

CPCCSV5013A Matrix Map

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ELEMENTS AND PERFORMANCE CRITERIA

Element	Performance Criteria	Task / Question Map
1. Identify the significance of the macro and micro climates in the construction process.	1.1. Climate zones and their characteristics are identified and recorded for design projects requiring review of energy efficiencies.	Energy Efficiency and the Building Code of Australia: Q1 Q2 Q3 Q4 Q5 Q6 NCC and Climate Zones: Q1 Q2 Climate and House Design: Q1 Q2 Q3 Q4 Q5 Q6
	1.2. Methods for establishing characteristics of specific climates are established and documented.	Climate and House Design: Q3 Q4 Designing for Your Climate Zone: Q1 Investigating the Building's Orientation: Q2
	1.3. Construction materials and methods suited to specific climates are determined.	Climate and House Design: Q3 Q4 Q5 Glazing and Thermal Performance: Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Types of Insulation: Q1 Q2 Q3 Q4 Q5 Insulation for Energy Efficiency: Q1 Q2 Q3 Q4 Q5 Q6 Phase Change Material: Q1 Q2 Q3 Designing for Your Climate Zone: Q3 Structural Insulated Panel System (SIPS): Q1 Q2 Q3 Q4 Activity 1. Prepare a concept design for an energy efficient building design project: Q1 Activity 2. Create a materials board: Q1 Vapour Barriers: Q1 Q2
2. Assess design criteria for energy efficient construction.	2.1. Characteristics and location-specific requirements to establish a design are identified and listed.	Passive Solar Heating: Q1 Q2 Q3 Designing for Your Climate Zone: Q2 Investigating the Building's Orientation: Q1 Q2
	2.2. Appropriate form of construction is selected and documented according to established specifications.	Structural Insulated Panel System (SIPS): Q1 Q2 Q3 Q4 Activity 1. Prepare a concept design for an energy efficient building design project: Q1 Activity 2. Create a materials board: Q1

	2.3. Prevailing hot and cool wind directions are identified and recorded.	Investigating the Building's Orientation: Q1
	2.4. Sun path for the location is identified and documented.	Solar passive design I: Q1 Q2 Q3 Q4 Investigating the Building's Orientation: Q1
	2.5. Building orientation is established and documented.	Solar passive design I: Q1 Q2 Q3 Q4 Activity 1. Prepare a concept design for an energy efficient building design project: Q1
3. Assess building designs.	3.1. Accommodation within the building is assessed and recorded.	Activity 1. Prepare a concept design for an energy efficient building design project: Q1
	3.2. Effective zoning within the building is established.	Activity 1. Prepare a concept design for an energy efficient building design project: Q1 Establishing zones in the building plan: Q1 Q2
	3.3. Floor plan is sketched and recorded.	Activity 1. Prepare a concept design for an energy efficient building design project: Q1
	3.4. Suitability of design in relation to cross-ventilation and shadow lines is determined and recorded.	Activity 1. Prepare a concept design for an energy efficient building design project: Q1 Assessing a Building Design: Q3
	3.5. Impacts of energy efficiency design principles are identified and recorded for architectural and services design in accordance with state and territory legislation and the BCA.	NAThers: Q1 Q2 Q3 Q4 Q5 Electrical Lighting: Q1 Q2 Q3 Activity 1. Prepare a concept design for an energy efficient building design project: Q1 Activity 3. Prepare an energy efficiency design report: Q1 Heat Recovery & Energy Recovery Ventilation (HRV & ERV): Q1 Q2
4. Identify that energy consumption practices are incorporated into design briefs.	4.1. Energy appliances of the building and their consumption are established and recorded.	ACTIVITY: Electricity Audit Scenario: Q1 Q2 Q3 Appliance energy efficiency: Q1 Q2 Q3 Energy Efficient Appliances: Q1 Q2 Q3 Q4
	4.2. Recommended best practice to conserve energy is identified and documented in energy audits.	Operational Energy: Q1 Q2 Q3 ACTIVITY: Electricity Audit Scenario: Q1 Q2 Q3 Activity 3. Prepare an energy efficiency design report: Q1
	4.3. Selection and use of energy efficient fittings and services are determined and included in design brief.	Calculating R-Values: Q1 Activity 3. Prepare an energy efficiency design report: Q1 Energy Efficient Lighting: Q1 Q2 Q3 Q4
	4.4. Energy budget principles for building fabric and services are identified and applied in accordance with standard industry practice.	Insulation for Energy Efficiency: Q1 Q2 Q3 Q4 Q5 Q6 Cost effective energy efficiency measures: Q1 Q2 Activity 3. Prepare an energy efficiency design report: Q1

