up to date by multiplying them by these monthly Correction Factors.

Correction Factors	Eastern	Central	Western
A	1.000	1.000	1.000
B	1.000	1.000	1.000
C	1.000	1.000	1.000
D	1.000	1.000	1.000
S	1.000	1.000	1.000

LOCAL MULTIPLIERS

Apply to costs brought up-to-date from preceding pages. Do not apply to Section 98 or any other indexes.

CANADA

(Computed in Canadian Dollars, including GST (PST) but no new construction rebate or exemptions.)

CLASS	A	B	C	D	S
ALBERTA	1.21	1.23	1.23	1.20	1.20
Calgary	1.23	1.24	1.26	1.24	1.23
Edmonton	1.25	1.27	1.29	1.27	1.23
Grande Prairie	1.23	1.25	1.26	1.22	1.23
Lethbridge	1.21	1.23	1.25	1.25	1.18
Medicine Hat	1.18	1.17	1.16	1.13	1.16
Red Deer	1.23	1.26	1.26	1.21	1.22
BRITISH COLUMBIA	1.21	1.22	1.21	1.20	1.19
Cranbrook	1.21	1.21	1.20	1.20	1.19
Kamloops	1.21	1.20	1.24	1.22	1.21
Kelowna	1.25	1.24	1.24	1.21	1.23
Nanaimo	1.12	1.12	1.13	1.09	1.08
Nelson	1.21	1.21	1.20	1.19	1.19
Penticton	1.23	1.20	1.18	1.17	1.20
Port Alberni	1.11	1.11	1.09	1.07	1.05
Prince George	1.26	1.28	1.31	1.25	1.24
Prince Rupert	1.43	1.44	1.40	1.35	1.36
Trail	1.21	1.21	1.20	1.19	1.17
Vancouver	1.21	1.22	1.25	1.23	1.20
Victoria	1.20	1.21	1.25	1.22	1.17
MANITOBA					
Brandon	1.20	1.21	1.18	1.15	1.17
Thompson	1.25	1.26	1.23	1.14	1.23
Winnipeg	1.15	1.16	1.15	1.10	1.14
MARITIMES					
Bathurst, NB	1.26	1.25	1.27	1.25	1.22
Bridgewater, NS	1.25	1.24	1.27	1.25	1.24
Cape Breton, NS	1.29	1.28	1.27	1.27	1.26
Charlottetown, PE	1.30	1.30	1.33	1.29	1.29
Corner Brook, NF	1.36	1.36	1.39	1.35	1.35
Dartmouth, NS	1.29	1.28	1.31	1.31	1.29
Edmundston, NB	1.23	1.23	1.28	1.23	1.15
Fredericton, NB	1.25	1.25	1.27	1.27	1.21
Gander, NF	1.35	1.37	1.37	1.33	1.29
Halifax, NS	1.29	1.29	1.31	1.30	1.29
Moncton, NB	1.23	1.22	1.26	1.26	1.20
New Glasgow, NS	1.29	1.28	1.27	1.29	1.28
North Shore Area, NB	1.24	1.24	1.25	1.22	1.14
St. John, NB	1.24	1.24	1.31	1.26	1.22
St. Johns, NF	1.33	1.34	1.40	1.39	1.33
Sydney, NS	1.33	1.33	1.36	1.32	1.32
Truro, NS	1.25	1.24	1.27	1.24	1.25
Yarmouth, NS	1.24	1.23	1.24	1.21	1.24
NORTHWEST TERRITORY					
Yellowknife	1.62	1.67	1.68	1.65	1.57

CLASS	A	B	C	D	S
ONTARIO	1.20	1.19	1.22	1.22	1.17
Barrie	1.26	1.26	1.30	1.28	1.25
Belleville	1.10	1.07	1.09	1.13	1.06
Brampton	1.17	1.13	1.16	1.19	1.15
Brantford	1.16	1.12	1.17	1.18	1.15
Brockville	1.17	1.17	1.18	1.18	1.17
Cambridge	1.16	1.16	1.19	1.21	1.12
Guelph	1.17	1.16	1.20	1.19	1.15
Hamilton	1.22	1.22	1.27	1.23	1.22
Kingston	1.25	1.26	1.28	1.26	1.25
Kitchener	1.22	1.22	1.27	1.25	1.22
Lancaster	1.28	1.27	1.31	1.28	1.28
Lindsay	1.12	1.11	1.13	1.16	1.09
London	1.26	1.27	1.31	1.31	1.26
Niagara Falls	1.11	1.09	1.13	1.13	1.07
North Bay	1.16	1.14	1.13	1.13	1.12
Orillia	1.11	1.10	1.12	1.16	1.06
Oshawa	1.16	1.12	1.17	1.17	1.14
Ottawa	1.32	1.32	1.36	1.33	1.32
Owen Sound	1.21	1.20	1.26	1.26	1.21
Peterborough	1.26	1.26	1.28	1.27	1.26
Sarnia	1.21	1.20	1.23	1.22	1.21
Sault Ste. Marie	1.32	1.32	1.35	1.31	1.31
St. Catharines	1.26	1.25	1.28	1.25	1.26
Sudbury	1.25	1.26	1.25	1.23	1.24
Thunder Bay	1.25	1.26	1.29	1.26	1.25
Timmins	1.27	1.30	1.33	1.29	1.27
Toronto	1.27	1.26	1.32	1.33	1.28
Trenton	1.10	1.08	1.10	1.11	1.05
Waterloo	1.22	1.22	1.27	1.25	1.22
Windsor	1.23	1.23	1.27	1.25	1.23
QUEBEC	1.19	1.19	1.22	1.21	1.19
Chicoutimi	1.22	1.22	1.26	1.23	1.22
Drummondville	1.25	1.23	1.24	1.22	1.20
Granby	1.19	1.18	1.23	1.20	1.19
Hull	1.24	1.22	1.29	1.30	1.24
Joliette	1.19	1.19	1.22	1.21	1.19
Jonquiere	1.09	1.09	1.11	1.14	1.09
Laval	1.23	1.23	1.27	1.25	1.22
Montreal	1.23	1.23	1.28	1.27	1.23
Quebec	1.14	1.15	1.19	1.17	1.14
Rimouski	1.19	1.18	1.23	1.22	1.19
Rouyn-Noranda	1.24	1.24	1.29	1.29	1.23
Sept Iles	1.12	1.12	1.14	1.15	1.12
Sherbrooke	1.21	1.20	1.24	1.20	1.20
Sorel	1.19	1.19	1.24	1.23	1.19
St-Hyacinthe	1.20	1.20	1.26	1.23	1.20
St-Jerome	1.16	1.15	1.19	1.17	1.16
Trois-Rivieres	1.22	1.22	1.28	1.25	1.22
Val d'Or	1.25	1.23	1.25	1.24	1.21

