

User Manual March 18, 2024

Theory:	Economic Age-Life Depreciation and Marginal Cost	2
Cost Data:	National Building Cost modifications of base cost	5
Navigation:	How to get from one calculator to the next	6
Sidekick:	Depreciated cost adjustments from Effective Age and Economic Life	7
Solomon Adjustment:	Depreciated cost adjustments from Remaining Economic Life	9
Solomon Cost:	Depreciated cost adjustments from the Cost Approach	10
Solomon Cost New:	Marginal replacement cost adjustments when there is no depreciation	16
Solomon Site:	Extract site value from a sale with similar site characteristics	18
Solomon Manufactured:	Depreciated cost adjustments from Remaining Economic Life	19
Solomon Market Time:	Develop and document time adjustments from a rate of change	20
Solomon Grouped Data	Extend the logic of Paired Data analysis to groups of data	21
Secondary Data:	Apply survey data percentages to market value of comparable properties.	19
Sensitivity Analysis:	Find correlation between adjusted sale price and unadjusted grid categories	23
Forecast Analysis:	Forecast value and adjustment rates from adjusted sale price	24
Reporting:	Suggested wording to explain your adjustments	25
Glossary:	Definitions with references to authoritative sources	26
Single Family Quality Ratings ar	nd Complexity	27
Manufactured Housing Illustrat	ions and Quality Ratings	29
Building Cost Historical Index		31

Theory

Solomon is a suite of calculators that simplify the use of recognized methods in the sales grid. Six of the calculators are based on cost. Your subscription includes cost data licensed from Craftsman Book Company "National Building Cost 2024".

Solomon simplifies depreciated cost analysis. Depreciated cost is a recognized method¹ of developing adjustments in the sales grid.

The underlying concept is that real estate appraisers are engaged to develop an opinion of value that includes the site, "as-is" value of site improvements and the contributory value of the house. A key part of the analysis is the sales comparison grid, in which the appraiser applies adjustments to comparable sales. These adjustments reflect the contributory value of features of the house. If the house contributes 70% of its cost, and one more square foot of GLA costs \$100, then a GLA adjustment of \$70 is supported. If one more bath costs \$10,000, an adjustment of \$7,000 makes sense.

Here is an example: When a buyer and seller agree on a price of \$450,000, an appraiser who knows land values should think of this as the buyer paying \$100,000 for the site and \$350,000 for the building. (Assume \$100,000 includes "As-is value of Site Improvements.) The \$350,000 amount is called the Contributory Value of the Improvements. An appraiser who goes the next step and applies unbiased 3rd party cost data to the building characteristics may find that the current replacement cost of the building is \$500,000.

This means that depreciation is \$150,000. Contributory Value is 70% of replacement cost. (\$350,000 / \$500,000).

The assumptions of Economic Age-Life Depreciation (assumed in the 1004) are:



1. Effective Age / Economic Life is the percentage of depreciation.

2. Economic Life – Effective Age is Remaining Economic Life.

3. Remaining Economic Life / Economic Life is the percentage of current replacement cost paid by the market.

Solomon will help you support assignment results like effective age and remaining economic life. Beyond that, Solomon will simplify your analysis of these assignment results and their relationship to sales grid adjustments.

Economic Age-Life Depreciation is the first of two key concepts you need to understand to properly apply depreciated cost analysis.

When remaining economic life is extracted from the market, we have a basis for developing market-based adjustments *if we handle published cost data correctly.*

GLA cost data is published as average cost. We need to compare total cost of GLA, just like we compare sale prices of two comps we are using for a paired sale adjustment.

Key Point

Assume we need to support a GLA adjustment for a 2400sf house. We have located two sales in MLS that are identical except for GLA. Comp 1 has 2500sf and Comp 2 has 2300sf.

	Market Value	GLA	Adjustment
Comp 1	\$460,000	2500	
Comp 2	\$446,000	2300	
	\$14,000	200	\$70

The adjustment is developed by dividing the change in market value by the change in GLA. In this case, \$70.

This is a classic example of Paired Data analysis.

¹ The Appraisal of Real Estate 15th Edition p372

"Paired data analysis is based on the premise that when two properties are equivalent in all respects but one, the value of the single difference can be measured by the difference in price between the two properties."²

The logic is rock solid. Application of this logic is limited by the appraiser's ability to locate pairs that are 'equivalent in all respects but one.'

Depreciated cost analysis overcomes the 'sparse pair' problem.

If you are not able to find 'two properties equivalent in all respects but one' in MLS, there is another source of data that will provide the answer. This source is the cost manual.

If the average cost of 2500sf of GLA is \$144/sf, and the average cost of 2300sf of GLA is \$147.83/sf, we know that a change in GLA of 200sf results in a change in cost of \$20,000.

	GLA Size	Avg Cost	Total Cost	Marginal Cost
Comp 1	2500	\$144.00	\$360,000	
Comp 2	2300	\$147.83	\$340,000	
Change	200		\$20,000	\$100.00

Key Point

The change in total cost divided by the change in GLA is the marginal cost of GLA.

Marginal cost is the additional cost incurred in the production of one more unit of a good or service³

When there is no depreciation, the contributory value is 100% of its cost. The marginal cost of a feature is the adjustment rate.

When there is depreciation, we need to combine the concept of marginal cost with economic age-life depreciation (assumed in the residential appraisal forms). If depreciation is 30%, then contributory value is 70%. If contributory value is 70% of cost, the GLA adjustment is \$70.00. \$100 x 70% is \$70.

Key Point

Economic Age-Life Depreciation: "A method of estimating depreciation in which the ratio between the effective age of a building and its total economic life is applied to the current cost of the improvements to obtain a lump-sum deduction; also known as the age-life method."⁴

Economic Life: "The period over which improvements to real estate contribute to property value."⁵

Effective Age: "The age of property that is based on the amount of observed deterioration and obsolescence it has sustained, which may be different from its chronological age."⁶

Remaining Economic Life: "The estimated period over which existing improvements are expected to contribute economically to a property; an estimate of the number of years remaining in the economic life of a structure or structural components as of the effective date of the appraisal; used in the economic age-life method of estimating depreciation."⁷

Recall our earlier example:

Depreciation is \$150,000.

\$150,000 / \$500,000 = 30%

The contributory value of the building is \$350,000. Replacement cost is \$500,000.

\$350,000 / \$500,000 = 70%



² ibid

³ Economics Online

⁴ The Dictionary of Real Estate Appraisal 6th Edition

⁵ ibid

⁶ ibid

⁷ ibid

If Economic Life is 60 years, and depreciation is 30%, Effective Age must be 18 years. 18/60 = 30%

If Effective Age is 18 years, Remaining Economic Life must be 42 years. 60 - 18 = 42.

Contributory value of the building, as a percentage replacement cost, is Remaining Economic Life / Economic Life.

42/60 = 70%

Depreciated cost is a recognized method of developing adjustments for the sales grid.⁸ You need to start with a source of unbiased third-party cost data. The next step is to extract marginal cost from the cost manual. The third step is to extract depreciation from the market by completing the cost approach. Solomon automates all of this for you.

Sidekick uses the appraiser's estimates of Economic Life and Effective Age to calculate depreciated cost adjustments for GLA and sixteen other cost categories.

Solomon Adjustment uses the appraiser's estimate of Remaining Economic Life to calculate depreciated cost adjustments for GLA and nine other cost categories.

Solomon Cost extracts depreciation from the appraiser's estimate of market value and observed building characteristics to calculate depreciated cost adjustments for GLA and fifteen other cost categories.

Solomon Cost New is designed for new construction when there is no depreciation. Marginal replacement cost is calculated for GLA and thirteen other cost categories.

Solomon Site extracts site value from a comp sale price, building characteristics and the appraiser's estimate of effective age.

Solomon Manufactured calculates GLA and six other adjustments for manufactured housing.

Beyond cost related adjustments, Solomon provides tools you can use for adjustments that are not directly related to cost.

Solomon Market Time develops and documents market time adjustments by applying a rate of change to the interval between comparable contract date and report effective date. Rate of change is developed with secondary data (included) or \$ per day.

Secondary Data applies survey data percentages to market value of comparable properties

Sensitivity Analysis finds and documents the correlation between adjusted sale price and unadjusted grid categories.

Forecast Analysis forecasts an acreage site value from acreage site sales, an improved parcel from GLA etc.

All Solomon calculators are web applications you access by subscription.

Monthly subscriptions are renewed automatically. There is no contract, and you may cancel your subscription at any time.

Annual subscriptions offer a savings of two months compared to monthly subscriptions. Annual subscriptions need to be renewed manually.

Solomon Plus includes all ten calculators.

The standard Solomon subscription does not include Sidekick, Secondary Data, Sensitivity Analysis or Forecast Analysis.

For any questions related to your subscription, contact info@solomonappraisalllc.com

For questions about appraisal related matters and the use of the Solomon calculators, contact Scott Cullen at scullen2@comcast.net

Cost Data

Solomon licenses cost data from National Building Cost published by Craftsman Book Company. This means you do not need to pay separately for cost data. Solomon uses relevant data for each calculator in a streamlined manner. Quality and complexity assumptions are shown in Appendix B.

Cost data is comprised of a base cost, area modification factor and other factors. Solomon calls uses the term Zip Code Multiplier for Area Modification Factor. These are costs related to climate, material costs and labor rates that vary across the county. To bypass this cost modification, enter base instead of entering a zip code.

Other cost modifications are related to multiple builds, masonry construction etc. This is the quotation from National Building Cost:

"Note: Tract work and highly repetitive jobs may reduce the cost 8 to 12%. Add 4% to the square foot cost of floors above the second-floor level. Work outside metropolitan areas may cost 2 to 6% less. When the exterior walls are masonry, add 9 to 10% for class 2 and 1 structures and 5 to 8% for class 3, 4, 5 and 6 structures."