REQUIRED SKILLS

Required Skill	Task / Question Map
Required skills for this unit are:	
<i>ability to respond to change and contribute to workplace responsibilities, such as current work site environmental and sustainability frameworks or management systems</i>	<i>Communicating with the Builder: Q1 Q2</i>
communication skills to:	
<i>enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand</i>	<i>Engaging Your Client in the Design Process: Q1 Q2 Activity 2. Create a materials board: Q1 Activity 3. Prepare an energy efficiency design report: Q1</i>
read and interpret:	
<i>BCA</i>	<i>Energy Efficiency and the Building Code of Australia: Q1 Q2 Q3 Q4 Q5 Q6 NCC Requirements for thermal efficiency: Q1 Q2 NCC and Climate Zones: Q1 Q2 Climate and House Design: Q1 Q3 Q4</i>
<i>legislation</i>	<i>Legislative and planning requirements for thermal efficiency to the building process: Q3 ACTIVITY: Investigating State Energy Efficiency Building Requirements: Q1</i>
<i>other relevant documentation</i>	<i>ACTIVITY: Interpreting Energy Efficiency Readings: Q1 Q2</i>
<i>use language and concepts appropriate to cultural differences</i>	<i>Engaging Your Client in the Design Process: Q1 Q2 CPCCSV5013A Trainer Guide: Q2</i>
<i>use and interpret non-verbal communication</i>	<i>NCC Requirements for thermal efficiency: Q1 Q2 CPCCSV5013A Trainer Guide: Q2</i>
written skills to:	
<i>develop recommendations and strategies for the implementation of energy efficient design principles</i>	<i>Activity 1. Prepare a concept design for an energy efficient building design project: Q1 Activity 2. Create a materials board: Q1 Activity 3. Prepare an energy efficiency design report: Q1 Assessing a Building Design: Q1 Q2 Q3</i>

<p>report data and findings</p>	<p>ACTIVITY: Electricity Audit Scenario: Q1 Q2 Q3 Activity 3. Prepare an energy efficiency design report: Q1</p>
<p>planning and organisational skills to collect, organise and analyse information</p>	<p>Activity 1. Prepare a concept design for an energy efficient building design project: Q1 Activity 2. Create a materials board: Q1 Activity 3. Prepare an energy efficiency design report: Q1</p>
<p>technological skills to:</p>	
<p>complete documentation and calculations</p>	<p>ACTIVITY: Electricity Audit Scenario: Q1 Q2 Q3 Calculating R-Values: Q1 Activity 1. Prepare a concept design for an energy efficient building design project: Q1 Activity 2. Create a materials board: Q1 Activity 3. Prepare an energy efficiency design report: Q1 CPCCSV5013A Trainer Guide: Q2</p>
<p>enable information gathering and analysis.</p>	<p>ACTIVITY: Electricity Audit Scenario: Q1 Q2 Q3 Climate and House Design: Q3 Q4 Calculating R-Values: Q1 Activity 2. Create a materials board: Q1 ACTIVITY: Interpreting Energy Efficiency Readings: Q1 Q2 CPCCSV5013A Trainer Guide: Q2</p>

REQUIRED KNOWLEDGE

Required Knowledge	Task / Question Map
Required knowledge for this unit is:	
<i>authorities and powers of a building surveyor</i>	<i>The role of a building surveyor: Q1 CPCCSV5013A Trainer Guide: Q4</i>
<i>effects of fossil fuels on the atmosphere</i>	<i>Energy and Greenhouse Gas Emissions: Q3 Q5 Q7 Q8 CPCCSV5013A Trainer Guide: Q4</i>
<i>energy consumption relative to construction processes</i>	<i>Energy and Buildings: Q1 Q2 Q3 Occupant Thermal comfort: Q1 Q2 Q3 Q4 Q5 Q6 CPCCSV5013A Trainer Guide: Q4</i>
<i>greenhouse gas emissions</i>	<i>Energy and Greenhouse Gas Emissions: Q2 Q3 Q4 Q5 Q6 Q7 Q8 Best Practice or Business as Usual?: Q1 Q2 Q3 Q4 CPCCSV5013A Trainer Guide: Q4</i>
<i>impact of construction process on the atmosphere</i>	<i>Sustainability in the Building Industry: Q1 Q2 CPCCSV5013A Trainer Guide: Q4</i>
<i>impacts of national greenhouse strategy and Kyoto protocol on construction</i>	<i>Energy and Greenhouse Gas Emissions: Q1 Best Practice or Business as Usual?: Q1 Q2 Q3 Q4 CPCCSV5013A Trainer Guide: Q4</i>
<i>macro and micro climates</i>	<i>Macro and Micro Climates: Q1 Q2 CPCCSV5013A Trainer Guide: Q4</i>
<i>nature of materials and effect on performance</i>	<i>Insulation for Energy Efficiency: Q1 Q2 Q3 Q4 Q5 Q6 CPCCSV5013A Trainer Guide: Q4</i>
<i>ozone depletion theories</i>	<i>CPCCSV5013A Trainer Guide: Q4</i>
<i>processes for the administration and preparation of documentation</i>	<i>Activity 1. Prepare a concept design for an energy efficient building design project: Q1 CPCCSV5013A Trainer Guide: Q4</i>
<i>processes for the interpretation of reports, working drawings and specifications</i>	<i>Activity 1. Prepare a concept design for an energy efficient building design project: Q1 ACTIVITY: Interpreting Energy Efficiency Readings: Q1 Q2 CPCCSV5013A Trainer Guide: Q4</i>

