PRODUCE BUILDING DRAWINGS

UNIT CODE : CON/OS/CET/CR/06/6/A

UNIT DESCRIPTION

This unit describes the competencies required to produce building drawings. It involves interpreting architectural drawings, preparing structural and civil drawings, preparing plumbing layouts, interpreting electrical and mechanical drawings.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENTS These describe the key outcomes which make up workplace function	**PERFORMANCE CRITERIA** These are assessable statements which specify the required level of performance for each of the elements *(Bold terms are elaborated in the Range)*
1. Interpret architectural drawings	1.1. ***Construction dimensions*** are identified according to the size of the proposed site, construction regulations, planning requirements and client specifications 1.2. Architectural drawings are interpreted in accordance with the architectural code of design, ***building code***, local authority by laws, regulatory requirements and client specification
2. Prepare structural and civil drawings	2.1. ***Structural elements*** are designed according to the codes of practice 2.2. Detailed plans and sections of designed elements are drawn as per dimensions and relevant standards 2.3. Bar bending schedule is prepared as per the code of practice 2.4. Structural drawings are produced in accordance with ***building code***, local authority by laws, regulatory requirements and client specification
3. Interpret electrical drawings	3.1. Electrical circuits drawings are sketched in accordance with the electrical code of practice and the architectural layout 3.2. Electrical connection layout is drawn in accordance with the electrical code of practice
4. Prepare plumbing layout	4.1. Building dimensions are identified as per the architectural drawings, structural and electrical drawings 4.2. Pipe sizes are determined as per ***consumption requirements*** and design requirements 4.3. ***Pipe types*** are determined according to the design requirements

ELEMENTS These describe the key outcomes which make up workplace function	PERFORMANCE CRITERIA These are assessable statements which specify the required level of performance for each of the elements *(Bold terms are elaborated in the Range)*
	4.4. ***Pipe fittings*** are determined according to the mode of connection or the pipe layout plan 4.5. Pipe layout plan is drawn as per the building design
5. Interpret mechanical drawings	5.1. Mechanical component dimensions are obtained as per structural and architectural drawings 5.2. ***Mechanical components*** are identified as per architectural and structural drawings 5.3. Mechanical drawings are interpreted as per specifications

RANGE

Variable	Range
1. Construction dimensions may include but not limited to:	• vertical dimensions • horizontal dimensions
2. building codes may include but not limited to:	• BS 8110 • Eurocodes • Kenya Building Codes, 1968 • Civil engineering codes
3. structural elements may include but not limited to:	• Slabs • Beams • Columns • Foundation • Stairs
4. Consumption requirements may include but not limited to:	• Residential • Commercial • Institution • Hospitals
5. Pipe types may include but not limited to:	• PVC • GI pipes • Mild steel • PPR
6. Pipe fittings may include but not limited to:	• Union • Bends • Sanitary fittings

Variable	Range
7. Mechanical components may include but not limited to:	• Gas supply • Cold and hot water supply systems • Plumbing layout • Sewer system • Firefighting • Ventilation system • Water treatment system • Refrigeration • Building automation system

REQUIRED KNOWLEDGE AND SKILLS

Knowledge

- Construction dimensions
- Architectural drawing
- Local authority by-laws
- Building code
- Structural elements
- Codes of practice
- Basic arithmetic
- Measurement
- Engineering drawing
- Plumbing
- Structural design
- Mechanical systems
- Engineering software
- Civil engineering drawings

Skills

- Measurement
- Basic arithmetic
- Design
- Computer Aided Design
- planning

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 Interpreted architectural drawings 1.2 Prepared structural drawings 1.3 Interpreted civil engineering drawings 1.4 Interpreted electrical drawings 1.5 Designed plumbing layout 1.6 Identified mechanical service requirements 1.7 Sketched mechanical drawings 1.8 interpreted sections, layout, elevations and as fixed drawings of mechanical items
2. Resource Implications	2.1 Measuring and drawing tools 2.2 Laptops 2.3 Desktop PCs 2.4 Printer/plotting device 2.5 Calculator 2.6 Internet 2.7 Codes of practice 2.8 Mechanical conventions 2.9 CAD Software
3. Methods of Assessment	Competency may be assessed through: 3.1 Demonstration 3.2 Practical assignment/project 3.3 Interview/Oral Questioning 3.4 Written
4. Context of Assessment	Competency may be assessed in an off and/or on the job setting or during industrial attachment
5. Guidance information for assessment	Holistic assessment with other units relevant to the building sector workplace and job role is recommended.