The Solomon interpretations of how these should applied are as follows:

Quality Rating	1	2	3	4	5	6
Multiple Builds	-12	-11	-10	-9	-8	-8
Masonry Construction	10	9	8	7	6	5

Navigation

Solomon Plus includes ten separate calculators.

Click the 'hamburger' to open or close the menu selections.

Click any calculator name

Solomon Adjustment Calculators Go To Colomon Adjustment click to open or close the Login vertical menu on the left Market Based Adjustments Sidekick Solomon Adjustment Solomon Cost Zip Code GLA Basement Size Solomon Cost New 71 Qua click name to open any Basement Finish Solomon Site of ten calculators Full Bath Solomon Manufactured 05 Half Bath Solomon Market Time ○6 Fireplace Secondary Data First Garage Stall Sensitivity Analysis Quality Level Half Step Additional Garage Stall Forecast Analysis Remaining Economic Life First Carport Stall Upload - Report Data Factor (see user manual) Additional Carport Stall Login Help Terms & Conditons For Use Calculate Print Rep User Manual Survey Results Remaining Economic Life is the method used to measure market reaction to the tiest Property. It is an ecceptial factor in this process of determining market OPEN FORMS click to view survey results estimated by appraisers. We recommend Solo on Cost t. Q1-Q3 = 70 Years, Q4-Q5 = 60 Years and Q6 = 55 Years. The Cost Approach can be used to calculate Depreciation by starting with an assumed market value. Sidekick Solomon Cost - New Const Solomon Manufactured © SolomonAppraisal.com LLC Survey Results Login

Click 'Survey Results' to view adjustments developed from peer consensus surveys.

× Close all

Surveys are a form of secondary data. "Another form of data analysis—secondary data analysis—is used to support adjustments derived by other methods. This technique makes use of data that does not directly pertain to the subject or comparable properties. This secondary data describes the general real estate market and is usually collected by a data vendor research firm or government agency like the county assessor. Secondary data may need verification.⁹

Survey results can be found at <u>https://www.peerconsensus.com/survey-results/</u> These survey results are used to power the Secondary Data calculator.

⁹ The Appraisal of Real Estate 15th Edition p373

1. Sidekick calculates depreciated cost adjustments from the appraiser's quality rating, zip code and estimates of Economic Life and Remaining Economic Life.

2. Cost data is comprised of a base cost, area modification factor and other factors. Solomon uses the term Zip Code Multiplier for area modification factor. These are costs related to climate, material costs and labor rates that vary across the county. To bypass this cost modification, enter base instead of entering a zip code.

Other cost modifications are related to multiple builds, masonry construction etc. This is the quotation from National Building Cost:

"Note: Tract work and highly repetitive jobs may reduce the cost 8 to 12%. Add 4% to the square foot cost of floors above the secondfloor level. Work outside metropolitan areas may cost 2 to 6% less. When the exterior walls are masonry, add 9 to 10% for class 2 and 1 structures and 5 to 8% for class 3, 4, 5 and 6 structures."

Solomon interpretation follows:

SIDEKICK							
UAD Quality v 4	Contributory	Value					
Zip Code 55123							
Economic Life 60		25%					
Effective Age 15							
Remaining Economic Life 45							
Depreciation % 25	75%		GLA	Bracketing	2316		
Contributory Value % 75			Com	Search Dance	2010		
Factor (see user manual)			Comp	p Search Range	20%	1852	2779
	Depreciato	on Contributory Value	Comp	p Search Range	25%	1737	2895
4 Calculate	EqD	<u>%EL</u>	<u>Adjust</u>				
Gross Living Area	87	63	55				
Above Grade Full Bath	9,199	100	9,199				
Above Grade Half Bath	4,468	100	4,468				
Basement Size	18	100	18				
Basement Finish	32	50	16				
Basement Full Bath	9,199	50	4,600				
Basement Half Bath	4,468	50	2,234				
Fireplace	3,016	100	3,016				
Additional Fireplace	3,016	50	1,508				
First Garage Stall	14,465	100	14,465				
Additional Garage Stall	8,984	100	8,984				
First Carport	3,689	100	3,689				
Additional Carport	2,460	100	2,460				
100sf Deck	2,856	33	942				
100sf Covered Porch	4,370	50	2,185				
100sf Screen Porch	5,856	67	3,924				
100sf Enclosed Porch	6,555	75	4,916				
		7					
Calibrate Adjustments		Pnnt P	Report				

Quality Rating	1	2	3	4	5	6
Multiple Builds	-12	-11	-10	-9	-8	-8
Masonry Construction	10	9	8	7	6	5

- 3. Enter subject GLA to get +/- 20% and +/- 25% MLS search criteria.
- 4. Click Calculate to see results.

5. %EL means percent of economic life. The default percentages shown work well for previously owned houses. Change these to fit your market.

- 6. Click Calibrate Adjustments for results.
- 7. Click Print report or screen shot to archive your calculations.

Sidekick works as follows:

- 1. Marginal Cost is extracted from unbiased 3rd party cost data for the appraiser's choice of quality rating.
- 2. Marginal Cost is matched to location and other factors by use of a Multiplier.
- 3. The percentage of Contributory Value is extracted from the appraiser's estimates of Economic Life and Effective Age.
- 4. Marginal Cost x % Contributory Value is the adjustment rate. These results are shown in the EqD column.

Note: The economic life of individual components of a building have different economic life than the building as a whole. Short lived items depreciate more quickly. For example, a deck has 20-year lifespan. This is 33% of 60 years, so the appraiser can account for this by entering 33 in the %EL column. Another example is a basement bath which may have functional depreciation. %EL numbers are pre-filled in Sidekick but can be altered by the user. "In applying the concepts of economic life, effective age, and remaining economic life expectancy, appraisers consider all elements of depreciation in one calculation. Therefore, the effective age estimate includes not only physical wear and tear but also any loss in value for functional and external considerations. This type of analysis is characteristic of the market extraction and economic age-life depreciation methods."¹⁰

Explaining your adjustments:

Edit as necessary: "Building categories such as GLA, bath, basement, garage stall etc. are developed using the depreciated cost method. Marginal cost is extracted from unbiased, third-party cost data. Contributory value differs from cost due to depreciation. The contributory value percentage is developed from Effective Age and Economic Life. See Depreciated Cost Analysis Calculations page attached." Use a screen capture tool to save the Sidekick calculations as a page in your report or in your workfile. Sidekick also provides the option of a pdf report.

 $^{^{\}rm 10}$ The Appraisal of Real Estate $\rm 15^{\rm th}$ Edition p561

Solomon Adjustment

Solomon Adjustment calculates depreciated cost adjustments from the appraiser's estimate of remaining economic life.

1. Enter 'base' if you do not want to use the published zip code multiplier. Otherwise, enter subject zip code.

2. Select subject quality rating. Q1 is highest and Q6 is lowest as in the UAD system. See page 27 for more on quality rating assumptions.

3. Click the box for a quality rating between two ratings. If you select Q3 and check the box, the calculator uses cost between Q3 and Q4.

4. Enter remaining economic life estimate. If you are doing a desktop on a 20-year-old Q4 that is rated average by the inspector, a remaining economic life of 40 is inferred by the scope of work and cost data. The cost data is built on the assumption of 60-year economic life for a Q4.

5. Enter a factor if you want to fine-tune cost per guidance from the cost data publisher. See page 5.

6. Click calculate, and values are shown at right. (7.)

8. Click Print Report to generate a dated report than can be printed or saved as a pdf.

Explaining your adjustments:

Edit as necessary: "Building categories such as GLA, bath, basement, garage stall etc. are developed using the depreciated cost method. Marginal cost is extracted from unbiased, third-party cost data. Contributory value differs from cost due to depreciation. The contributory value percentage is developed from Remaining Economic Life. See Depreciated Cost Analysis Calculations page attached." Use a screen capture tool to save the Solomon Adjustment calculations as a page in your report or in your workfile. Solomon Adjustment also provides the option of a pdf report.

× Solomon Adjustment

	<u>Criteria</u>		Market Based /	Adjustm <u>ents</u> 7
Zip Code	base	1	GLA	85
Quality Level	01		Basement Size	17
Quality 2010	02		Basement Finish	30
	○ 3○ 4	2	Full Bath	8542
	0 5	-	Half Bath	4149
	06		Fireplace	2566
			First Garage Stall	14138
Quality Level H	alf Step		Additional Garage Stall	8780
Remaining Eco	nomic Life	45	First Carport Stall	3426
Factor (see use	r manual)	4	Additional Carport Stall	2284
Calculate	6		8	Print Report

Remaining Economic Life is the method used to measure market reaction to the Subject Property. It is an essential factor in this process of determining market based adjustments.

Remaining Economic Life is commonly estimated by appraisers. We recommend that it be calculated in the Cost Approach using Economic Life figures as follows: Q1-Q3 = 70 Years, Q4-Q5 = 60 Years and Q6 = 55 Years. The Cost Approach can be used to calculate Depreciation by starting with an assumed market value.

Solomon Cost

1. Enter an estimate of market value. You are likely to change this number later in the process. Think of this as a hypothesis to be tested in the sales grid. If you are better able to estimate Effective Age, use Sidekick. If you are better able to estimate Remaining Economic Life, use Solomon Adjustment.

2. Enter your opinion of Site Value. One way to estimate site value is to extract it from the market using Solomon Site.

3. Enter "As-is" Value of Site Improvements. Refer to Survey Results for guidance.

4. Enter Zip Code. The cost data publisher lists local cost multipliers for most zip codes. The multiplier includes local labor, material and climate conditions that impact cost. The zip code multiplier can be bypassed by entering base for base cost.

5. Select quality rating. The licensed data includes 11 ratings which we include as 1, 1.5, 2, 2.5, 3 etc. One is highest and 6 is lowest.

6. Enter GLA square feet.

7. Select Yes or No for central air. If No is selected, complete fields 8 and 9 to indicate the square footage of heated space and cooled space.

10. Enter basement square feet.

11. Enter basement finish square feet.

12. Enter basement full bath count. GLA cost data includes bathrooms. Basement finish does not, so it is added separately.

