

## COST ARCHITECTURAL PROJECTS

**UNIT CODE:**CON/OS/ARC/CR/04/6/A

### UNIT DESCRIPTION

This unit describes the competencies required to take off building components, abstract take off data, work up dimensions, prepare schedule of materials, prepare bill of quantities/ estimates, schedules and valuations and compute project costs.

<b>ELEMENTS</b> These describe the key outcomes which make up workplace function.	<b>PERFORMANCE CRITERIA</b> These are assessable statements which specify the required level of performance for each of the elements. <i>Bold and italicized terms are elaborated in the Range.</i>
1. Take off building quantities	1.1 Building plans are acquired and interpreted as per workplace procedures. 1.2 Dimension sheet/paper is prepared based on the standard format 1.3 List of quantities to be measured is prepared based on SMM 1.4 <b>Quantities</b> are calculated based on the unit of measure 1.5 Dimensions are booked based on the principles of measurement 1.6 Booked items are described based on the standard method of measurement for building and associated civil works (SMM) and civil engineering standard method of measurements (CESMM)
2. Abstract take off data	2.1 Abstracting sheet is prepared based on the standard format 2.2 Description of booked items are transferred to the abstracting sheet as per SOPs 2.3 <b>Quantities</b> are transferred to the abstracting sheet 2.4 Net quantities are calculated as per SOPs 2.5 Running through dimensions is carried out as per SOPs
3. Work up dimensions	3.1 Timesing of dimensions is carried out as per SOPs 3.2 Quantities are determined as per SOPs
4. Prepare bill of quantities/ estimates	4.1 Billing paper is prepared based on the SMM. 4.2 Abstracted quantities and their corresponding descriptions are transferred as per SMM 4.3 Casting up is carried out as per SMM. 4.4 Bill of quantities is priced as per the SOPs.
5. Prepare schedule of materials	5.1 <b>Types of materials</b> and equipment to be used are identified and listed.

	5.2 Building materials are quantified and recorded on a standard schedule 5.3 Quoted rates are included in the material schedule
6. Prepare valuations of work done	6.1 Work done is valued 6.2 Payment certificates are prepared and issued to the client
7. Compute project costs	7.1 Unit rates are built up based on the work element 7.2 Unit rates are inserted as per SOPs 7.3 Total cost of each work element is calculated as per SOPs 7.4 Variation costs are determined 7.5 Change order is prepared and issued to the client

### **RANGE**

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

<b>Variable</b>	<b>Range</b>
1. Quantities may include but not limited to:	<ul style="list-style-type: none"> <li>• Cubic</li> <li>• Square</li> <li>• Linear</li> <li>• Numbers (enumeration)</li> <li>• Items</li> </ul>
2. Types of materials may include but not limited to:	<ul style="list-style-type: none"> <li>• Fixtures</li> <li>• Timber</li> <li>• Walling materials</li> <li>• Roofing materials</li> <li>• Flooring materials</li> </ul>

### **REQUIRED SKILLS AND KNOWLEDGE**

This section describes the skills and knowledge required for this unit of competency.

#### **Required Skills**

The individual needs to demonstrate the following skills:

- Analytical skills
- ICT skills
- Structural detailing
- Scaling
- Interpretation of drawings

## Required knowledge

The individual needs to demonstrate knowledge of:

- Costs and estimates
- Architectural and structural drawings
- Building technology
- Applied mathematics
- Structural design
- Standard documents (CESMM and SMM)
- Quantity surveying practice and procedures
- Construction procedures
- Units of measurement
- Principles and terminologies
- Abstracting
- Casting up
- Work study
- Bill of quantities

## EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Carried out taking off of quantities 1.2 Worked up dimensions 1.3 Transferred descriptions of booked items to abstract sheet 1.4 Transferred quantities 1.5 Ran through dimensions 1.6 Billed measured works 1.7 Prepared bill of quantities 1.8 Valued work done 1.9 Built up unit rates
2. Resource Implications	The following resources should be provided: 2.1 Access to relevant workplace or appropriately simulated environment where assessment can take place 2.2 Materials relevant to the proposed activity or tasks
3. Methods of Assessment	Competency in this unit may be assessed through: 3.1 Direct Observation 3.2 Oral Questioning 3.3 Projects 3.4 Written tests
4. Context of	Competency may be assessed

Assessment	4.1 On job 4.2 Off job 4.3 During industrial attachment
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

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