CLASS	A	B	C	D	S
SASKATCHEWAN	1.25	1.26	1.28	1.23	1.21
Moose Jaw	1.26	1.26	1.29	1.24	1.26
North Battleford	1.26	1.30	1.31	1.25	1.20
Prince Albert	1.22	1.23	1.25	1.20	1.20
Regina	1.28	1.28	1.30	1.25	1.26
Saskatoon	1.23	1.25	1.27	1.23	1.17
YUKON					
Whitehorse	1.53	1.59	1.53	1.44	1.44

UNITED STATES TERRITORIES

GUAM	1.25	1.26	1.25	1.20	1.28
PUERTO RICO	.91	.91	.92	.91	.95
VIRGIN ISLANDS (U.S.)					
St. Croix	1.10	1.11	1.13	1.14	1.14
St. John	1.36	1.39	1.39	1.31	1.38
St. Thomas	1.16	1.17	1.18	1.16	1.18

LOCAL MULTIPLIERS

Apply to costs brought up-to-date from preceding pages. Do not apply to Section 98 or any other indexes.

UNITED STATES

CLASS	A	B	C	D	S
ALABAMA	.89	.88	.88	.86	.86
Anniston	.88	.88	.88	.84	.85
Auburn	.83	.84	.84	.82	.81
Bessemer	.92	.92	.92	.90	.88
Birmingham	.92	.92	.92	.92	.91
Dothan	.92	.92	.91	.91	.93
Florence	.88	.88	.87	.85	.84
Gadsden	.88	.89	.88	.86	.87
Huntsville	.91	.91	.91	.91	.91
Mobile	.90	.90	.91	.91	.90
Montgomery	.91	.91	.90	.90	.91
Opelika	.83	.84	.84	.82	.81
Phenix City	.83	.84	.84	.82	.81
Sheffield	.88	.88	.87	.85	.84
Tuscaloosa	.91	.90	.88	.85	.87
ALASKA	1.42	1.39	1.39	1.39	1.42
Anchorage	1.26	1.25	1.27	1.27	1.25
Fairbanks	1.25	1.25	1.27	1.27	1.25
Juneau	1.43	1.43	1.47	1.40	1.42
Kenai Peninsula	1.26	1.25	1.27	1.27	1.26
Ketchikan	1.37	1.37	1.39	1.35	1.39
Kodiak	1.43	1.41	1.42	1.40	1.40
Mat-Su Valley	1.22	1.22	1.24	1.22	1.23
Sitka	1.46	1.43	1.44	1.41	1.47
ARIZONA	.95	.94	.96	.94	.93
Apache County	.91	.89	.88	.88	.89
Bullhead City	.95	.93	.97	.97	.93
Casa Grande	.92	.90	.95	.95	.89
Cochise County	.96	.93	.94	.93	.94
Coconino County	1.00	.97	.97	.93	.93
Douglas	.96	.93	.94	.93	.94
Flagstaff	1.05	1.03	1.03	1.00	1.02
Gila County	.90	.89	.90	.89	.86
Graham County	.90	.90	.93	.91	.88
Greenlee County	.91	.90	.91	.89	.88
Kingman	.96	.94	.99	.98	.94
La Paz County	.92	.90	.97	.95	.90
Lake Havasu	.96	.94	1.00	.99	.95
Maricopa County	.96	.95	.95	.95	.93
Mohave County	.96	.93	.99	.98	.94
Navajo County	.94	.94	.94	.90	.89
Nogales	.96	.94	.95	.94	.94
Phoenix	.97	.96	.97	.96	.95
Pima County	.95	.94	.93	.91	.90
Pinal County	.91	.89	.94	.93	.88
Prescott	1.01	1.01	1.03	1.02	.96
Santa Cruz County	.96	.94	.95	.94	.94
Sedona	1.06	1.04	1.06	1.03	1.02
Tucson	.96	.94	.94	.93	.94
Yavapai County	.95	.96	.95	.94	.89
Yuma	.98	.95	.94	.94	.97
Yuma County	.95	.92	.91	.90	.94

CLASS	A	B	C	D	S
ARKANSAS	.87	.85	.86	.86	.85
Blytheville	.80	.79	.79	.80	.79
Fayetteville	.92	.92	.93	.92	.92
Fort Smith	.88	.87	.88	.88	.87
Hot Springs	.91	.89	.90	.90	.90
Jonesboro	.80	.79	.79	.80	.79
Little Rock	.92	.91	.92	.92	.92
Texarkana	.89	.87	.87	.86	.88
West Memphis	.90	.90	.90	.90	.88
CALIFORNIA	1.17	1.17	1.18	1.17	1.16
Alameda County	1.35	1.35	1.36	1.35	1.31
Alpine County	1.18	1.16	1.15	1.16	1.18
Amador County	1.18	1.16	1.15	1.16	1.18
Antelope Valley	1.15	1.14	1.14	1.14	1.16
Atascadero	1.15	1.15	1.14	1.15	1.14
Bakersfield	1.17	1.15	1.18	1.19	1.15
Barstow	1.16	1.14	1.15	1.15	1.15
Big Bear	1.17	1.18	1.18	1.19	1.20
Bishop	1.23	1.22	1.26	1.25	1.23
Blythe	1.10	1.11	1.13	1.12	1.11
Butte County	1.12	1.10	1.11	1.13	1.14
Calaveras County	1.10	1.10	1.12	1.12	1.12
Coalinga	1.17	1.16	1.19	1.18	1.17
Colusa County	1.13	1.12	1.13	1.13	1.14
Contra Costa County	1.34	1.34	1.35	1.34	1.31
Del Norte County	1.25	1.24	1.26	1.25	1.24
El Dorado County	1.21	1.20	1.17	1.19	1.22
Eureka	1.25	1.24	1.26	1.25	1.24
Fresno	1.19	1.19	1.22	1.21	1.19
Glenn County	1.13	1.12	1.13	1.13	1.14
Gilroy	1.18	1.18	1.20	1.19	1.20
Goleta	1.16	1.16	1.15	1.16	1.16
Hanford	1.12	1.12	1.13	1.12	1.10
Hesperia	1.12	1.10	1.09	1.11	1.10
Huntington Beach	1.24	1.21	1.21	1.22	1.22
Imperial County	1.13	1.13	1.15	1.15	1.14
Indio	1.15	1.15	1.14	1.16	1.15
Laguna Beach	1.24	1.21	1.19	1.22	1.22
Lake County	1.18	1.17	1.17	1.16	1.17
Lake Arrowhead	1.19	1.19	1.21	1.20	1.21
Lake Tahoe	1.22	1.21	1.22	1.19	1.22
Lompoc	1.17	1.17	1.16	1.17	1.16
Los Angeles	1.21	1.19	1.19	1.20	1.21
Madera	1.09	1.10	1.12	1.11	1.09
Mammoth Lakes	1.21	1.21	1.26	1.25	1.20
Marin County	1.32	1.32	1.34	1.32	1.29