× Solomon Cost

Market Value (est.)	1	360,000
Site Value (est.)	2	80,000
Site Improvement (est.)	3	20,000
Zip Code	4	55123
Quality Rating	5 .	4
GLA sf	6	1,400
Does GLA sf = Heated sf and Cooling sf?	7	● Yes ○ No
Heated sf	8	1,400
Central Air sf	9	1,400
Basement sf	10	1,400
Basement Finish sf	11	1,000
Basement Full Bath Count	12	1
Basement Half Bath Count	13	
Fireplace Count	14	1
Deck sf	15	144
Covered Porch sf	16	
Screen Porch sf	17	
Enclosed Porch sf	18	
Garage sf	19	440
Carport sf	20	
Factor (see user manual)	21	-9
Additonal Features Description	С	ost (\$)
Sauna 2	2	8,000
Use ClickForms	data	

	<u>C</u>	ontributo	ry Value Calculator	-	
Opinion of Site Value	25	80,000			
Dwelling	26	225,123	Dwelling sf	160.80 <mark>40</mark>	
Basement	27	82,144	Basement sf	58.67 <mark>41</mark>	
Additional Features	28	16,432	Garage/Carport sf	60.00 <mark>42</mark>	
Garage/Carport	29	26,400			
otal Estmate of Cost New	30	350,098			
Depreciation	31	90,098		• D	epreciatio
Depreciated Cost - Improveme	ents	260,000	32		ontributory
As Is Value - Site Improvemen	its	20,000	33 100,00	90,098	te + Site
larket Value Estimate		360,000	34	Im	iprovem
conomic Life		60	35		
conomic (Effective) Age		15	36		
Remaining Economic Life		45	37	260,000	
Pepreciation Percentage		25	38		
% Contributory Value		75	39		
				48	
24	Ca	lculate			

		<u>Adjust</u>					
	Default Adjustment % of Econ Life Calibrated Adjustme					ustmei	nt
GLA sf	43	84	44	63	5´ <mark>4</mark>	6	
Basement sf		17		100	17		
Basement Finish sf		29		50	14		
Full Bath		8,377		50	4,188		
Half Bath		4,069		50	2,034		
Fireplace		2,517		50	1,258		
Deck sf		26		33	8		
Covered Porch sf		42		50	21		
Screen Porch sf		56		67	37		
Enclosed Porch sf		63		75	47		
First Garage Stall		13,865		100	13,865	45	Calibrate Adjustments
Additional Garage Sta		8,611		100	8,611		
First Carport Stall		3,360		100	3,360		
Additional Carport Sta		2,240		100	2,240	47	Print Report
Additional Feature 1		5,941		þ			
Additional Feature 2				100			

Moving Data Between ClickForms & Solomon

Export Cost Approach Data

× Solomon Cost

B	ui	ld	in	g	С	ha	ra	C	ter	ris	ti	iC	S
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Market Value (est.)	1	360,000
Site Value (est.)	2	80,000
Site Improvement (est.)	3	20,000
Zip Code	4	55123
Quality Rating	5 🗸	4
GLA sf	6	1,400
Does GLA sf = Heated sf and Cooling sf?	d 7	● Yes○ No
Heated sf	8	1,400
Central Air sf	9	1,400
Basement sf	10	1,400
Basement Finish sf	11	1,000
Basement Full Bath Count	12	1
Basement Half Bath Count	13	
Fireplace Count	14	1
Deck sf	15	144
Covered Porch sf	16	
Screen Porch sf	17	
Enclosed Porch sf	18	
Garage sf	19	440
Carport sf	20	
Factor (see user manual)	21	-9
Additonal Features		
Description	Co	ost (\$)
Sauna	22	8,000
Use ClickForm	s data	
23		
Clickforms Integration with So	lomon (Cost Manual
Concerconno integration with OU		oostimanual
Moving Data Between Click	Forms	& Solomon
Export Cost Appro	ach Da	ita

		Contrib	outo	ory Value C	alculator		
Opinion of Site Value	2	5 80,	000				
Dwelling	2	6 225,	123	Dwelling st		160.80 <mark>40</mark>	
Basement	2	7 82,	144	Basement	sf	58.67 41	
Additional Features	2	<mark>8</mark> 16,	432	Garage/Ca	rport sf	60.00 42	
Garage/Carport	2	9 26,	400				
Total Estmate of Cost Nev	v 3	0 350,	098				
Depreciation	3	1 90,	098				Depreciation
Depreciated Cost - Improv	vements	260,	000	32			 Contributory Value
As Is Value - Site Improve	ments	20,	000	33	100,00	90,098	 Site + Site
Market Value Estimate		360,	000	34			Improvem
Economic Life			60	35			
Economic (Effective) Age			15	36			
Remaining Economic Life			45	37		260,000	
Depreciation Percentage			25	38			
% Contributory Value			75	39			
					4	48	
24	4	Calculate					
		<u>Adjust</u>	me	nt Calcula	<u>tions</u>		
	Default	Adjustment	%	of Econ Life	Calibrated	Adjustment	
GLA sf	43	84	44	4 63		^{5′} 46	
Basement sf		17		100		17	
Basement Finish sf		29		50		14	
Full Bath		8,377		50	4,1	88	
Half Bath		4,069		50	2,0	34	

50

33

50

67

75

100

100

100

100

100

q

1.258

8

21

37

47

13,865

8,611

3,360

2.240

47

45 Calibrate Adjustme

2,517

26

42

56

63

13,865

8.611

3,360

2.240

5,941

13. Enter basement half bath count. GLA cost data includes bathrooms. Basement finish does not, so it is added separately.

Fireplace

Deck sf

Covered Porch sf

Screen Porch sf

Enclosed Porch sf

First Garage Stall

First Carport Stall

Additional Garage Stall

Additional Carport Stall

Additional Feature 1

Additional Feature 2

14. Enter fireplace count including all fireplaces, above and below grade.

15. Enter total square footage of all decks. Decks are assumed to be a framed structure on a post foundation.

16. Enter total square footage of all covered porches. Covered porches have roof systems similar to the house.

17. Enter total square footage of all screen porches. Screen porches have roof systems similar to the house and are enclosed with screen.

18. Enter total square footage of all enclosed porches. Enclosed porches have roof systems similar to the house and are enclosed with windows.

19. Enter total square footage of garage, regardless of how many garage doors. Do not include accessory buildings such as a pole barn. A garage is oriented toward residential car storage. A pole barn with garage doors is an accessory building and classified as a site improvement.

20. Enter total square footage of all carports.

21. The Factor field is used to account for cost difference beyond the zip code multiplier.

Quoting from our licensed source of cost data, "National Building Cost":

"Note: Tract work and highly repetitive jobs may reduce the cost 8 to 12%. Add 4% to the square foot cost of floors above the second-floor level. Work outside metropolitan areas may cost 2 to 6% less. When the exterior walls are masonry, add 9 to 10% for class 2 and 1 structures and 5 to 8% for class 3, 4, 5 and 6 structures."

Solomon interpretation follows:

Quality Rating	1	2	3	4	5	6
Multiple Builds	-12	-11	-10	-9	-8	-8
Masonry Construction	10	9	8	7	6	5

In this case, -9 is used to account for 9% lower cost for repetitive builds in a subdivision.

22. Add a description for an additional feature together with its cost. Use this for items the owner has added such as an elevator, second kitchen, wet bar, sauna etc. These are features inside the house. Exterior features are considered site improvements.

- 23. Click the links for details on integration of Solomon and ClickFORMS.
- 24. Click Calculate and the Cost Approach appears top right.
- 25. Site value transfers from appraiser's input in 2.
- 26. Dwelling is calculated from appraiser's input for Zip Code 4, Quality 5, GLA 6 and Factor 21.
- 27. Basement total cost is calculated from 10-13.
- 28. Additional features are calculated as a total of 14 through 18.

× Solomon Cost

Export Cost Approach Data



- 29. Garage/Carport total cost is calculated from 19-20.
- 30. Total Estimate of Cost New is the sum of 26 through 29.
- 31. Depreciation is the difference between Total Estimate of Cost New 30 and Depreciated cost 32.
- 32. Depreciated Cost is Market Value 1 less Site Value 2 less Site Improvements 3.
- 33. As is Value Site Improvements transfers from appraiser's input in 3.
- 34. Market Value Estimate transfers from appraiser's estimate of Market Value 1.
- 35. Economic Life corresponds to Quality rating in National Building Cost.
- 36. Effective Age is (Depreciation 31 /Total estimate of Cost New 30) x Economic Life. (90,098/350,098) x 60 = 15
- 37. Remaining Economic Life is Economic Life 35 less Effective Age 36. 60 15 = 45
- 38 Depreciation Percentage is Effective Age 36 divided by Economic Life 35. 15/60 = 25%
- 39. Percent Contributory Value is Remaining Economic Life 37 divided by Economic Life 35. 45/60 = 75%
- 40. Dwelling sf is Dwelling 26 / GLA sf 6. 225,123 / 1,400 = \$160.80
- 41. Basement sf is Basement 27 divided by Basement sf 10. 82,144 / 1,400 = 58.67
- 42. Garage Carport sf is Garage/Carport 29 divided by Garage/Carport sf 19. 26,400 / 440 = 60.00

43. Default adjustments assume that all components of the house depreciate at the same rate. In this case, the contributory value is 75% of cost 39. Depreciated cost is 75% of Cost New. Remaining Economic Life is 75% of Economic Life.

