

2023 Level II Cost Approach Problems
Class Problems 1 through 6 Answers

Problem 1

You have a commercial building. There is a total of 5,200 square feet of which 3,900 square feet has a wall height of 16 feet. The remaining 1,300 square feet has a wall height of 14 feet. What is the average wall height?

3,900 sq ft divided by 5,200 sq ft = 75%

1,300 sq ft divided by 5,200 sq ft = 25%

times 16 ft

times 14 ft

100%

12

3.5

15.5 **Rounded 16 Feet**

Problem 2

You have a commercial building that measures 200 feet by 500 feet. What is the PAR?

Perimeter equals $200 + 200 + 500 + 500 = 1,400$

Area equals $200 \text{ times } 500 = 100,000$

Perimeter to Area Ratio = Perimeter of

divided by the area of

times 100

rounded to nearest whole number

1,400

100,000

0.014

1.4

1

Problem 3

You have a structure that has 2,500 square feet of which 1,500 is general office. The remaining 1,000 square feet is utility storage. Wall Type 1 and the building measures 100 by 25. What is the adjusted base rate using GCM Schedule.

Perimeter equals $100 + 100 + 25 + 25 = 250$

Area equals $100 \text{ times } 25 = 2,500$

Perimeter to Area Ratio = Perimeter of

divided by the area of
times 100
rounded to nearest whole number

250
2,500
0.1
10

10

Usage 1,500 sq feet is general office

1,000 sq feet is utility storage

2,500 total sq feet.

$1,500/2,500 =$ 60%

$1,000/2,500 =$ 40%

Go to Appendix G, Page 12 and look for general office

Go to Appendix G, Page 12 and look for utility storage

\$127.59 60% \$76.55

\$75.83 40% \$30.33

\$106.88

Problem 4

You have a fire resistant building with exterior walls of brick. It measures 100 feet by 180. Twenty five percent is industrial office and the wall height is 12 feet. The remaining area is light warehouse with a wall height of 18 feet. What is the average wall height? What is the adjusted base rate?

Perimeter equals $100 + 100 + 180 + 180 = 560$

Area equals 100 times 180 = 18,000

Perimeter to Area Ratio = Perimeter of

divided by the area of
times 100

rounded to nearest whole number

560

18,000

0.0

3.1

3

25% is industrial office times the wall height of 12 feet

3

75% is light warehouse times the wall height of 18 feet

13.5

Average wall height is

16.5 **Rounded 17**

Do we have to make a wall height adjustment?

Industrial Office

plus wall height adj. 5 feet times \$1.39

\$1.51

\$77.07

\$7.55

\$84.62

25%

\$21.16

Light Warehouse

less wall height adj. 1 foot times \$.80

0.86

\$48.48

-\$0.86

\$47.62

75%

\$35.72

Adjusted base rate

\$56.88

Problem 5

You have a structure with 3,000 square feet of which 1,800 is fire resistant. The remainder is Fire Proof Steel. PAR 8, wall type 1. Building is a bank. What is the amount of adjustment needed to account for the Fire Proof Steel?

1,200 divided by 3,000 is 40%

Adj for FP Steel is \$8.15 \$9.28

Net adjustment then is \$9.28 times 40% or

\$3.71

Problem 6

You have a parking lot containing 20,000 square feet of 2" over 8" base of asphalt paving. It has a grade of C-1 and is in average condition. It is located in Greene County. It was put down in 1991.

Additionally, you have 200 linear feet of metal guardrail surrounding the parking lot. It is in average condition, C grade and also installed in 1991.

What is the total True Tax Value of this property?

Paving from page 27 of App G Book 2.

20,000 square feet is

add for 3" base

\$2.57

\$0.40

Sub total

\$2.97

Adjust for grade

95%

Adjusted subtotal

\$2.82

Adjust for Location Multiplier

91%

Adjusted base rate

\$2.57

Square feet

20,000

RCN

\$51,400

Depreciation

80%

True Tax Value

\$10,280

\$10,300

Guardrail:

200 linear feet

Rate

\$ 23.76

Location Multiplier

91%

\$21.62

Linear feet

200

Replacement Cost New

\$4,320

Depreciation

80%

True Tax Value

\$860

\$900

Total True Tax Value of Improvements

\$11,200