CLASS	A	B	C	D	S
CALIFORNIA (Continued)					
Mariposa County	1.13	1.12	1.12	1.13	1.12
Marysville	1.11	1.10	1.11	1.12	1.12
Mendocino County	1.12	1.11	1.11	1.11	1.12
Merced	1.11	1.10	1.11	1.10	1.09
Modesto	1.12	1.11	1.14	1.11	1.11
Modoc County	1.15	1.13	1.14	1.14	1.15
Mono County	1.19	1.18	1.22	1.21	1.19
Monterey	1.28	1.26	1.25	1.23	1.25
Napa County	1.26	1.23	1.23	1.20	1.22
Nevada County	1.16	1.15	1.16	1.15	1.17
Newport Beach	1.24	1.22	1.21	1.22	1.22
Orange Co. (x/beaches)	1.22	1.20	1.19	1.20	1.22
Oxnard	1.16	1.14	1.15	1.17	1.17
Palm Springs	1.20	1.19	1.18	1.19	1.21
Paso Robles	1.16	1.16	1.15	1.16	1.14
Placer County	1.18	1.17	1.17	1.16	1.19
Plumas County	1.14	1.13	1.15	1.14	1.14
Redding	1.26	1.26	1.26	1.24	1.24
Riverside	1.15	1.13	1.14	1.17	1.15
Sacramento	1.21	1.19	1.20	1.19	1.21
Salinas	1.20	1.19	1.19	1.16	1.18
San Benito County	1.25	1.23	1.24	1.21	1.22
San Bernardino	1.14	1.11	1.14	1.14	1.13
San Clemente	1.23	1.21	1.21	1.22	1.23
San Diego	1.19	1.18	1.18	1.17	1.17
San Francisco	1.39	1.40	1.41	1.39	1.33
San Jose	1.36	1.36	1.38	1.38	1.32
San Luis Obispo	1.16	1.15	1.15	1.17	1.15
San Mateo County	1.33	1.34	1.34	1.32	1.29
Santa Barbara	1.20	1.19	1.20	1.21	1.21
Santa Clara County	1.32	1.31	1.31	1.29	1.27
Santa Cruz County	1.23	1.22	1.23	1.22	1.20
Santa Maria	1.23	1.23	1.23	1.23	1.23
Santa Rosa	1.24	1.23	1.22	1.20	1.23
Sierra County	1.14	1.13	1.15	1.14	1.14
Siskiyou County	1.26	1.26	1.26	1.24	1.24
Solano County	1.27	1.26	1.26	1.24	1.26
Stockton	1.18	1.17	1.17	1.17	1.18
Susanville	1.15	1.13	1.14	1.14	1.15
Tehama County	1.26	1.26	1.26	1.24	1.24
Trinity County	1.25	1.25	1.26	1.24	1.24
Tulare County	1.12	1.12	1.14	1.13	1.12
Tuolumne County	1.11	1.11	1.12	1.13	1.11
Ventura County	1.20	1.17	1.20	1.21	1.20
Victorville	1.14	1.14	1.13	1.16	1.14
Watsonville	1.21	1.19	1.19	1.17	1.20
Yolo County	1.13	1.10	1.12	1.13	1.14
Yuba City	1.12	1.09	1.10	1.12	1.13

The data included on this page becomes obsolete after March 2011.

LOCAL MULTIPLIERS

Apply to costs brought up-to-date from preceding pages. Do not apply to Section 98 or any other indexes.

UNITED STATES

CLASS	A	B	C	D	S
COLORADO	.96	.95	.97	.96	.95
Aspen	1.25	1.26	1.24	1.21	1.21
Boulder	.98	.97	.97	.97	.95
Colorado Springs	.99	.98	.97	.98	.97
Costilla County	.88	.87	.88	.88	.87
Denver	.98	.97	.98	.98	.97
Durango	.95	.94	.95	.93	.95
Eagle Co. (x/resort areas)	1.03	1.03	1.02	1.00	1.01
Fort Collins	.99	.98	1.01	.99	.97
Grand Junction	.98	.97	.98	.98	.98
Greeley	.99	.98	1.00	.99	.96
Gunnison County	1.00	1.00	1.01	1.00	.99
Kit Carson County	.90	.89	.89	.88	.89
Logan County	.91	.90	.91	.90	.89
Longmont	.97	.96	.99	.98	.96
Loveland	.97	.96	1.01	.99	.98
Moffat County	.93	.93	.93	.93	.93
Montrose County	.95	.94	.95	.92	.94
Prowers County	.90	.89	.91	.91	.89
Pueblo	.97	.94	.95	.95	.93
Steamboat Springs	1.27	1.27	1.25	1.22	1.20
Vail	1.25	1.26	1.24	1.21	1.21
CONNECTICUT	1.13	1.12	1.12	1.13	1.13
Bridgeport	1.19	1.17	1.18	1.18	1.19
Bristol	1.13	1.11	1.12	1.12	1.13
Danbury	1.18	1.16	1.17	1.19	1.22
Fairfield	1.16	1.14	1.17	1.17	1.16
Greenwich	1.29	1.27	1.25	1.28	1.29
Hartford	1.16	1.15	1.17	1.18	1.16
Meriden	1.12	1.11	1.11	1.13	1.11
Middletown	1.12	1.11	1.13	1.14	1.10
Milford	1.12	1.09	1.09	1.09	1.11
New Britain	1.14	1.12	1.13	1.14	1.11
New Haven	1.15	1.12	1.13	1.11	1.13
New London	1.08	1.08	1.09	1.12	1.07
Norwich	1.08	1.08	1.09	1.12	1.07
Stamford	1.28	1.27	1.24	1.28	1.29
Waterbury	1.12	1.10	1.09	1.09	1.11
Windsor Locks	1.14	1.13	1.13	1.14	1.14
DELAWARE	1.10	1.08	1.09	1.11	1.11
Dover	1.08	1.07	1.07	1.09	1.08
Wilmington	1.14	1.11	1.11	1.14	1.13
DIST. OF COLUMBIA	1.09	1.10	1.07	1.05	1.07
FLORIDA	.95	.94	.95	.96	.94
Bradenton	.98	.98	.98	1.00	.96
Brevard County	.96	.96	.96	.95	.94
Broward County	.98	.97	.98	.98	.97
Dade County	.97	.96	.97	.97	.97
Daytona Beach	.94	.95	.96	.95	.94
Fort Myers	.95	.94	.96	.97	.95
Fort Pierce	.96	.94	.95	.94	.95
Gainesville	.94	.95	.97	.95	.94
Jacksonville	.95	.96	.97	.97	.95
Key West	1.14	1.14	1.17	1.13	1.10
Lakeland	.95	.96	.99	.99	.94
Marathon	1.09	1.07	1.10	1.07	1.07