× Solomon Cost

				<u>(</u>	ontribu	utory Value C	alculator		
Building Chara	cteristics		Opinion of Site Value	25	25 80,000				
<u></u>			Dwelling	26	225,1	23 Dwelling st		160.8	80 <mark>40</mark>
			Basement	27	82,1	44 Basement	sf	58.6	67 <mark>41</mark>
Market Value (est.)	1	360,000	Additional Features	28	16,4	32 Garage/Ca	rport sf	60.0	00 <mark>42</mark>
Site Value (est.)	2	80,000	Garage/Carport	29	26,4	00			
Site Improvement (est.)	3	20,000	Total Estmate of Cost New	v 30	350,0	98			
Zip Code	4	55123	Depreciation	31	90,0	98			Depreciation
Quality Rating	5 .	4	Depreciated Cost - Improv	vements	260,0	00 <mark>32</mark>			Contributory
GLA sf	6	1,400	As Is Value - Site Improve	ements	20,0	00 33	100,000	90,09	98 Site + Site
Does GLA sf = Heated sf and	7	Yes	Market Value Estimate		360,0	₀₀ 34			Improvem
Cooling sf?	1	⊖ No	Economic Life			₆₀ 35			
leated sf	8	1,400	Economic (Effective) Age			15 <mark>36</mark>			
Central Air sf	9	1,400	Remaining Economic Life			45 37	260	,000	
Basement sf	10	1,400	Depreciation Percentage			25 <mark>38</mark>			
Basement Finish sf	11	1,000	% Contributory Value			75 <mark>39</mark>			
Basement Full Bath Count	12	1	v contributory value						
asement Half Bath Count	13		24		laulato				
ireplace Count	14	1	24	+	aculate				
)eck sf	15	144							
Covered Porch sf	16				Adiustr	nent Calcula	tions		
Screen Porch sf	17								
Enclosed Porch sf	18			Default Adj	ustment	% of Econ Life	Calibrated Ad	justme	ent
Garage sf	19	440	GLA sf	43	84	44 63	5′4	6	
Carport sf	20		Basement sf		17	100	17		
			Basement Finish sf		29	50	14		
actor (see user manual)	21	-9	Full Bath		8,377	50	4,188		
actor (see user manual)	_		Half Bath		4,069	50	2,034		
			Fireplace		2,517	50	1,258		
dditonal Features			Deck sf		26	33	8		
escription	C	ost (\$)	Covered Porch sf		42	50	21		
Sauna 2	2	8,000	Screen Porch sf		56	67	37		
			Enclosed Porch sf		63	75	47		
			First Garage Stall		13,865	100	13,865	45	Calibrate Adjustmer
			Additional Garage Stall		8,611	100	8,611		
Use ClickForms	data		First Carport Stall		3,360	100	3,360		
23			Additional Carport Stall		2,240	100	2,240	47	Print Report
ickforms Integration with Sole	omon	Cost Manual	Additional Feature 1		5,941	þ			
			Additional Feature 2			100			
Moving Data Between Click	orms	& Solomon							
Export Cost Approx	ach Dr	ata							

× Solomon Cost

				Contrib	utory Value C	alculator		
Building Chara	ctoristics	Opinion of Site Value	2	5 80,0	000			
Building Chara	cteristics	Dwelling	26	225,	123 Dwelling st		160.8	0 <mark>40</mark>
		Basement	2	82,	144 Basement	sf	58.6	7 41
Market Value (est.)	1 360,000	Additional Features	2	3 16,4	432 Garage/Ca	rport sf	60.00	0 42
Site Value (est.)	2 80,000	Garage/Carport	2	9 26,4	400			
Site Improvement (est.)	3 20,000	Total Estmate of Cost New	, 3	350,0	098			
Zip Code	4 55123	Depreciation	3	1 90,0	098			Depreciation
Quality Rating	5 🗸 4	Depreciated Cost - Improv	rements	260,	000 <mark>32</mark>			 Contributory
GLA sf	6 1,400	As Is Value - Site Improver	ments	20,	000 <mark>33</mark>	100,000	90,098	Site + Site
Does GLA sf = Heated sf and Cooling sf?	7 O Yes	Market Value Estimate		360,	000 <mark>34</mark>		_	Improvem
	8 1 400	Economic Life			45 36			
Heated st	9 1 400	Economic (Effective) Age			45 37	260	000	
Central Air st	10 1 400	Remaining Economic Life			25.38			
Basement St	11 1.000	Depreciation Percentage			75 39			
Basement Finish St	12 1	% Contributory Value			15 55			
Basement Half Bath Count	13		_		_			
Eireplace Count	14 1	24		Calculate				
Deck sf	15 144							
Covered Porch sf	16			Adjust	mont Calcula	tions		
Screen Porch sf	17			Aujusi				
Enclosed Porch sf	18		Default A	djustment	% of Econ Life	Calibrated Adj	ustmer	nt
Garage sf	19 440	GLA sf	43	84	44 63	5´ <mark>4</mark>	6	
Carport sf	20	Basement sf		17	100	17		
		Basement Finish sf		29	50	14		
	21 -9	Full Bath		8,377	50	4,188		
Factor (see user manual)		Half Bath		4,069	50	2,034		
		Fireplace		2,517	50	1,258		
Additonal Features		Deck sf		26	33	8		
Description	Cost (\$)	Covered Porch sf		42	50	21		
Sauna 2	2 8,000	Screen Porch sf		56	67	37		
		Enclosed Porch sf		63	75	47		
		First Garage Stall		13,865	100	13,865	45	Calibrate Adjustments
	data	Additional Garage Stall		8,611	100	8,611		
Use UlickForms	data	First Carport Stall		3,360	100	3,360		Drint Depart
23		Additional Carport Stall		2,240	100	2,240	47	Print Report
Clickforms Integration with Sol	omon Cost Manual	Additional Feature 1		5,941	þ			
		Additional Feature 2			100			
Moving Data Between Click	Forms & Solomon							

44. The % of Econ Life column gives the appraiser the flexibility to account for components with lower economic life. If you agree with NAHB that a deck has a 20-year lifespan, use 33 (20 years is 33% of 60 years) to account for faster depreciation due to exposure to the elements (physical).

Remember that all forms of depreciation are included in the effective age of the house. If you believe that a basement bath has functional depreciation making it worth 50% of a GLA bath, enter 50.

The % of Econ Life fields are set according to my estimates in the Minneapolis / St Paul market. Change these percentages to fit your market.

The GLA percentage of 63 is based on a survey result of appraisers who use Solomon. GLA includes 20-year roof, 10 year paint, 10 year carpet, 25 year HVAC etc. so it makes sense that GLA depreciates faster than the structure as a whole.

45. Calibrated Adjustment is Default adjustment 43 x % Econ Life 44.

46. Click Print Report for a hard copy or pdf of the calculator results.

Explaining You Adjustments

"Adjustments for building characteristics are developed with the depreciated cost method. See page three Adjustment Calculations and the Depreciated Cost Adjustments summary attached."

Page 3 Additional Comments.

Adjustment Calculations: Adjustments for building cost categories such as GLA, bath count, basement size, basement finish sf, garage count and fireplace count are based on the amount they contribute to value.

Depreciated replacement cost is the amount that the building contributes to site value. Depreciation is x%, so the market is paying y% of replacement cost for the buildings. See Depreciation Calculation attached which includes the y% factor applied to relevant cost categories.

I include a screenshot of Solomon Cost calculations by inserting a page titled "Depreciated Replacement Cost Adjustment Calculations".

People have asked how depreciated cost adjustments show market reaction. When depreciation is extracted from the market, depreciated cost adjustments are market based.

Solomon Cost New

Solomon Cost New is designed for new construction assignments where there is no depreciation.

1. Enter site value, site improvements and building characteristics.

- 2. Enter Builder Sale Price.
- 3. Click Calculate to get results.

4. In this case, the Builder Sale Price is 105% of published cost data. We license cost data from National Building Cost. Following are their comments about the accuracy and intended use of the data: "Costs in the tables include all construction costs: labor, material, equipment, plans, building permit, supervision, overhead and profit." "This manual will be a useful reference for anyone who must develop budget estimates or replacement costs for buildings. Anyone familiar with construction estimating understands that even very competent estimators with complete working drawings, full specifications and precise labor and material costs can disagree on the cost of a building. Frequently exhaustive estimates for even relatively simple structures can vary 10% or more. The range of competitive bids on some building projects is as much as 20%. Estimating costs is not an exact science and there's room for legitimate disagreement on what the "right" cost is. This manual cannot help you do in a few minutes what skilled estimators may not be able to do in many hours. This manual will help you determine a reasonable replacement or construction cost for most buildings. It is not intended as a substitute for judgment or as a replacement for sound professional practice but should prove a valuable aid to developing an informed opinion of value." Builders do not use cost data to establish selling prices. The market sets the selling price.

5. Difference in replacement cost (no site or site improvements).

6. Click to print a pdf file you can save in your workfile on paper or digitally.

7. Solomon Cost New integrates with ClickFORMS by pulling building characteristics into Solomon Cost New.

× Solomon Cost - New Construction

Subject Characteristics

Site Value 1	80,000
Site Improvements	20,000
Zip Code	55123
Quality Level	 ✓ 4
GLA sf	2400
Does GLA sf = Heated sf and Cooling sf	● Yes ○ No
Heated sf	2400
Central Air sf	2400
Basement sf	1200
Basement Finish sf	1000
Basement Full Bath Count	1
Basement Half Bath Count	
Fireplace Count	1
Deck sf	240
Covered Porch sf	100
Screen Porch sf	
Enclosed Porch sf	
Garage sf	600
Carport sf	
Builder Sale Price 2	625,000
Builder vs Cost Data	1.05
Replacement Cost Factor	.06

