CABARRUS COUNTY 2024 APPRAISAL MANUAL

CALCULATION OF SYSTEM VALUES

PREFACE

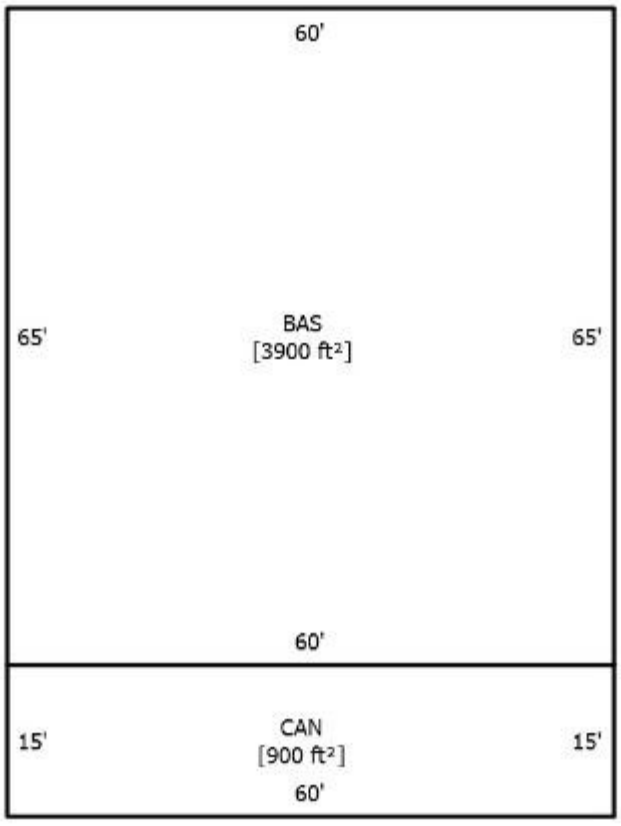
Simple compilation of data is only one part of the system's function. Secondly is determination of values associated with the varied structural components of each improvement type. The following chapter details how the system makes its calculations in the derivation of property values.

CALCULATION OF INDEX VALUES

In order for the user to have a basic understanding of the operation of the SYSTEM and the computerized application of the index valuation models, the following step-by-step calculation of a sample parcel is presented. We have chosen a commercial property in order to show all the various indices. However, the procedure is identical for single family residences unless otherwise indicated.

The following graph and structural element data will be used for the purpose of example:

EXAMPLE



BUILDING SKETCH

STEP 1. **AREA CALCULATIONS**

SUBAREA			
TYPE	**GS AREA**	**%**	**EFFECTIVE AREA**
BAS	3,900	100	3,900
CAN	900	025	225
FIREPLACE	Fireplace		0
SUBAREA TOTALS	4,800		4,125

A. Determine the square foot area of all the sub areas. As shown on the sample card, the parcel has two sub areas:

BAS = 3,900 square feet
CAN = 900 square feet

B. Multiply each gross area by the percentages assigned to it (this percentage is located in the AUXILLIARY AREA ADJUSTMENTS table found in the Chapter 11 of this manual) to arrive at the effective area of the building.

BAS 3900 SQ. FT. X 100%	=	3,900
CAN 900 SQ. FT. X 25%	=	225
TOTAL EFFECTIVE AREA		4,125

STEP 2. **DETERMINE QUALITY INDEX (Points)**

The determination of the quality index is a most important operation. It is the discriminator allowing differences and local conditions to be expressed as an index number which, when applied to a general county wide rate for a given type of improvement, will yield an adjusted base rate. This adjusted base rate simulates the per square foot rate which the market would most probably yield should that parcel sell.

CONSTRUCTION DETAIL

Foundation - 4	
Spread Footing	6.00
Sub Floor System - 2	
Slab on Grade-Residential/Commercial	6.00
Exterior Walls - 11	
Concrete Block	22.00
Exterior Walls - 21	
Face Brick	0.00
Roofing Structure - 9	
Rigid Frame w/Bar Joist	10.00
Roofing Cover - 4	
Built Up Tar and Gravel/Rubber	4.00
Interior Wall Construction - 5	
Drywall/Sheetrock	8.00
Interior Floor Cover - 7	
Cork or Vinyl Tile	7.00
Interior Floor Cover - 14	
Carpet	0.00
Heating Fuel - 04	
Electric	1.00
Heating Type - 10	

Heat Pump	6.00
Air Conditioning Type - 03 Central	6.00
Commercial Heat & Air - 2 Packaged Units	0.00
Structural Frame - 04 Masonry	12.00
Ceiling & Insulation - 03 Suspended - Ceiling and Wall Insulated	7.00
Average Rooms Per Floor - 1 Average Rooms Per Floor	0.00
Floor Number - 1 Floor	0.00
Unit Count - 001 Units	0.00
Plumbing Fixtures 8.00	6.000
TOTAL POINT VALUE	101.000

SAMPLE PARCEL DATA

A. Select the appropriate valuation mode. In the sample parcel the model is shown as "07", the model for commercial buildings.