CLASS	A	B	C	D	S
FLORIDA (Continued)					
Miami	.97	.96	.97	.97	.97
Naples	.95	.96	.96	.97	.94
Ocala	.94	.94	.97	.95	.94
Orlando	.96	.97	.97	.98	.95
Palm Beach	1.00	.98	.98	.99	.99
Panama City	.81	.82	.81	.83	.81
Pensacola	.84	.83	.83	.85	.84
Pinellas County	.99	.99	1.00	1.01	.97
Sarasota	.98	.99	.98	1.02	.96
Tallahassee	.94	.93	.94	.94	.93
Tampa	.98	.98	.99	1.00	.96
Vero Beach	.98	.96	.96	.93	.95
GEORGIA	.88	.89	.87	.86	.87
Albany	.88	.89	.84	.84	.86
Athens	.91	.92	.88	.87	.89
Atlanta	.95	.96	.94	.94	.94
Augusta	.87	.89	.84	.83	.85
Columbus	.88	.89	.85	.84	.85
Macon	.89	.90	.88	.86	.88
Rome	.92	.93	.90	.88	.89
Savannah	.88	.88	.89	.90	.87
Valdosta	.85	.85	.84	.85	.83
HAWAII	1.44	1.45	1.42	1.43	1.43
Hilo	1.45	1.46	1.41	1.42	1.45
Kauai	1.45	1.47	1.44	1.45	1.45
Maui	1.45	1.46	1.43	1.44	1.45
Oahu	1.44	1.44	1.42	1.43	1.42
IDAHO	.99	.99	.98	.97	.98
Boise	.99	.99	1.01	.99	.99
Caldwell	.97	.97	1.00	.98	.97
Coeur d' Alene	1.02	1.01	.99	.97	1.00
Idaho Falls	1.00	.99	1.01	1.00	.99
Lewiston	1.00	.99	.96	.95	.97
Moscow	1.01	1.00	.96	.95	.98
Pocatello	.97	.96	.96	.96	.98
Twin Falls	.97	.98	.99	.97	.98
ILLINOIS	1.09	1.10	1.08	1.09	1.09
Alton	1.07	1.08	1.10	1.09	1.08
Aurora	1.23	1.24	1.23	1.22	1.20
Belleville	1.13	1.13	1.14	1.12	1.10
Bloomington	1.09	1.07	1.08	1.08	1.09
Carbondale	1.08	1.10	1.07	1.06	1.06
Centralia	1.05	1.03	1.04	1.04	1.05
Champaign	1.08	1.07	1.06	1.07	1.07
Chicago	1.26	1.27	1.25	1.25	1.24
Danville	1.08	1.07	1.06	1.07	1.07
De Kalb	1.22	1.23	1.21	1.20	1.19
Decatur	1.07	1.07	1.08	1.10	1.07
East St. Louis	1.12	1.12	1.13	1.13	1.12
Elgin	1.23	1.24	1.22	1.22	1.21
Evanston	1.24	1.25	1.23	1.22	1.21
Galesburg	1.09	1.08	1.06	1.07	1.08
Joliet	1.23	1.24	1.22	1.22	1.20
Kankakee	1.24	1.25	1.23	1.25	1.22
Marion	1.08	1.10	1.07	1.06	1.07
Moline	1.05	1.05	1.06	1.06	1.05

CLASS	A	B	C	D	S
ILLINOIS (Continued)					
Normal	1.08	1.07	1.07	1.08	1.09
Peoria	1.09	1.08	1.07	1.08	1.07
Quincy	1.13	1.15	1.14	1.12	1.10
Rock Island	1.08	1.07	1.08	1.09	1.08
Rockford	1.19	1.18	1.17	1.17	1.19
Skokie	1.25	1.26	1.25	1.26	1.24
Springfield	1.09	1.09	1.08	1.09	1.09
Urbana	1.08	1.07	1.06	1.07	1.07
Waukegan	1.24	1.25	1.23	1.21	1.21
INDIANA	.99	.99	.98	.99	.99
Anderson	1.01	.99	.99	1.00	1.00
Bloomington	1.00	1.00	.99	.99	1.00
Columbus	1.02	1.02	1.01	1.01	1.00
Elkhart	1.02	1.03	1.00	1.01	1.01
Evansville	.99	.99	.99	.99	.99
Fort Wayne	.97	.98	.97	.96	.97
Gary	1.22	1.23	1.21	1.21	1.20
Hammond	1.22	1.23	1.21	1.21	1.20
Indianapolis	1.02	1.02	1.02	1.03	1.02
Kokomo	1.02	1.02	1.00	1.02	1.00
Lafayette	1.02	1.01	1.01	1.02	1.02
Logansport	.98	.97	.95	.96	.97
Marion	.97	.97	.94	.94	.98
Michigan City	1.21	1.22	1.20	1.20	1.18
Muncie	.96	.95	.96	.97	.96
Richmond	.98	.97	.97	.98	.98
South Bend	1.00	1.01	1.00	1.00	.99
Terre Haute	1.00	1.00	1.01	1.02	1.00
IOWA	1.00	1.00	1.00	1.01	1.00
Burlington	1.00	1.00	1.00	1.01	1.02
Cedar Rapids	.99	.99	1.00	1.00	.99
Council Bluffs	.98	.97	.96	.95	.97
Davenport	1.07	1.07	1.08	1.08	1.08
Des Moines	.98	.99	.99	.99	.98
Dubuque	1.04	1.04	1.04	1.06	1.06
Fort Dodge	.99	1.00	.99	.99	1.00
Iowa City	1.00	1.00	1.01	1.02	1.02
Mason City	1.01	1.02	1.01	1.04	1.01
Sioux City	.95	.94	.93	.93	.95
Waterloo	1.00	1.01	1.00	1.01	1.00
KANSAS	.93	.93	.93	.92	.93
Dodge City	.94	.93	.95	.94	.94
Fort Scott	.93	.94	.93	.95	.92
Garden City	.87	.87	.88	.87	.86
Goodland	.92	.91	.92	.93	.90
Hays	.87	.86	.86	.84	.87
Kansas City	1.10	1.10	1.10	1.11	1.09
Lawrence	1.06	1.06	1.06	1.07	1.05
Liberal	.86	.86	.87	.85	.85
Manhattan	.95	.96	.97	.98	.94
Olathe	1.10	1.10	1.11	1.11	1.09
Overland Park	1.10	1.10	1.11	1.11	1.09
Pittsburg	.91	.91	.90	.90	.90
Salina	.97	.95	.95	.94	.96
Topeka	1.01	1.00	.99	.98	1.01
Wichita	.92	.91	.90	.88	.92

LOCAL MULTIPLIERS

Apply to costs brought up-to-date from preceding pages. Do not apply to Section 98 or any other indexes.