4 5

Clickforms Integration with Solomon Cost New Manual

Subject Character	eristics		National Building C	ost		Local Builder Co	ost
110	80,000		Opinion of Site Value	80,000	1	Oninion of Site Value	80,000
	20,000		Dwelling	357,032		Dwelling	387,090
de	55123		Dwelling sf	149		Dwelling sf	161
l evel	4		Basement	84,393		Basement	84,393
	2400		Basement sf	70		Basement sf	70
LA sf = Heated sf	Yes		Fireplace Deck Porch	18,986		Fireplace Deck Porch	18,986
oling sf	⊖ No		Garage/Carport	34,531		Carport/Garage	34,531
of	2400		Garage/Carport/ sf	58		Garage/Carport sf	58
Air of	2400		Total Estmate of Cost New	494,943	6	Total Estimate of Cost New	525,000
ent sf	1200		Zero Depreciation			Zero Depreciation	
ont Einich of	1000		Replacement Cost of Improvements	494,943		Replacement Cost of Improvements	525,000
ent Full Bath Count	1		As Is Value of Site Improvements	20,000		As Is Value of Site Improvements	20,000
ent Half Bath Count			Indicated Value by Cost Approach	594,943		Indicated Value by Cost Approach	625,000
ce Count	1						
f	240		Deplessment Cost Ad				
ed Porch sf	100		Replacement Cost Au	ustments			
Porch sf				Adjustment	3		
ed Porch sf			GLA sf	123			
e sf	600		Basement sf	25			
t sf			Basement Finish sf	43			
Sale Price	625,000		Full Bath	12,265			
vs Cost Data 🛛 4	1.05	5	Half Bath	5,957			
ement Cost Factor	.06	9	Fireplace	4,021			
			Deck sf	38			
			Covered Porch sf	58			
Calculate			Screen Porch sf	78			
			Enclosed Porch sf	87			
Print Report			First Garage Stall	19,286			
port			Additional Garage Stall	11,978			
			First Carport Stall	4,919			
Lise ClickForms D	ata		Additional Carport Stall	3,279			

Neither the Builder nor the market use published cost data. Rather, cost data is compiled from builder survey data, permit data of completed projects and other sources. The calculator will show 1004 Cost Approach data two ways. Top center 1 you will see cost approach data straight from the National Building Cost Manual. On the right, 2 you will see the National Building Cost Manual Data reconciled to the local builder cost. The Local Builder Cost data is used to calculate replacement cost adjustments bottom center 3.

Builder vs Cost Data 4 is the percentage of published cost plus site and site improvements at which the builder is performing.

Replacement Cost Factor 5 is the percentage difference between replacement cost from National Building Cost 6 and Local Builder Cost 7.

The Replacement Cost Factor 5 can be used as a cost multiplier from your market, keeping your cost calculations up to date and local.

Explaining Your Adjustments

Adjustments for building categories are developed by extracting marginal cost from published average cost data. Marginal cost is the cost of one more unit of production such as one more square foot, one more bath, one more garage stall etc.

Solomon Site

Solomon Site is a market extraction tool. The idea is to choose a comparable sale with similar site characteristics and subtract the depreciated cost of the improvements. You will be left with the total of Site Value and "As-is" Value of Site Improvements. Subtract site improvements and you have site value. Depreciated cost of the improvements is replacement cost after depreciation has been deducted. Depreciation is calculated from the appraiser's estimate of effective age.

Solomon Site

Comparable Property Characteristics 350,000 Sale Price after Concessions 55123 Zip Code 4 Quality Level \sim 1200 GLA sf Yes Does GLA sf = Heated sf and ⊖ No Cooling sf 1200 Heated sf 1200 Central Air sf 1000 Basement sf 800 Basement Finish sf 1 Basement Full Bath Count Basement Half Bath Count 1 Fireplace Count 200 Deck sf Covered Porch sf Screen Porch sf Enclosed Porch sf 500 Garage sf Carport sf Factor (see user manual)



1. Enter the property characteristics of the comparable sale on the left.

- 2. Enter your estimate of effective age.
- 3. Enter your estimate of the "As-is" Value of Site Improvements.
- 4. Click Calculate
- 5. The assumptions will resolve to the site value.
- 6. Click Print Report for a hard copy or pdf.

The Opinion of Site Value is very sensitive to your Estimate of Effective Age.

Notice how a change from 15 to 20 years effective age 1 results in a change of nearly \$27,717 in site value.

Explain your opinion of Site Value

The opinion of site value is developed by subtracting estimated depreciated cost and "As-is" Value of Site Improvements from (comps address), which is judged to have similar site value.

	Site Value Extraction
	One value Extraction
	Effective Age Estimate 20 1
Site va cost of from th from th the "As amoun drivew	lue extraction begins by subtracting the depreciated the building(s) from the sale price. Cost is calculated e data entered to the left. Depreciation is calculated e Effective Age estimate. The next step is to deduct i-is" Value of Site Improvements. Enter the total t contributed by site improvements, such as
	ay, walks, patio, pool, well, septic, landscaping, etc.
	ay, walks, patio, pool, well, septic, landscaping, etc. "As-is" Value of Site Improvements
	ay, walks, patio, pool, well, septic, landscaping, etc. "As-is" Value of Site Improvements 10,000
Given "As-is calcula	ay, walks, patio, pool, well, septic, landscaping, etc. "As-is" Value of Site Improvements 10,000 the sale price, replacement cost, Effective Age, and 'Value of Site improvements, the site value ates as:
Given "As-is calcula	"As-is" Value of Site Improvements "As-is" Value of Site Improvements 10,000 the sale price, replacement cost, Effective Age, and 'Value of Site improvements, the site value ates as: Opinion of Site Value

Solomon Manufactured

Solomon Manufactured uses the appraiser's estimate of remaining economic life to calculate seven adjustments.

- 1. Enter subject zip code.
- 2. Select Quality rating. See Appendix C on page 26 for illustrations of five quality categories.
- 3. Select Quality Rating Half Step if the property is low in the quality range.
- 4. Enter remaining economic life. Note that economic life values are lower than traditional construction.
- 5. Enter deck size.
- 6. Enter Porch size.
- 7. Enter Carport size.
- 8. Enter garage size in square feet, not the number of car stalls.
- 9. Click Calculate.

10. The GLA adjustment is a square foot adjustment. All other adjustments are unit adjustments. A 160sf deck is \$2000. A 240sf garage is \$7200 etc.

🔀 Solomon M	anufactured			
Cr	<u>iteria</u>		Depreciated	<u>Cost Adjustments</u>
Zip Code	55123 1		GLA	47
Quality Level	01		Shower Bath	1388
	○ 2○ 3	2	Half Bath	894
	O 4 O 5		Deck	1843
			Porch	2509
Quality Level Half Step	3		Carport	1181
Remaining Economic Life	20	4	Garage	8978
Deck sf	160	5	Adjustments for Deck,	Calculate
Porch sf	144	6	Garage are based on the	
Carport sf	200	7	If you need a one stall adjustment, enter the	Print Report
Garage sf	240	8	typical size for one stall in your market.	
Percentage of Cost Paid assumptions are specifi	d by Market is Ren ed in the cost data	nainir i as:.	ng Economic Life / Economic L	ife. Economic Life
Q1 = 45	yrs Q2 - Q3 =	40 yr	s Q4 - 5 = 30 yrs	
Depreciated cost adjust	ments are market	base	d when depreciation is extracte	ed from the market.
Depreciation can be ext estimate until indicated	tracted from the ma Value by Cost App	arket roact	in the Cost Approach by revisin a aligns with an assumed mark	ng the Effective Age

Explaining Your Adjustments

Adjustments for building characteristics are developed with the depreciated cost method.

Solomon Market Time

Solomon Market Time quickly applies an annual rate of change and/or \$ per day rate of change to the interval in days between the contract date (or closed sale date) of the comparable and the effective date of the report. Up to six comparables can be calculated on the same page.

1. Enter the street address of the comparable properties for which you will calculate a market time adjustment. This is an optional field to enhance your reporting.

2. Enter the sale price of the comparable properties for which you need a market time adjustment.

3. Enter the amount of seller concessions if the concessions result in a sale price that is higher than market value.

Repeat for up to six properties.

4. Click on the calendar icon and select contract date for each comparable. In this case,December 7, 2023. This date will transfer to all properties in the calculator.

5. Click on the calendar icon and select the effective date of the report for each property.

6. Enter the annual percentage of change in the market. If the market is up 2.9%, enter 2.9. Use negative number for a decline. When using grouped data for a market time adjustment, a minimum of 30 observations are required for both time periods. The effective date transfers to all properties in the calculator.

7. If you know how to extract a \$ Per Day rate of change in the market, enter that amount and it will transfer to all properties in the grid. The

dollar per day method may be more accurate if the market has fluctuated during the year. In this example, 30 is used.

8. Click Calculate. Calculations are made that result in a market supported time adjustment.

Concessions are subtracted from Sale Price to show Comparable Market Value.

Comparable Contract date is subtracted from Appraisal Effective Date to show the Interval in Days between the two dates.

Market Time Adjustment is calculated by applying the annual rate of change to the interval in days.

If the annual rate is 2.9%, and the interval is 73 days, the result is \$2314.

\$ per day adjustments are made by multiplying the interval in days by the \$ per day rate.

Explaining Your Adjustments

The market time adjustments are developed by applying the x % annual rate of change to the interval between comp contract date and report effective date. Edit as necessary.

The market time adjustments are developed by applying a rate of \$x per day to the interval in days between comp contract date and report effective date. Edit as necessary.