B. Determine the points associated with the structural element data:

FOUNDATION - Spread (4) 6 points

SUB FLOOR SYSTEM - Slab on Grade (2) 6 points

EXTERIOR WALLS - Concrete Block (11) 20>
Face Brick (21) 25> 22 points

If the subject has 2 exterior wall types the points are added together and then divided by two and truncated.

ROOFING STRUCTURE - Bar Joist (09) 10 points

ROOF COVER - Built up Tar & Gravel (04) 4 points

INTERIOR WALL CONSTRUCTION - Drywall (5) 8 points

If the subject has 2 interior wall types, the points are added together and divided by two and truncated.

INTERIOR FLOORING – Vinyl Tile (7) 7> 7 points
Carpet (14) 7>

If the subject has 2 floor types, they are added together and divided by 2 and truncated.

HEAT FUEL - Electric (4)	1	point
HEAT TYPE - Heat Pump (10)	6	points
AIR CONDITIONING TYPE - Central (3)	6	points

Note: At this point, if the parcel were a single family residence, the next step would be to locate the table for the "01" model which assigns points for the various combinations of the number of bedrooms to the number of baths. These points are then added to the above and then multiplied by the sum of the Quality x Market x Size ADJUSTMENT to obtain the QUALITY INDEX.

STRUCTURAL FRAME - Masonry (04)	12	points
CEILING AND INSULATION - Suspended Ceiling and Wall Insulated (03)	7	points
COMMERCIAL PLUMBING - 4.0 Restrooms, 8.00 fixtures (8 fixtures divided into 3,900 sq. ft. = 487.55 sq. ft/average or 6 points)	6	points

From the preceding figures we have obtained the following:

FOUNDATION	6	points
SUB FLOOR SYSTEM	6	points
EXTERIOR WALL CONSTRUCTION	22	points
ROOFING STRUCTURE	10	points
ROOFING COVER	4	points
INTERIOR WALL CONSTRUCTION	8	points
INTERIOR FLOORING	7	points
HEAT FUEL	1	point
HEAT TYPE	6	points
AIR CONDITIONING TYPE	6	points
STRUCTURAL FRAME	12	points
CEILING AND INSULATING	7	points
COMMERCIAL PLUMBING	6	points
TOTAL POINTS	**101**	**points**

BUILDING ADJUSTMENTS			
Market/Design	2	Rectangle	0.9600
Quality	3	Average	1.0000
Size	Size	Size	1.0600
TOTAL ADJUSTMENT FACTOR			1.020
TOTAL QUALITY INDEX			103

The TOTAL ADJUSTMENT FACTOR is the Market/Design x height factor x the quality factor x size factor. This property has no height factor therefore, 0.96 (design) x 1.00 (quality) x 1.06% (size) = 0.96 x 1.06 = 1.0176 or 1.02.

The TOTAL QUALITY INDEX is the Total Adjustment Factor (1.02) x Total Points (101) = 1.03

STEP 3. DETERMINE EFFECTIVE BASE RATE

A. The base rate for a particular model is given. In this instance, it is $130.00 per square foot.

B. Multiply the base rate times the quality index:

$130.00 x 1.03 = $100.94
$133.90 is the effective base rate.

STEP 4. CALCULATE REPLACEMENT COST NEW

A. Replacement Cost New is the product of the effective base rate times the total adjusted area calculated earlier. In the sample parcel we have;

$133.90 x 4,125 EFF AREA = $552,338

STEP 5. DETERMINE DEPRECIATION AND PERCENT CONDITION OF THE SUBJECT

A. Depending on the improvement type one of two methods is used. In chapter 11 are the appropriate table and at the end of this chapter, a further discussion of their use.

B. The sample parcel is an improvement type 10 with an effective age of 9 years and is depreciated 13%.

C. To determine the percent condition, subtract the amount of depreciation from 1.0. In the sample parcel, the percent condition equals 1.0 - .13 = 87%.

