

Integrated Measurement Projects



Key idea

One diagram can generate different quantities. Match each cost to the measurement it uses.

Units tell you what to find

Length: m Area: m^2
Volume: m^3 Rate: \$/unit

Read the model



Rectangle + triangle form the cross-section. The shape is extruded through a constant depth.

Common mistake

Do not use the total area for a finish that covers only one region.

Build the Measurements



Key idea

Calculate reusable measurements before applying prices. Keep each value labelled.

Cross-sectional area

Rectangle: $6(1.2) = 7.2 \text{ m}^2$
Triangle: $\frac{1}{2}(6)(2.5) = 7.5 \text{ m}^2$
Total: 14.7 m^2

Slope and volume

$$s = \sqrt{6^2 + 2.5^2} = 6.5 \text{ m}$$
$$V = 14.7(5) = 73.5 \text{ m}^3$$

Quantity table

Record: quantity, value, unit, rate and cost. This makes the final quote traceable.

 = **copy this into your book.** Boxes without a pencil are just to read.

Turn Measurements into Costs



Key idea

$\text{cost} = \text{measured quantity} \times$
 $\text{unit rate} + \text{fixed fee}$

Component costs

Sponsor: $7.2(125) + 650 = \$1550$
Art: $7.5(62.50) = \$468.75$

Length and volume costs

Lights: $(6 + 6.5)(77.50) = \$968.75$
Concrete: $73.5(220) = \$16\,170$

Common mistake

Apply an allowance before pricing. Round whole packs or loads up; round money at the end.

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Decide and Evaluate



Key idea

A recommendation needs calculated evidence: compare complete totals, then state the difference.

Complete quote

$$1550 + 468.75 + 968.75 + 16\,170 =$$

$\$19\,157.50$

Test the model

Is depth constant? Are one or both sides finished? Are delivery, labour, tax and wastage included?

Common mistake

A limitation is not just “not to scale”. Explain what was simplified and how it could change the quote.