Market Time - Property	1	^	Market Time - Property	2
street Address 1	123 Maple	St	reet Address	234 Oak
Comparable Sale Price 2	400,000	Co	omparable Sale Price	425,000
Concessions 3	5,000	Co	oncessions	
Comparable Market Value	395,000	Co	omparable Market Value	425,000
Comparable Contract Date	12/07/2023 🔤 4	4 co	omparable Contract Date	12/22/2023
Effective Date	03/16/2024	5 Ef	fective Date	03/16/2024
nterval (in days)	100	Int	terval (in days)	85
Annual Rate of Appreciation	2.9	6 Ar	nnual Rate of Appreciation	2.9
Market Time Adjustment	3138	M	arket Time Adjustment	2870
S Per Day	30	7 si	Per Day	30
Market Time Adjust (\$ Day)	3000	M	arket Time Adjust (\$ Day)	2550
Calculate 8 Clear Values 9	Print Report 1	10		
Market Time - Property	3	^	Market Time - Property	/ 4
treet Address	345 Elm	St	reet Address	456 Ash
omparable Sale Price	399,000	Co	omparable Sale Price	410,000
oncessions		Co	oncessions	
omparable Market Value	399,000	Co	omparable Market Value	410,000
omparable Contract Date	01/03/2024	Co	omparable Contract Date	01/24/2024
ffective Date	03/16/2024	Ef	fective Date	03/16/2024
	72		terval (in days)	52
terval (in days)	13	Int		
nterval (in days) nnual Rate of Appreciation	2.9	Ar	nnual Rate of Appreciation	2.9
nterval (in days) unnual Rate of Appreciation flarket Time Adjustment	2.9	Ar Ma	nnual Rate of Appreciation arket Time Adjustment	2.9 1693
nterval (in days) nnual Rate of Appreciation larket Time Adjustment Per Day	2.9 2314 30	Int Ar M: S I	nnual Rate of Appreciation arket Time Adjustment Per Day	2.9 1693 30
terval (in days) nnual Rate of Appreciation larket Time Adjustment Per Day arket Time Adjust (\$ Day)	2.9 2314 30 2190	Int Ar Ma S I Ma	nnual Rate of Appreciation arket Time Adjustment Per Day arket Time Adjust (S Day)	2.9 1693 30 1560
nterval (in days) Annual Rate of Appreciation Market Time Adjustment S Per Day Market Time Adjust (S Day) Market Time - Property	2.9 2314 30 2190	Int Ar Mi S I Mi	nnual Rate of Appreciation arket Time Adjustment Per Day arket Time Adjust (\$ Day) Market Time - Property	2.9 1693 30 1560
Interval (in days) Annual Rate of Appreciation Market Time Adjustment S Per Day Market Time Adjust (S Day) Market Time - Property Street Address	2.9 2314 30 2190 5 465 Elm	Int Ar M: S I M: S	nnual Rate of Appreciation arket Time Adjustment Per Day arket Time Adjust (\$ Day) Market Time - Property Street Address	2.9 1693 30 1560 76 321 Maple
nterval (in days) Annual Rate of Appreciation Market Time Adjustment S Per Day Market Time Adjust (S Day) Market Time - Property Street Address Comparable Sale Price	2.9 2.314 30 2190 5 465 Elm 409,000	Int Ar Mi S I Mi	nnual Rate of Appreciation arket Time Adjustment Per Day arket Time Adjust (S Day) Market Time - Property Street Address Comparable Sale Price	2.9 1693 30 1560 6 321 Maple 430,000
nterval (in days) nnual Rate of Appreciation Market Time Adjustment Per Day Market Time Adjust (S Day) Market Time - Property Street Address Comparable Sale Price Concessions	2.9 2.314 30 2190 5 465 Elm 409,000	Inti Ar S I Mi S S S C C C C	nnual Rate of Appreciation arket Time Adjustment Per Day arket Time Adjust (S Day) Market Time - Property Street Address Comparable Sale Price Concessions	2.9 1693 30 1560 6 321 Maple 430,000
terval (in days) nnual Rate of Appreciation larket Time Adjustment Per Day larket Time Adjust (S Day) Market Time - Property treet Address omparable Sale Price oncessions omparable Market Value	2.9 2.314 30 2190 5 465 Elm 409,000	Infi Ar S I Mi S S C C C C C C C C C C C C C	nnual Rate of Appreciation arket Time Adjustment Per Day arket Time Adjust (S Day) Market Time - Property Street Address Comparable Sale Price Concessions Comparable Market Value	2.9 1693 30 1560 (6 321 Maple 430,000 430,000
terval (in days) nnual Rate of Appreciation arket Time Adjustment Per Day arket Time Adjust (S Day) Market Time - Property treet Address omparable Sale Price oncessions omparable Market Value omparable Contract Date	2.9 2.314 30 2190 5 465 Elm 409,000 409,000 01/23/2024	Infi Ar S I Mi S S C C C C C C C C C C C C C C C C C	nnual Rate of Appreciation arket Time Adjustment Per Day arket Time Adjust (S Day) Market Time - Property Street Address Comparable Sale Price Concessions Comparable Market Value Comparable Contract Date	2.9 1693 30 1560 (6 321 Maple 430,000 430,000 01/30/2024
Iterval (in days) Innual Rate of Appreciation larket Time Adjustment Per Day larket Time Adjust (S Day) Market Time - Property treet Address comparable Sale Price concessions comparable Market Value comparable Contract Date ffective Date	73 2.9 2314 30 2190 5 465 Elm 409,000 409,000 01/23/2024 10	Inti Ar SI Mi S C C C C C C C C C C C C C C C C C C	nual Rate of Appreciation arket Time Adjustment Per Day arket Time Adjust (S Day) Market Time - Property Street Address Comparable Sale Price Concessions Comparable Market Value Comparable Contract Date Effective Date	2.9 1693 30 1560 76 321 Maple 430,000 01/30/2024 3/16/2024
nterval (in days) Annual Rate of Appreciation Market Time Adjustment S Per Day Market Time Adjust (S Day) Market Time - Property Street Address Comparable Sale Price Concessions Comparable Market Value Comparable Contract Date Effective Date nterval In Days	73 2.9 2314 30 2190 5 465 Elm 409,000 409,000 01/23/2024 103/16/2024 53	Inti Ar SI Mi S C C C C C C C C C C C C C C C C C C	nual Rate of Appreciation arket Time Adjustment Per Day arket Time Adjust (S Day) Market Time - Property Street Address Comparable Sale Price Concessions Comparable Market Value Comparable Contract Date Effective Date nterval In Days	2.9 1693 30 1560 6 321 Maple 430,000 01/30/2024 03/16/2024 46
nterval (in days) Annual Rate of Appreciation Market Time Adjustment 5 Per Day Market Time Adjust (S Day) Market Time - Property Street Address Comparable Sale Price Concessions Comparable Market Value Comparable Contract Date Effective Date nterval In Days Annual Rate Of Appreciation	2.9 2.314 30 2190 5 465 Elm 409,000 01/23/2024 03/16/2024 53 2.9	Inti Ar SI M: S S C C C C C C C C C C C C C C C C C	nnual Rate of Appreciation arket Time Adjustment Per Day arket Time Adjust (S Day) Market Time - Property Street Address Comparable Sale Price Concessions Comparable Market Value Comparable Contract Date Effective Date Interval In Days	2.9 1693 30 1560 6 321 Maple 430,000 01/30/2024 03/16/2024 46 2.9
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nterval (in days) Annual Rate of Appreciation Market Time Adjustment S Per Day Market Time Adjust (S Day) Market Time Adjust (S Day) Market Time - Property Street Address Comparable Sale Price Concessions Comparable Market Value Comparable Contract Date Effective Date Interval In Days Annual Rate Of Appreciation Market Time Adjustment S Per Day	2.9 2.314 30 2190 5 465 Elm 465 Elm 409,000 01/23/2024 03/16/2024 53 2.9 1722 30	Inti Ar S I M: S S C C C C C C C C C C C C C C C C C	nnual Rate of Appreciation arket Time Adjustment Per Day arket Time Adjust (S Day) Market Time - Property Street Address Comparable Sale Price Concessions Comparable Market Value Comparable Market Value Comparable Contract Date Effective Date Interval In Days Annual Rate Of Appreciation Market Time Adjustment S Per Day	2.9 1693 30 1560 6 321 Maple 430,000 01/30/2024 03/16/2024 46 2.9 1571 30

Solomon Grouped Data

- 1. Use an MLS search to find the mean value of a group properties similar to the subject.
- 2. Change one variable and enter the mean (average) value of the second group of properties.
- 3. Click Calculate
- 4. The bar chart is a data visualization of the difference that results from changing the variable under analysis.
- 5. Absolute difference between group one and group two.
- 6. Percentage change from group one to group two.
- 7. Percentage change from group two to group one.

8. Print a pdf of the calculation to document your adjustment calculation. You may also use a screen shot tool to add the calculation to a workfile document.

Grouped Data is included in Solomon Market Time because it is an accepted way to develop a market to market adjustment by comparing one time period to another to find the rate of change. "Grouped data analysis extends the logic of paired data analysis to larger datasets. In this technique, comparable sales are grouped by an independent variable such as date of sale and then the groups are studied as pairs." The Appraisal of Real Estate 15th Ed. P373



Secondary Data

- 1. Enter Comp Sale Price
- 2. Enter Concessions
- 3. Click to see results
- 4. Click to view complete information about the nature of secondary data, methodology, and survey data.

Secondar	y Data	Calculator					
Sale Price Concessions Market Value	1 2	325,000 10,000 315,000	3	See Secondary Data Results	4 <u>Secondary Data Ma</u>	inual P	rint Report
3rd Bedroom 4th Bedroom 5th Bedroom Fronts Busy Road		8,899 3,815 1,323 14,446		Backs Freeway Backs Water Tower Backs Power Lines Backs Railroad Tracks	19,328 16,163 10,814 18,862		
Central Air	Q3 Q4 Q5	11,431 8,600 6,631		In Ground Pool Cold Mild Warm	Winter 8, Winter 13, Winter 18,	978 104 774	
Pole Building per 1,	,000 sq ft	5,489		Steel Building per 1,000 sq ft	17,499		
'As Is' Value of Site City Sewer (Improveme & Water	nts 12,427		Well & Septic 13,26	5		
Condition of Q4				C1 vs C2 C2 vs C3 C 26,564 26,643	C3 vs C4 C4 vs C 23,553 30	C5 C5 vs C6 0,870 46,935	
Condition of Q3				C1 vs C2 C2 vs C3 C 24,989 28,067	C3 vs C4 C4 vs C 24,759 31	C5 C5 vs C6	
Quality of C3				Q1 vs Q2 Q2 vs Q3 Q 44,415 32,130	03 vs Q4 Q4 vs Q 26,775 32	Q5 Q5 vs Q6 2,130 40,320	

Sensitivity Analysis

1. Enter an adjustment category. In this case, Age.

2. Enter the value of the category for Comps 1-3 etc., in this case years. Enter adjusted sale price for each Comp.

3. Click Analysis.

4. Scatter plot appears showing relationship between the independent variable and adjusted sale price.

5. The r^2 value shows the Coefficient of Determination. In this case, 96% of change in adjusted sale price is due to change in age.