STEP 6. CALCULATE THE DEPRECIATED BUILDING VALUE

A. The DEPRECIATED BUILDING VALUE is the Replacement Cost New x the Percent Condition in the sample parcel.

$552,338 x .87 = $480,534.06 Rounded to $480,535

A. To the Depreciated Building Value is added the total Depreciated OB/XF Value and Land Value.

B. In the sample, this is as follows:

$480,535	Depreciated Building Value
$15,200	Total Depreciated OB/XF Value
$150,000	Land value
$645,735	Total value

DEPRECIATION

Find the depreciation schedule in the Appendix for the appropriate Improvement Type. For those with improvement types indicating residential and/or non-income use of average, below average and above average quality, locate the proper exterior wall type and then record the annual and initial percent depreciation rates.

Depreciation is calculated for each separate stage of the life cycle of an improvement. The tables in the appendix have five ranges of age as columns. These ages are determined differently for each improvement type and may be different for each year.

RESIDENTIAL AND/OR NON INCOME PROPERTY depreciation is also determined in the table by the row on which the exterior wall is contained. To determine the total depreciation, you must calculate each age range independently.

For example, (assume we are using the following table):

DEPRECIATION SCHEDULES

EXTERIOR WALL TYPE	INCREMENTAL AGING PERIODS				
From - To	1-2	3-11	12-19	20-34	35 & over
1 - 4	1.00	1.00	1.00	1.00	1.00
5 - 7	1.00	1.00	1.00	1.00	1.00
8 - 11	1.00	1.00	1.00	1.00	1.00
12 - 15	1.00	1.00	1.00	1.00	1.00
16 - 20	1.00	1.00	1.00	1.00	1.00
21 - 22	1.00	1.00	1.00	1.00	1.00
23 - 28	1.00	1.00	1.00	1.00	1.00

If our improvement were 24 years old, determined by subtracting the EFFECTIVE AGE from the EFFECTIVE REAPPRAISAL YEAR, we find the total depreciation by calculating each aging period separately and summing the depreciation. Using an exterior wall type 17, (CB Stucco), we calculate the total depreciation as follows:

FIRST 2 YEARS = 2.00	2 X 1.00
NEXT 22 YEARS = 22.00	22 X 1.00

24 YEARS = 24% TOTAL DEPRECIATION

The maximum normal depreciation normally allowed is 70% or a residual of 30% good. As we have not exceeded this figure, the 24% depreciation from normal physical deterioration is not over ridden.

FOR RESIDENTIAL OR INCOME PROPERTIES WITH A MINIMUM OR EXCELLENT QUALITY FACTOR another table has been constructed which bases the amount of depreciation for a particular property on its useful life, meaning that age at which a property ceases to be functional. For example, IMPROVEMENT USE CODE 23 has a typical life expectancy of 25 years. Therefore when the building is 25 years old, it has been depreciated down to the lowest point of 30% condition or 70% depreciation.

SCHEDULE FOR DETERMINING DEPRECIATION ON BUILDINGS WITH A 40 YEAR LIFE EXPECTANCY AS USED IN THE EXAMPLE ABOVE.

40 YEAR LIFE EXPECTANCY - DEPRECIATION SCHEDULE #6

EFFECT. AGE	AMOUNT OF DEPR.	PERCENT. GOOD	*	EFFECT. AGE	AMOUNT OF DEPR.	PERCENT. GOOD
1	1	99		21	37	63
2	2	98		22	39	61
3	3	97		23	41	59
4	4	96		24	43	57
5	5	95		25	45	55
6	7	93		26	47	53
7	9	91		27	49	51
8	11	89		28	51	49
9	13	87		29	54	46
10	15	85		30	57	43
11	17	83		31	60	40
12	19	81		32	63	37
13	21	79		33	66	34
14	23	77		34	68	32
15	25	75		35	70	30
16	27	73		36	70	30
17	29	71		37	70	30
18	31	69		38	70	30
19	33	67		39	70	30
20	35	65		40	70	30

ECONOMIC OBSOLESCENCE - FUNCTIONAL OBSOLESCENCE

ECONOMIC OBSOLESCENCE is determined through value loss due to conditions outside the property.
FUNCTIONAL OBSOLESCENCE is determined through value loss within the property.

Economic and functional obsolescence is depreciation added to the Normal Depreciation. Therefore if a building has 10% normal depreciation due to its age and you apply 10% Economic Obsolescence due to outside influence, the total depreciation would be 20%.