UNITED STATES

CLASS	A	B	C	D	S
KENTUCKY	.95	.94	.94	.94	.95
Ashland	.99	.98	.98	.99	.99
Bowling Green	.94	.93	.93	.94	.94
Covington	.95	.94	.96	.97	.96
Frankfort	.92	.91	.92	.93	.92
Lexington	.92	.91	.91	.92	.92
Louisville	.97	.96	.95	.96	.97
Newport	.95	.94	.96	.97	.96
Owensboro	.98	.97	.97	.96	.98
Paducah	.98	.96	.96	.96	.98
LOUISIANA	.90	.90	.90	.89	.89
Alexandria	.88	.89	.89	.88	.88
Baton Rouge	.90	.90	.91	.90	.90
Lafayette	.89	.90	.90	.90	.87
Lake Charles	.89	.89	.88	.86	.89
Monroe	.91	.92	.91	.90	.89
New Orleans	.91	.92	.92	.92	.90
Shreveport	.91	.92	.92	.92	.90
MAINE	1.02	1.01	1.03	1.02	1.00
Auburn	1.07	1.08	1.09	1.08	1.04
Augusta	1.05	1.04	1.06	1.04	1.04
Bangor	1.03	1.02	1.05	1.04	1.02
Biddeford	1.07	1.08	1.10	1.09	1.03
Caribou	.98	.98	.98	.99	.97
Lewiston	1.07	1.08	1.09	1.08	1.04
Portland	1.06	1.06	1.08	1.07	1.05
Presque Isle	.98	.98	.98	.99	.97
Waterville	1.01	1.01	1.02	1.01	1.00
MARYLAND	1.01	1.01	.99	.99	1.00
Anne Arundel County	1.06	1.06	1.03	1.03	1.04
Baltimore	1.04	1.04	1.04	1.04	1.01
Bethesda	1.07	1.09	1.06	1.03	1.05
Cumberland	.96	.95	.94	.93	.96
Eastern Shore Area	1.00	.98	.98	.99	.98
Hagerstown	1.02	1.01	1.00	.99	1.02
Silver Spring	1.07	1.09	1.06	1.03	1.06
MASSACHUSETTS	1.14	1.15	1.15	1.16	1.13
Boston	1.28	1.28	1.29	1.30	1.27
Cape Cod	1.16	1.16	1.18	1.19	1.15
Fall River	1.14	1.15	1.17	1.17	1.13
Holyoke	1.10	1.08	1.11	1.11	1.07
Lawrence	1.17	1.17	1.18	1.20	1.15
Lowell	1.18	1.17	1.18	1.20	1.16
Lynn	1.22	1.22	1.22	1.23	1.20
Methuen	1.18	1.18	1.18	1.22	1.16
Natick	1.20	1.20	1.20	1.24	1.19
New Bedford	1.15	1.16	1.17	1.18	1.14
Pittsfield	1.05	1.05	1.06	1.07	1.03
Springfield	1.14	1.13	1.15	1.14	1.12
Worcester	1.11	1.10	1.10	1.13	1.11

CLASS	A	B	C	D	S
MICHIGAN	1.02	1.00	1.00	1.00	1.00
Adrian	1.02	1.01	1.00	1.02	1.01
Alpena	.95	.94	.93	.93	.95
Ann Arbor	1.09	1.08	1.09	1.09	1.07
Battle Creek	1.07	1.06	1.04	1.06	1.06
Bay City	.99	.97	.98	.99	.97
Detroit	1.11	1.10	1.11	1.13	1.11
Escanaba	.98	.96	.96	.95	.97
Flint	1.10	1.09	1.09	1.07	1.09
Grand Rapids	.99	.98	.99	.99	.99
Ishpeming	1.00	.97	.98	.98	.99
Jackson	1.01	.99	1.00	1.02	.99
Kalamazoo	1.08	1.07	1.07	1.07	1.06
Lansing	1.07	1.06	1.03	1.03	1.07
Marquette	1.01	.98	.99	.99	.99
Monroe	1.09	1.08	1.09	1.10	1.07
Muskegon	.99	.96	.97	.98	.98
Niles	1.11	1.11	1.10	1.08	1.08
Pontiac	1.10	1.09	1.11	1.13	1.10
Port Huron	1.09	1.08	1.09	1.10	1.08
Saginaw	1.05	1.03	1.02	1.01	1.04
Sault Ste. Marie	.97	.94	.95	.94	.95
Traverse City	1.00	.98	1.00	.98	1.00
Ypsilanti	1.09	1.08	1.09	1.10	1.07
MINNESOTA	1.09	1.07	1.08	1.06	1.09
Austin	1.09	1.10	1.09	1.09	1.08
Brainerd	1.07	1.07	1.07	1.06	1.07
Duluth	1.11	1.11	1.10	1.08	1.10
Hibbing	1.11	1.09	1.08	1.05	1.09
Mankato	1.08	1.07	1.06	1.05	1.07
Minneapolis	1.17	1.18	1.18	1.18	1.15
Moorhead	1.06	1.04	1.04	1.02	1.06
Rochester	1.09	1.08	1.08	1.06	1.09
St. Cloud	1.13	1.11	1.10	1.07	1.13
St. Paul	1.17	1.18	1.18	1.18	1.15
MISSISSIPPI	.87	.88	.87	.88	.87
Biloxi	.88	.88	.87	.88	.86
Columbus	.88	.89	.88	.91	.88
Greenville	.91	.92	.90	.89	.91
Gulfport	.86	.87	.87	.88	.86
Hattiesburg	.87	.86	.86	.86	.86
Jackson	.87	.88	.89	.90	.87
Laurel	.89	.89	.87	.88	.88
Meridian	.88	.88	.88	.90	.88
Natchez	.85	.85	.86	.86	.85
Tupelo	.85	.87	.87	.88	.85
Vicksburg	.86	.87	.88	.89	.87