6. The coefficient of x is the adjustment rate. In this case, each year of age reduces adjusted sale price \$300.

7. Click to see how Sensitivity Analysis can be used for subjective adjustments such as View.

× Sensitivity Analysis Independent Variable Dependent Variable 340,000 Scatterplot • Х Adjusted Sales \$ Age 1 y = -300 * 335,000 3 463E5 35 335.000 2 0 964 60 330.000 330,000 5 85 320,000 325 000 320,000 25 50 75 100 4 Analysis Graph & R2 factor The coefficient of x is the adjustment rate, in this case: \$ -300 6 "Paired data and grouped data analysis are variants of sensitivity analysis, which is a method used to isolate the effect of individual variables on value" The Appraisal of Real Estate 15th Edition p372 Note: Clicking on the three dots ' ... ' in any of the left Independent Variable columns also runs the analysis calculations. 3 7 Sensitivity Analysis Manual

To save your results for your workfile or as a page in your report, click the Print Report button

8. For a pool adjustment, use 1 as the independent variable for a house with no pool and 2 for a house with a pool.

The software cannot use 0 as an independent variable.

Forecast Analysis

1. Enter the unit of comparison. If the unit of comparison is subjective, use a ranking system such as 1 to 5 with 3 being average, 5 being highest and 1 being lowest.

- 2. Enter the adjusted sale price of the comparable.
- 3. Enter the unit of comparison of the subject.
- 4. Click Forecast Analysis.
- 5. Inferred value is calculated.

6. Scatter plot graph provides a visual representation of the strength of the correlation between unit of comparison and price.

7. The r^2 value shows the Coefficient of Determination. In this case, 80% of change in sale price is due to change in unit of comparison.



To save your results for your workfile or as a page in your report, click the Print Report button.

Reporting

Report the findings of the calculators on three pages of a 1004 report.

1. Insert a page in the report titled Depreciated Cost Adjustment Calculations with a screen capture of Solomon Cost.

Adjustment Calculations: Adjustments for building cost categories such as GLA, bath count, basement size, basement finish sf, garage count and fireplace count are based on the amount they contribute to value. By definition, depreciated replacement cost is the amount that the building contributes to site value. Depreciation is xx%, so the market is paying xx% of replacement cost for the buildings. See Depreciation Calculation attached which includes the xx% factor applied to relevant cost categories. COST APPROACH TO VALUE (not required by Fannie Mae)

2. Add commentary at the bottom of page 3 of the 1004 with this statement:

Adjustment Calculations: Adjustments for building cost categories such as GLA, bath count, basement size, basement finish sf, garage count and fireplace count are based on the amount they contribute to value. Depreciated replacement cost is the amount that the building contributes to site value. Depreciation is x%, so the market is paying y% of replacement cost for the buildings. See Depreciated Cost Adjustments summary attached which includes the y% factor applied to relevant cost categories.

3. On page 3 in the Summary of Sales Comparison Approach, I use comments like these:

"The Date of Sale / Time adjustments are developed by applying the x.x% appreciation rate (or \$/day) to the interval between comp contract date and report effective date. Adjustments for building characteristics are developed with the depreciated cost method. See page three Adjustment Calculations and the Depreciated Cost Adjustments summary attached."

4. In the Support for the opinion of site value section begin with this and edit as necessary. If there are comparable site sales, summarize those and add attachments as necessary.

"There are no recent lot sales in this fully developed neighborhood. The allocation method applied at the 2023 assessor LTV ratio of xx% to the median price of \$xxx,000 infers \$xx. Assessor estimate is \$xx. The extraction method applied to Comp x indicates \$xx. Most weight is given the extraction method because it begins with a similar lot with similar improvements.

COST APPROACH TO VALUE (not required by Fannie Mae)

Provide adequate information for the lender/client to replicate the below cost figures and calculations.
Support for the opinion of site value (summary of comparable land sales or other methods for estimating site value)
There are no recent lot sales in this fully
developed neighborhood. The allocation method applied at the 2021 assessor LTV ratio of xx% to the median price of \$xxx,000 infers \$xx.
Assessor estimate is \$xx. The extraction method applied to Comp x indicates \$xx. Most weight is given the extraction method because it begins
with a similar lot with similar improvements.

5. Comments on Cost Approach should include National Building Cost Manual 2024 as the source of cost data. Don't report Solomon Cost as your source of cost data. Solomon Cost is a calculator that uses data from National Building Cost Manual 2024.

6. Enter the Quality rating from cost service. If the subject is Q3.5, report Q3 or Q4. Q3.5 is a high Q4 or a low Q3.

ESTIMATED 🔄 REPRODUCTION OR 🔀 REPLACEMENT COST NEW
Source of cost data National Building Cost Manual 2023 5
Quality rating from cost service 4 6 Effective date of cost data 2023 7
Comments on Cost Approach (gross living area calculations, depreciation, etc.)
Quality Class 4 Good Standard is used (p 7, 12, 27-30). "As-is" value of
Site Improvements includes depreciation to those features. The Age-Life
method of depreciation assumed in this report includes all elements of
depreciation to the improvements in one calculation shown in the
Physical category
Economic Life - Effective Age = Remaining Economic Life

7. Enter the Effective Date of the cost data.

8. In Comments on Cost Approach, I use this: Quality Class 4 Good Standard is used (p 7, 12, 27 - 30). "As -is" value of Site Improvements includes depreciation to those features. The Age -Life method of depreciation assumed in this report includes all elements of depreciation to the Improvements in one calculation shown in the Physical category. Economic Life - Effective Age = Remaining Economic Life.

The page numbers 7, 12, 27 - 30 apply to all quality ratings.

Appendix A

Glossary

Age-Life Method: a method of estimating depreciation in which the ratio between the effective age of a building and its total economic life is applied to the current cost of the improvements to obtain a lump sum deduction; also known at the economic age-life method – The Dictionary of Real Estate Appraisal 6th Ed p 6

Depreciation: a loss in property value from any cause; the difference between the cost of an improvement on the effective date of the appraisal and the market value of an improvement on the same date – The Dictionary of Real Estate Appraisal 6th Ed p 63

Economic Age-Life Method: see Age-Life Method (above) – The Dictionary of Real Estate Appraisal 6th Ed p 91.

Economic Life: the period over which improvements to real property contribute to property value. – The Dictionary of Real Estate Appraisal – 6th Ed p 72

Effective Age: The age of a property that is based on the amount of observed deterioration and obsolescence it has sustained, which may be different from chronological age. - The Dictionary of Real Estate Appraisal 6th Ed p 74

Iteration: a problem-solving or computational method in which a succession of approximations, each building on the one preceding, is used to achieve a desired degree of accuracy – Dictionary.com

Remaining Economic Life: the estimated period over which existing improvements are expected to continue to contribute economically to property value – The Appraisal of Real Estate 15th Ed p 565

Marginal Cost: the cost of one additional unit of any item produced or bought in quantity - "marginal cost". Dictionary.com Unabridged. Random House, Inc. 17 Apr 2017.

Appendix B

Single Family Quality Classification Assumptions

National Building Cost Manual	Solomon	UAD
Class 1 Luxury	1	1
1&2	1.5	
Class 2 Semi Luxury	2	2
2&3	2.5	
Class 3 Best Standard	3	3
3&4	3.5	
Class 4 Good Standard	4	4
4&5	4.5	
Class 5 Average Standard	5	5
5&6	5.5	
Class 6 Minimum Standard	6	6

Complexity Assumptions:

National Building Cost Manual uses building shapes to categorize complexity within a quality classification.



Solomon assumes Q1 is 10 corners, Q2 is 8 corners, Q3 is 6 corners and Q4-6 are 4 corners.

See next page for description of Quality Classifications.

Quality Classification

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

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





See next page for Quality Classifications of Manufactured Housing.

