

## DESIGN AND DETAIL ARCHITECTURAL PROJECTS

**UNIT CODE:**CON/OS/ARC/CR/01/6/A

### UNIT DESCRIPTION

This unit describes the competencies required to prepare a design brief, conduct site analysis, conduct literature review, carry out case study, perform activity study, prepare design brief, produce schematic drawings, prepare presentation drawings, prepare working drawings, prepare details drawings, revise working drawings and apply CADD in architectural work

<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. Prepare a design brief	1.1 <b><i>Design requirements</i></b> are noted as per the client's needs 1.2 The client's requirements are analyzed as per client's needs 1.3 Spaces and number of occupants are listed as per the client's needs 1.4 Client's cost expectation is noted 1.5 Compliance with local building regulations are established
2. Conduct site analysis	2.1 A survey map is acquired as per the site location 2.2 The site is visited as per the survey map 2.3 Site data is collected as observed 2.4 Collected data is analyzed based on design requirements 2.5 Site analysis report is prepared 2.6 Adjustments are proposed as per the site analysis
3. Conduct literature review	3.1 Research on design parameters is done as per spatial requirements 3.2 Research on material use is conducted as per spatial requirement 3.3 Research on historical backgrounds of similar projects is conducted
4. Carry out case study	4.1 An identical existing project is identified 4.2 The identified project is visited 4.3 Observations are recorded as per workplace

	<p>procedures</p> <p>4.4 Analysis of the observations is done</p> <p>4.5 Conclusions and recommendations are made as per the existing project.</p> <p>4.6 Sound findings are adopted in the proposed project</p>
5. Prepare design concept	<p>5.1 An emotional/psychological/spiritual attachment is developed to the functionality of the building</p> <p>5.2 A conceptual model is prepared</p>
6. Prepare spatial brief	<p>6.1 Furniture requirements are established as per the spatial requirements and number of people</p> <p>6.2 Anthropometric and ergonomics studies are carried out based on furniture and users</p> <p>6.3 Spatial areas are computed as per the anthropometrics and ergonomics</p> <p>6.4 A spatial brief (accommodation schedule) is prepared as per computed areas.</p>
7. Produce schematic drawings	<p>7.1 Bubble diagram is prepared as per the spatial requirement</p> <p>7.2 A scaled sketch is formulated based on the bubble diagram and client's proposed budget.</p> <p>7.3 A sketch model is prepared as per the sketch</p> <p>7.4 An estimated cost is computed based on the sketch</p> <p>7.5 Drawing and estimated cost is presented to the client for approval or adjustments</p>
8. Prepare presentation drawings	<p>8.1 Sketches are adopted or adjusted based on the client's approval</p> <p>8.2 <b>Fittings</b> and <b>Furniture</b> layout and human elements incorporated in the drawing as per spatial requirement</p> <p>8.3 Major dimensions are indicated as per the spatial design</p> <p>8.4 Artistic impressions are incorporated in the drawing</p> <p>8.5 Drawing is presented to the client for approval or adjustments</p>
9. Prepare working drawings	<p>9.1 Presentation drawings are adopted or adjusted based on the client's approval</p> <p>9.2 Artistic impressions removed from the working drawings</p> <p>9.3 Drawing is fully dimensioned and labelled</p> <p>9.4 Door and window schedules are prepared as per working drawing</p> <p>9.5 Finishing materials and codes are indicated on the working drawing</p> <p>9.6 <b>Detailed site plan</b> is prepared observing local</p>