CLASS	A	B	C	D	S
MISSOURI	.98	.97	.97	.97	.96
Cape Girardeau	.96	.94	.95	.94	.93
Columbia	1.04	1.03	1.02	1.01	1.04
Independence	1.09	1.09	1.10	1.11	1.08
Jefferson City	1.01	.98	.98	1.00	.98
Joplin	.90	.89	.92	.91	.90
Kansas City	1.10	1.10	1.10	1.11	1.09
Rolla	.90	.90	.91	.90	.87
Springfield	.98	.97	.99	.98	.98
St. Joseph	1.05	1.06	1.05	1.06	1.03
St. Louis	1.12	1.12	1.13	1.13	1.12
MONTANA	.97	.95	.95	.93	.96
Billings	.95	.94	.97	.95	.95
Bozeman	.95	.94	.95	.95	.95
Butte	.95	.93	.95	.92	.94
Great Falls	1.00	.99	.98	.95	1.00
Helena	.90	.90	.93	.92	.91
Lewistown	.94	.94	.94	.94	.96
Missoula	.98	.95	.95	.92	.98
NEBRASKA	.91	.90	.91	.90	.91
Grand Island	.91	.89	.90	.90	.91
Lincoln	.98	.95	.95	.94	.96
Norfolk	.98	.97	1.00	.98	.98
North Platte	.92	.91	.92	.91	.92
Omaha	.98	.96	.97	.96	.98
NEVADA	1.05	1.04	1.04	1.01	1.05
Carson City	1.10	1.06	1.06	1.06	1.09
Elko	1.07	1.07	1.06	1.01	1.06
Fallon	1.02	.99	1.01	1.00	1.02
Las Vegas	1.13	1.12	1.14	1.14	1.13
Lincoln County	1.02	1.03	1.06	1.05	1.02
Nye County	.96	.93	.92	.88	.94
Reno	1.10	1.07	1.06	1.05	1.09
Sparks	1.10	1.07	1.07	1.05	1.09
Tahoe Area	1.21	1.18	1.19	1.19	1.20
NEW HAMPSHIRE	1.02	1.02	1.02	1.01	1.01
Concord	1.02	1.02	1.02	1.01	1.01
Dover	1.09	1.10	1.11	1.10	1.07
Keene	1.01	1.01	1.01	1.00	.99
Laconia	.99	.99	.99	.99	.98
Littleton	1.00	.98	.98	.97	.99
Manchester	1.07	1.07	1.09	1.07	1.06
Nashua	1.18	1.18	1.18	1.17	1.16
Portsmouth	1.05	1.05	1.07	1.06	1.03
Rochester	1.10	1.10	1.11	1.10	1.08
Salem	1.13	1.13	1.14	1.11	1.11

LOCAL MULTIPLIERS

Apply to costs brought up-to-date from preceding pages. Do not apply to Section 98 or any other indexes.