Manufactured Housing

Quality Classification

	Class 1 Best Quality	Class 2 Good Quality	Class 3 Average Quality	Class 4 Low Quality	Class 5 Lowest Quality
Design	Indistinguishable from site- built construction, good floor plan and sight lines, superior fit and finish	Comparable to site-built construction, good floor plan, shelves and alcoves, good fit and finish	Clearly manufactured housing but with good design and materials, adequate fit and finish	Mobile home design, utilitarian floor plan, commodity-grade materials	Poor design, often sold unfinished, common only in Sun Belt states
Roof (12% of total cost)	Complex roof line, 30-year architectural shingles, roof pitch at least 4" in 12", good overhang on all sides, R-38 insulation	Decorative roof line, gable accents, 25-year shingles, 4" in 12" pitch, 12" overhang on all sides, R-33 insulation	Gable accents, 25-year shingles, 4" in 12" pitch, 8" to 12" overhang front and back, R-21 insulation	Simple roof line, less than 4" in 12" pitch, small overhang front and back, R-19 insulation	Straight roof line, minimum pitch, little or no overhang, minimum roof cover, R-7 insulation
Exterior Walls (18% of total cost)	Good fiber-cement siding, 9' to 10' high, decorative trim, 6" exterior walls, R-19 insulation, 7/16" plywood sheathing	Painted fiber cement siding, 9' high, some trim, 6" exterior walls, R-15 insulation, 7/16" OSB sheathing	Good foam-backed vinyl siding, 8' to 9' high, 4" exterior walls, R-13 insulation, 7/16" OSB sheathing	Vinyl siding, 8' high, 4" exterior walls, R-11 insulation, 3/8" plywood sheathing	Hardboard or economy siding, 7' high, 4" exterior walls, R-7 insulation
Doors and Windows (9% of total cost)	Two 36" wide insulated steel panel exterior doors, solid core wood panel interior doors, good hardware, large insulated low-E vinyl sash windows, recessed entry	Two 36" wide insulated steel exterior doors, hollow core wood interior doors, good hardware, good insulated low-E vinyl sash windows, recessed entry	36" wide steel front door with deadbolt, hollow core wood interior doors, average hardware, insulated vinyl windows, recessed entry	36" wide steel front door, hollow core wood interior doors, economy hardware, smaller dual glazed vinyl windows, 6' sliding bedroom door	34" or 32" wide aluminum exterior doors, hollow core wood interior doors, economy hardware, aluminum windows with storm sash
Interior (5% of total cost)	Hardwood paneling or ½" gypsum board with good workmanship and trim throughout, coffered/ vaulted/beamed ceilings, plank-type acoustical tile, mirrored walls, built-in buffet cabinets, custom drapes, skylights, window sills, good drapes with sheers throughout	Pre-finished hardwood paneling and trim or ½" gypsum board in all rooms, vaulted/beamed, ceiling in main rooms, good floor to ceiling drapes over sheer underlays in living room and dining room, several wall mirrors, some acoustic treatments	Pre-finished and grooved hardwood, plywood paneling or ½" gypsum board, no exposed fasteners, coordinated drapes in all rooms except kitchen and baths, one vaulted ceiling, acoustic tile, pre-finished wood trim	Pre-finished fire rated plywood paneling or 3/8" gypsum board, some exposed fasteners, acoustical tile ceiling, economy drapes in living room, dining room, and bedrooms, vinyl on composition molding.	Stapled 3/8" vinyl- covered wallboard with battens at seams and corners, exposed fasteners or holding strips, unit may have been sold with interior finishing incomplete.
Floors (8% of total cost)	Hardwood or ceramic tile entry, 30-50 oz. carpet, good vinyl in utility and guest bath. Good vinyl or hardwood in kitchen.	26-30 oz. carpet with 1/2" pad in all rooms except guest bath and utility, vinyl in kitchen, utility, and guest bath	22-26 oz. carpet with 1/2" rebond pad in all rooms except baths and kitchen, vinyl in kitchen and baths	16-22 oz. carpet with 5 lb. pad in living, dining and bedrooms, economy vinyl sheet or tile in other areas	Glued or stapled foam- backed carpet in living room and bedroom, economy vinyl elsewhere
Heating (7% of total cost)	110,000 BTU upflow air- condition-ready forced air furnace with exterior access door, metal ducting to all rooms, fireplace, dual-zone heating	80,000 to 110,000 BTU upflow or downflow air- condition-ready furnace with exterior access door, metal ducting to all rooms, fireplace	80,000 BTU upflow or downflow forced air condition-ready furnace, ducting to all rooms, simulated fireplace	Forced air furnace, fiberglass attic ducting to all rooms, under-door return vents, ready for air conditioning unit.	Forced air furnace, minimum taped fiberglass duct, registers at the room center, return vents under doors
Kitchen (23% of total cost)	18± LF of 25" wide stone or ceramic counter, 4" splash, luxury cabinets, roller drawers, dropped luminous ceiling, island work space, walk-in pantry, name-brand fixtures, cast iron sink, wet bar	16 ± LF of tile or Corian counter, 4" splash, quality wood cabinets, dropped luminous ceiling, island work space, walk-in pantry, good quality fixtures, stainless or integrated 8" deep sink	14± LF of Corian counter, 2" splash, average quality wood-face cabinets and hardware, built-in range and oven with hood and fan, pantry cabinet, 7" deep stainless or porcelain sink	12± LF laminate counter, smaller commodity-grade cabinets with wood raised panel doors, no lining, built-in range and oven, hood and fan, add for dishwasher if present	10± LF of 24" wide laminate counter, plastic-faced MDF cabinets, stapled and glued, economy range and oven, minimum grade sink and fixtures, add for dishwasher if present
Baths and Plumbing (14% of total cost)	2 to 2¾ baths, 8 fixtures, master bath with two basins, sunken 60" tub, fiberglass shower with glass door, quality medicine cabinets, 6± feet of mirror over 8± feet of cultured marble or ceramic tile lavatory top, decorative faucets, 40-gal. water heater, separate commode closet	2 baths, vent fans, master bath will have two basins, sunken 60° tub and stall shower, quality medicine cabinets and fixtures, cultured marble vanities, good cabinets, 60° one- piece shower in guest bath, 30- to 40-gallon water heater, separate commode closet	2 baths, vent fans, fiberglass shower with glass or plastic door, fiberglass 60° tub, acrylic round toilets, 6 to 8 LF cultured marble vanity in each bath, twin basin master bath with 4± foot mirror, good cabinets, 30- to 40-gallon water heater	1% baths, fiberglass shower with plastic door, fiberglass one-piece 54" tub, acrylic round toilets, 4 to 5 linear foot cultured marble vanity with single basin, average quality cabinets and hardware, 30-gallon water heater	1¾ baths, fiberglass 54* one-piece tub and shower with curtain, acrylic round toilets, small 4 plastic marble vanity, minimum quality cabinets and hardware, 20-gallon electric water heater, plastic supply and drain pipe
Bedrooms (4% of total cost)	9 to 14 linear foot floor-to- ceiling sliding mirrored wardrobe doors, or large walk- in closets, phone and cable TV jacks	9 to 14 linear foot floor-to- ceiling mirrored sliding wardrobe doors in master bedroom or walk-in closets, phone and cable TV jacks	10± linear foot wardrobe, floor-to-ceiling mirrored sliding doors in master bedroom, cable TV jacks	8± linear foot wardrobe, pre-finished and grooved plywood doors, mirrored wardrobe door in master bedroom	Five to six linear foot wardrobe, plain plywood sliding doors

Building Cost Historical Index

Use this table to find the approximate current dollar building cost when the actual cost is known for any year since 1957. Multiply the figure listed below for the building type and year of construction by the known cost. The result is the estimated 2024 construction cost.

Year	Masonry Buildings	Concrete Buildings	Steel Buildings	Wood-Frame Buildings	Agricultural Buildings	Year of Construction
1957	16.85	17.39	15.69	13.02	13.20	1957
1958	16.37	16.74	14.93	12.98	15.75	1958
1959	15.86	16.21	14.58	12.43	12.62	1959
1960	15.49	15.91	14.35	12.25	12.38	1960
1961	15.17	15.85	14.10	12.02	12.33	1961
1962	14.83	15.38	13.76	11.88	12.15	1962
1963	14.61	14.98	13.60	11.66	11.02	1963
1964	14.19	14.81	13.41	11.25	11.57	1964
1965	13.73	14.42	12.95	11.01	11.27	1965
1966	13.11	14.00	12.45	10.53	10.95	1966
1967	12.01	13.33	11.04	10.02	10.51	1907
1966	12.20	12.00	10.74	9.47	0.05	1900
1970	11.00	11.51	10.24	8.67	9.00	1970
1971	10.44	10.54	9.47	7.47	8.39	1971
1972	9.71	9.76	8.85	7.49	7.81	1972
1973	8.87	9.25	7.86	6.91	7.33	1973
1974	7.89	8.48	7.38	6.46	6.80	1974
1975	7.17	7.49	6.63	6.07	6.06	1975
1976	6.72	7.14	6.29	5.85	5.75	1976
1977	6.26	6.70	5.98	5.43	5.41	1977
1978	5.83	6.26	5.51	4.99	4.89	1978
1979	5.35	5.57	4.93	4.57	4.63	1979
1980	4.85	5.06	4.39	4.10	4.19	1980
1961	4.00	4.77	4.03	3.92	3.91	1000
1982	4.43	4.50	3.91	3.78	3.78	1982
1983	3.94	4.45	3.65	3.34	3.30	1984
1985	3.83	3.94	3.55	3.24	3.40	1985
1986	3.73	3.92	3 49	3.19	3.33	1986
1987	3.72	3.83	3.45	3.13	3.30	1987
1988	3.65	3.68	3.39	3.10	3.25	1988
1989	3.56	3.62	3.22	3.04	3.14	1989
1990	3.35	3.48	3.06	2.82	3.00	1990
1991	3.62	3.43	2.91	2.67	2.84	1991
1992	3.24	3.39	2.87	2.66	2.82	1992
1993	3.16	3.35	2.77	2.62	2.77	1993
1994	3.09	3.13	2.67	2.52	2.57	1994
1995	2.93	2.00	2.47	2.37	2.43	1995
1990	2.03	2.01	2.41	2.32	2.39	1990
1998	2.60	2.60	2.01	2.27	2.30	1998
1999	2.51	2.51	2.16	2.15	2.26	1999
2000	2.44	2.44	2.07	2.07	2.18	2000
2001	2.37	2.37	2.04	1.99	2.13	2001
2002	2.31	2.31	1.99	1.97	2.08	2002
2003	2.27	2.27	1.94	1.95	2.05	2003
2004	2.17	2.17	1.89	1.90	1.99	2004
2005	2.01	2.01	1.69	1.71	1.95	2005
2006	1.90	1.90	1.56	1.53	1.74	2006
2007	1.84	1.84	1.49	1.42	1.62	2007
2008	1.72	1.72	1.41	1.36	1.53	2008
2009	1.71	1.71	1.30	1.30	1.55	2009
2010	1.70	1.70	1 32	1.35	1.52	2010
2012	1.67	1.67	1.18	1.32	1.53	2012
2013	1.60	1.60	1.26	1.25	1.43	2013
2014	1.59	1.59	1.25	1.23	1.41	2014
2015	1.56	1.56	1.24	1.22	1.40	2015
2016	1.55	1.55	1.36	1.23	1.37	2016
2017	1.50	1.50	1.38	1.24	1.37	2017
2018	1.43	1.43	1.19	1.13	1.28	2018
2019	1.34	1.34	1.25	1.08	1.22	2019
2020	1.32	1.32	1.19	1.10	1.21	2020
2021	1.28	1.28	1.26	1.09	1.21	2021
2022	1.22	1.22	1.10	1.01	1.13	2022
2023	1.00	1.00	1.00	1.00	1.00	2023
	1.00	1.00	1.00	1.00	1.00	and by the other