	<p>government regulations</p> <p>9.7 Drawing is plotted on a tracing paper</p> <p>9.8 Drawing is produced on blueprint</p> <p>9.9 Working drawing is submitted to the local government authorities for approval</p> <p>9.10 Bill of quantities is prepared as per the approved drawings</p> <p>9.11 Working drawing and bill of quantities presented to the client.</p> <p>9.12 A works program is prepared based on the size of the project</p>
10. Prepare details drawings	<p>10.1 <b>Engineering drawings</b> are integrated into the details drawings</p> <p>10.2 Required details are identified based on the working drawings</p> <p>10.3 Scaled details are produced</p> <p>10.4 Details drawings are presented to the contractor</p>
11. Revise working drawings	<p>11.1 <b>Design changes</b> are received from parties in the design team</p> <p>11.2 Additions and alterations are incorporated in the working drawings</p> <p>11.3 Revised working drawings presented to the contractor for implementation.</p> <p>11.4 As built drawings are presented to local authorities for issuance of Occupational Certificate</p>
12. Apply CADD in architectural work	<p>12.1 Sketch is drafted using design software</p> <p>12.2 Sketch is detailed to produce presentation drawing</p> <p>12.3 Presentation drawing is detailed to produce working drawing</p> <p>12.4 Detail drawing is produced using design software</p> <p>12.5 Detail drawing is plotted on a tracing paper</p> <p>12.6 Detail drawing is produced on blueprint</p> <p>12.7 Building Information Management Systems are applied as per workplace procedures</p>

### 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.

Variable	Range
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1. Design requirements may include but not limited to:	<ul style="list-style-type: none"> <li>• Function</li> <li>• Size</li> <li>• Colour</li> <li>• Orientation</li> </ul>
2. Fittings may include but not limited to:	<ul style="list-style-type: none"> <li>• Wash hand basins</li> <li>• Bathtubs</li> <li>• Water closet</li> <li>• Sinks</li> </ul>
3. Furniture may include but not limited to:	<ul style="list-style-type: none"> <li>• Chairs</li> <li>• Tables</li> <li>• Wardrobes</li> </ul>
4. Engineering drawings may include but not limited to:	<ul style="list-style-type: none"> <li>• Structural engineering drawings</li> <li>• Civil engineering drawings</li> <li>• Mechanical engineering drawings</li> <li>• Electrical engineering drawings</li> </ul>
5. Design changes may include but not limited to:	<ul style="list-style-type: none"> <li>• Alterations</li> <li>• Additions</li> </ul>
6. Detailed site plan may include but not limited to:	<ul style="list-style-type: none"> <li>• Building location</li> <li>• Sewer and storm water drainage</li> <li>• Plot coverage</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:

- Designing
- Scheduling
- Sketching
- Drafting
- Modelling
- Creativity
- Estimation skills
- Observation skills
- Planning and organizing
- Analytical skills

### Required knowledge

The individual needs to demonstrate knowledge of:

- Design software
- History of architecture

- Design scales
- Anthropometrics and ergonomics
- Environmental regulations
- Architect's data
- Building standards and regulations
- Building codes
- Statutory regulations
- Safety precautions and regulations
- Fire standards
- Material science
- Mechanical services
- Electrical services
- Drainage systems
- Concept formulation
- Research
- Photography
- Structural design
- Thermal insulation
- Mathematics
- Acoustics
- Green concepts

### 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: <ul style="list-style-type: none"> <li>1.1 Prepared a design brief</li> <li>1.2 Prepared a site analysis report</li> <li>1.3 Prepared design concept</li> <li>1.4 Produced schematic drawings</li> <li>1.5 Prepared presentation drawings</li> <li>1.6 Prepared working drawings</li> <li>1.7 Prepared details drawings</li> <li>1.8 Applied CADD in architectural drawings</li> </ul>
2. Resource Implications	The following resources should be provided: <ul style="list-style-type: none"> <li>2.1 Access to relevant workplace or appropriately simulated environment where assessment can take place</li> <li>2.2 Materials relevant to the proposed activity or tasks</li> </ul>
3. Methods of Assessment	Competency in this unit may be assessed through: <ul style="list-style-type: none"> <li>3.1 Direct Observation</li> </ul>

	3.2 Oral Questioning 3.3 Portfolios 3.4 Projects 3.5 Written tests
4. Context of Assessment	Competency may be assessed 4.1 On job 4.2 Off job 4.3 During industrial Attachment
5. Guidance for information assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

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