UNITED STATES

CLASS	A	B	C	D	S
NEW JERSEY	1.19	1.17	1.18	1.17	1.18
Asbury Park	1.17	1.16	1.16	1.16	1.18
Atlantic City	1.28	1.27	1.30	1.33	1.27
Bayonne	1.31	1.29	1.30	1.30	1.26
Camden	1.22	1.20	1.19	1.19	1.19
Clifton	1.29	1.27	1.29	1.28	1.25
East Orange	1.29	1.27	1.29	1.29	1.25
Edison	1.29	1.27	1.29	1.29	1.25
Elizabeth	1.30	1.27	1.29	1.29	1.25
Fairlawn	1.30	1.28	1.29	1.29	1.26
Hackensack	1.30	1.28	1.30	1.29	1.27
Irvington	1.30	1.28	1.31	1.31	1.27
Jersey City	1.31	1.29	1.30	1.30	1.26
Lakewood	1.17	1.15	1.17	1.17	1.16
Morristown	1.30	1.28	1.31	1.31	1.27
New Brunswick	1.29	1.27	1.29	1.29	1.25
Newark	1.31	1.29	1.32	1.33	1.28
Passaic	1.29	1.27	1.29	1.28	1.25
Paterson	1.30	1.28	1.29	1.29	1.26
Plainfield	1.18	1.16	1.19	1.18	1.15
Somerville	1.27	1.25	1.28	1.26	1.25
Teaneck	1.30	1.28	1.30	1.29	1.26
Trenton	1.27	1.26	1.25	1.25	1.26
Vineland	1.18	1.17	1.17	1.19	1.19
West Orange	1.28	1.26	1.28	1.28	1.23
NEW MEXICO	.94	.94	.93	.91	.93
Alamogordo	.93	.94	.92	.89	.91
Albuquerque	.95	.95	.93	.93	.93
Carlsbad	.94	.95	.94	.94	.92
Clovis	.91	.90	.88	.84	.91
Farmington	.99	.99	.98	.97	.98
Gallup	.96	.94	.93	.93	.94
Hobbs	.93	.94	.93	.93	.91
Las Cruces	.92	.91	.90	.88	.91
Los Alamos	.98	.98	.99	1.00	.96
Portales	.93	.92	.90	.90	.91
Roswell	.95	.94	.92	.89	.95
Santa Fe	.97	.98	.99	.98	.95
Taos	1.06	1.07	1.09	1.09	1.05
NEW YORK	1.06	1.04	1.05	1.07	1.05
Albany	1.08	1.07	1.09	1.11	1.08
Amsterdam	1.07	1.06	1.08	1.12	1.09
Auburn	1.03	1.02	1.02	1.05	1.05
Binghamton	1.03	1.03	1.01	1.04	1.02
Buffalo	1.14	1.14	1.16	1.17	1.14
Elmira	1.01	1.00	1.01	1.03	1.00
Ithaca	1.01	1.00	1.02	1.04	1.02
Jamestown	1.04	1.03	1.05	1.06	1.04
Kingston	1.17	1.18	1.16	1.20	1.19
NEW YORK CITY AREA					
Bronx	1.43	1.41	1.41	1.45	1.42
Brooklyn	1.41	1.40	1.40	1.43	1.40
Manhattan	1.43	1.42	1.41	1.45	1.42
Nassau County	1.42	1.41	1.40	1.44	1.41
Orange County	1.27	1.26	1.26	1.27	1.28
Putnam County	1.28	1.27	1.28	1.31	1.31
Queens	1.41	1.40	1.40	1.43	1.42
Rockland County	1.29	1.28	1.28	1.31	1.29
Staten Island	1.34	1.33	1.30	1.35	1.32
Suffolk County	1.42	1.41	1.40	1.44	1.41
Westchester County	1.30	1.29	1.28	1.32	1.32
Yonkers	1.43	1.42	1.41	1.45	1.42
Niagara Falls	1.14	1.13	1.12	1.15	1.12
Plattsburgh	1.03	1.02	1.02	1.06	1.03
Poughkeepsie	1.17	1.18	1.17	1.21	1.19
Rochester	1.11	1.11	1.10	1.11	1.11
Rome	1.04	1.04	1.04	1.08	1.04
Schenectady	1.08	1.06	1.07	1.12	1.09
Syracuse	1.09	1.09	1.10	1.10	1.09
Troy	1.11	1.10	1.11	1.14	1.11
Utica	1.04	1.04	1.05	1.08	1.04
Watertown	1.02	1.00	1.00	1.03	1.00
NORTH CAROLINA	.91	.92	.90	.90	.92
Asheville	.95	.94	.93	.91	.94
Charlotte	.92	.93	.91	.91	.91
Durham	.94	.95	.92	.92	.94
Fayetteville	.91	.93	.90	.91	.92
Gastonia	.94	.93	.94	.92	.94
Goldsboro	.90	.91	.88	.89	.91
Greensboro	.95	.97	.95	.94	.95
Greenville	.87	.89	.86	.87	.89
Hickory	.88	.89	.88	.89	.92
Jacksonville	.89	.91	.87	.87	.89
Raleigh	.94	.95	.92	.92	.94
Rocky Mount	.90	.92	.88	.89	.92
Wilmington	.95	.95	.93	.94	.95
Winston-Salem	.89	.90	.90	.87	.91
NORTH DAKOTA	1.01	.99	.99	.95	1.01
Bismarck	1.02	1.00	1.00	.98	1.02
Fargo	1.01	1.00	1.00	.97	1.01
Grand Forks	.99	.97	.97	.93	.98
Jamestown	.99	.97	.98	.93	.99
Mandan	1.00	.99	.97	.93	1.00
Minot	1.02	1.00	1.00	.99	1.02
Williston	.99	.98	.99	.94	1.00
OHIO	.98	.98	.98	.97	.98
Akron	1.03	1.02	1.03	1.03	1.02
Canton	.99	1.00	.99	.99	.99
Cincinnati	.97	.96	.97	.98	.97
Cleveland	1.07	1.06	1.07	1.06	1.07
Columbus	1.02	1.03	1.01	1.01	1.01
Dayton	.97	.97	.98	.99	.97
East Liverpool	1.07	1.06	1.08	1.05	1.05
Hamilton	.93	.92	.96	.95	.94
OHIO (Continued)					
Lima	.97	.98	.96	.95	.96
Lorain County	1.05	1.04	1.05	1.04	1.05
Mansfield	1.00	1.00	.97	.98	.98
Marion	1.00	1.00	.97	.98	.98
Middletown	.93	.92	.94	.95	.94
Newark	1.01	1.02	.99	.99	.99
Portsmouth	.92	.90	.91	.92	.92
Springfield	.96	.96	.96	.98	.96
Toledo	1.06	1.05	1.05	1.05	1.05
Youngstown	1.07	1.07	1.05	1.03	1.07
OKLAHOMA	.87	.88	.88	.86	.86
Ardmore	.95	.94	.95	.93	.94
Bartlesville	.88	.88	.89	.86	.86
Enid	.88	.88	.88	.87	.88
Lawton	.86	.88	.88	.85	.85
Norman	.94	.95	.95	.93	.94
Oklahoma City	.94	.95	.95	.93	.94
Tulsa	.91	.91	.92	.90	.90
OREGON	1.05	1.05	1.04	1.04	1.05
Albany	1.06	1.05	1.03	1.03	1.05
Altamont	1.02	1.01	1.01	1.01	1.04
Astoria	1.05	1.05	1.03	1.03	1.04
Bend	1.08	1.08	1.08	1.09	1.07
Coos Bay	1.03	1.03	1.03	1.03	1.03
Corvallis	1.06	1.05	1.03	1.03	1.04
Eugene	1.09	1.08	1.08	1.07	1.08
Grants Pass	1.04	1.03	1.02	1.02	1.05
Klamath Falls	1.02	1.01	1.01	1.01	1.04
Medford	1.05	1.05	1.05	1.05	1.05
North Bend	1.03	1.03	1.03	1.04	1.03
Pendleton	1.09	1.08	1.08	1.10	1.08
Portland	1.09	1.09	1.08	1.09	1.08
Roseburg	1.02	1.01	1.00	1.00	1.03
Salem	1.08	1.08	1.05	1.06	1.06
Springfield	1.02	1.01	1.02	1.02	1.03
The Dalles	1.10	1.10	1.07	1.07	1.08
PENNSYLVANIA	1.09	1.06	1.06	1.05	1.06
Allentown	1.18	1.19	1.15	1.17	1.14
Altoona	1.11	1.11	1.09	1.09	1.09
Bethlehem	1.15	1.16	1.12	1.14	1.13
Easton	1.13	1.15	1.11	1.12	1.10
Erie	1.09	1.08	1.09	1.08	1.07
Harrisburg	1.07	1.06	1.05	1.04	1.05
Johnstown	1.08	1.07	1.08	1.06	1.05
Lancaster	1.09	1.07	1.06	1.06	1.06
Norristown	1.27	1.26	1.26	1.27	1.26
Philadelphia	1.27	1.26	1.26	1.27	1.26
Pittsburgh	1.11	1.10	1.09	1.09	1.10
Reading	1.15	1.15	1.13	1.13	1.11
Scranton	1.05	1.04	1.04	1.04	1.05
State College	1.07	1.06	1.05	1.05	1.05
Wilkes-Barre	1.07	1.06	1.05	1.05	1.07
Williamsport	1.06	1.04	1.04	1.04	1.05
York	1.08	1.07	1.06	1.05	1.06

LOCAL MULTIPLIERS

Apply to costs brought up-to-date from preceding pages. Do not apply to Section 98 or any other indexes.

UNITED STATES

CLASS	A	B	C	D	S
RHODE ISLAND	1.10	1.10	1.13	1.11	1.09
Newport	1.09	1.09	1.12	1.10	1.07
Providence	1.15	1.15	1.18	1.18	1.15
Warwick	1.11	1.11	1.14	1.12	1.10
SOUTH CAROLINA	.89	.90	.89	.90	.88
Anderson	.88	.89	.88	.89	.88
Charleston	.90	.91	.91	.91	.90
Columbia	.89	.90	.90	.91	.89
Florence	.91	.93	.91	.90	.89
Greenville	.87	.88	.87	.88	.85
Myrtle Beach	.89	.91	.90	.90	.89
Rock Hill	.88	.90	.90	.92	.89
Spartanburg	.89	.89	.87	.89	.88
SOUTH DAKOTA	.96	.94	.96	.95	.95
Aberdeen	.96	.94	.96	.95	.95
Brookings	.96	.94	.95	.94	.95
Huron	.97	.95	.96	.94	.95
Mitchell	.97	.95	.96	.94	.95
Pierre	.95	.94	.96	.93	.96
Rapid City	.94	.94	.95	.93	.94
Sioux Falls	.95	.94	.96	.96	.95
Vermillion	.96	.94	.95	.94	.95
Watertown	.96	.94	.95	.94	.95
Yankton	.95	.94	.94	.94	.94
TENNESSEE	.90	.90	.89	.89	.89
Bristol	.89	.89	.87	.90	.87
Chattanooga	.93	.93	.91	.91	.93
Columbia	.89	.89	.88	.86	.86
Jackson	.88	.87	.89	.90	.89
Johnson City	.88	.86	.85	.87	.86
Kingsport	.94	.94	.92	.93	.94
Knoxville	.94	.94	.92	.92	.94
Memphis	.90	.90	.90	.91	.89
Nashville	.91	.92	.91	.91	.91
TEXAS	.85	.85	.86	.86	.85
Abilene	.90	.91	.91	.90	.90
Amarillo	.90	.90	.92	.90	.90
Austin	.85	.86	.85	.85	.84
Baytown	.85	.85	.86	.86	.86
Beaumont	.85	.85	.88	.88	.86
Cameron County	.78	.78	.79	.79	.78
Corpus Christi	.84	.84	.85	.83	.84
Dallas	.89	.90	.90	.90	.88
El Paso	.92	.92	.91	.91	.91
Fort Worth	.89	.90	.90	.90	.88
Galveston	.87	.86	.89	.87	.86
Hidalgo County	.78	.78	.79	.79	.78
Houston	.88	.88	.89	.88	.88
Laredo	.77	.76	.78	.79	.77

CLASS	A	B	C	D	S
TEXAS (Continued)					
Longview	.94	.96	.96	.94	.93
Lubbock	.87	.88	.89	.88	.87
Marshall	.89	.90	.90	.93	.89
Midland	.85	.86	.86	.87	.85
Odessa	.86	.86	.88	.87	.86
Port Arthur	.83	.83	.87	.88	.86
San Angelo	.83	.84	.84	.86	.84
San Antonio	.81	.81	.83	.83	.81
Texas City	.87	.86	.89	.88	.87
Tyler	.87	.88	.87	.88	.87
Victoria	.78	.78	.79	.82	.80
Waco	.84	.84	.84	.85	.85
Wichita Falls	.88	.89	.87	.89	.87
UTAH	.94	.95	.94	.95	.93
Cedar City	.92	.94	.93	.94	.92
Ogden	.97	.97	.99	.99	.95
Orem	.96	.97	.97	.97	.94
Provo	.96	.96	.97	.97	.95
Salt Lake City	.97	.97	.98	.96	.95
St. George	.92	.94	.93	.94	.92
VERMONT	1.04	1.05	1.07	1.05	1.04
Barre	1.03	1.05	1.07	1.04	1.03
Brattleboro	1.04	1.04	1.04	1.03	1.02
Burlington	1.05	1.06	1.07	1.05	1.05
Montpelier	1.03	1.05	1.07	1.05	1.03
Rutland	1.03	1.05	1.05	1.04	1.00
VIRGINIA	.93	.93	.92	.93	.92
Alexandria	1.08	1.10	1.07	1.04	1.06
Arlington	1.09	1.10	1.08	1.04	1.06
Charlottesville	.92	.91	.92	.92	.92
Chesapeake	.97	.97	.95	.96	.94
Danville	.93	.92	.90	.91	.91
Fredericksburg	1.05	1.05	1.04	1.04	1.03
Hampton	.97	.97	.96	.97	.96
Lynchburg	.90	.89	.90	.91	.90
Newport News	.97	.97	.96	.97	.96
Norfolk	.98	.98	.96	.96	.96
Petersburg	.91	.91	.92	.92	.90
Portsmouth	.97	.97	.95	.96	.94
Richmond	.95	.95	.95	.96	.95
Roanoke	.95	.96	.95	.95	.94
Virginia Beach	.98	.98	.96	.97	.96
Winchester	.97	.97	.95	.95	.96

CLASS	A	B	C	D	S
WASHINGTON	1.12	1.12	1.12	1.12	1.11
Bellingham	1.14	1.13	1.15	1.13	1.11
Clallam County	1.14	1.14	1.15	1.13	1.12
Everett	1.20	1.20	1.19	1.19	1.18
Island County	1.18	1.18	1.19	1.18	1.17
Kitsap County	1.16	1.16	1.17	1.15	1.13
Longview	1.08	1.07	1.06	1.05	1.08
Olympia	1.18	1.17	1.21	1.20	1.17
Pasco (Tri-cities)	1.10	1.09	1.09	1.09	1.08
Seattle	1.21	1.21	1.22	1.20	1.19
Spokane	1.08	1.07	1.05	1.03	1.06
Tacoma	1.19	1.19	1.20	1.19	1.17
Vancouver	1.09	1.08	1.08	1.08	1.08
Walla Walla	1.09	1.07	1.07	1.08	1.07
Wenatchee	1.08	1.07	1.06	1.05	1.05
Yakima	1.09	1.07	1.08	1.08	1.07
WEST VIRGINIA	1.05	1.03	1.03	1.04	1.06
Beckley	1.04	1.04	1.04	1.05	1.06
Bluefield	1.04	1.04	1.04	1.05	1.06
Charleston	1.05	1.05	1.05	1.06	1.07
Clarksburg	1.05	1.05	1.05	1.05	1.06
Fairmont	1.07	1.06	1.06	1.06	1.06
Huntington	1.05	1.04	1.04	1.05	1.08
Morgantown	1.05	1.04	1.04	1.05	1.07
Parkersburg	1.04	1.03	1.04	1.03	1.05
Wheeling	1.07	1.05	1.05	1.05	1.05
WISCONSIN	1.07	1.06	1.07	1.07	1.07
Appleton	1.07	1.05	1.06	1.05	1.05
Beloit	1.09	1.09	1.09	1.09	1.07
Eau Claire	1.08	1.07	1.08	1.08	1.08
Fond du Lac	1.06	1.04	1.03	1.03	1.03
Green Bay	1.06	1.05	1.07	1.06	1.06
Janesville	1.08	1.08	1.08	1.08	1.08
Kenosha	1.14	1.13	1.13	1.11	1.13
La Crosse	1.10	1.07	1.08	1.09	1.08
Madison	1.10	1.10	1.10	1.10	1.10
Manitowoc	1.09	1.08	1.08	1.10	1.10
Milwaukee	1.12	1.11	1.12	1.11	1.12
Oshkosh	1.07	1.05	1.05	1.05	1.05
Racine	1.09	1.09	1.08	1.07	1.09
Sheboygan	1.10	1.08	1.09	1.08	1.09
Superior	1.08	1.08	1.07	1.05	1.07
Wausau	1.08	1.06	1.08	1.08	1.06
WYOMING	.97	.96	.95	.95	.96
Casper	.98	.97	.97	.96	.98
Cheyenne	.96	.94	.93	.93	.95
Cody	.95	.94	.93	.90	.94
Laramie	.98	.96	.95	.98	.98
Rock Springs	1.00	1.00	.98	1.00	1.00
Sheridan	.96	.96	.96	.95	.98

The data included on this page becomes obsolete after March 2011.