<i>R values (overall thermal resistance) for construction material</i>	<i>Calculating R-Values: Q1 CPCCSV5013A Trainer Guide: Q4</i>
<i>relevant federal, state or territory legislation and local government policy and procedures</i>	<i>Building Sustainability Rating tools: Q1 ACTIVITY: Investigating State Energy Efficiency Building Requirements: Q1 CPCCSV5013A Trainer Guide: Q4</i>
<i>services design concepts</i>	<i>Home Heating: Q1 Q2 Q3 Heat Recovery & Energy Recovery Ventilation (HRV & ERV): Q1 Q2 Q3 Q4 Q5 CPCCSV5013A Trainer Guide: Q4</i>
<i>site topography.</i>	

CRITICAL ASPECTS

Critical Aspects	Task / Question Map
A person who demonstrates competency in this unit must be able to provide evidence of the ability to:	
<i>comply with OHS regulations applicable to workplace operations</i>	<i>National Code of Practice for Induction Training: Q1 Q2 Q3 Q4</i>
<i>apply organisational management policies and procedures, including quality assurance requirements where appropriate</i>	<i>Activity 2. Create a materials board: Q1</i>
<i>evaluate and report on data, findings, recommendations and strategies for the implementation of energy efficient design principles for at least one building development project and in compliance with the applicable local government authority, relevant legislation and the BCA</i>	<i>Activity 1. Prepare a concept design for an energy efficient building design project: Q1 Activity 2. Create a materials board: Q1</i>
<i>provide reports to appropriate body/individual as determined by the project brief.</i>	<i>Engaging Your Client in the Design Process: Q2 Activity 1. Prepare a concept design for an energy efficient building design project: Q1 Activity 2. Create a materials board: Q1 Activity 3. Prepare an energy efficiency design report: Q1</i>

RANGE STATEMENTS

Range Statements	Task / Question Map	
<i>Design projects requiring review of energy efficiencies include:</i>	<i>evaluation of building designs for the purposes of applying appropriate construction methods to reduce energy consumption.</i>	<i>Zero Energy Buildings: Q1 Q2 Q3 Activity 1. Prepare a concept design for an energy efficient building design project: Q1 Assessing a Building Design: Q1 Q2 Q3</i>
<i>Energy efficiency design principles include:</i>	<i>application and assessment of BCA performance-based solutions</i>	<i>Energy Efficiency and the Building Code of Australia: Q2 Q3 Q4 Q5 Q6 ACTIVITY: Interpreting Energy Efficiency Readings: Q1 Q2</i>
	<i>best practice to conserve energy:</i>	
	<i>appliance usage</i>	<i>Energy and Buildings: Q1 Q2 Q3 Operational Energy: Q1 Q2 Q3 ACTIVITY: Electricity Audit Scenario: Q1 Q2 Q3 Stand-by Power: Q1 Q2 Energy Efficient Appliances: Q1 Q2 Q3 Q4</i>
	<i>building location and orientation</i>	
	<i>choice and product performance</i>	<i>Glazing and Thermal Performance: Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Insulation for Energy Efficiency: Q1 Q2 Q3 Q4 Q5 Q6 Occupant Thermal comfort: Q1 Q2 Q3 Q4 Q5 Q6 Structural Insulated Panel System (SIPS): Q1 Q2 Q3 Q4 In floor (in slab) heating systems: Q1 Q2 Q3 Q4 Energy Efficient Appliances: Q1 Q2 Q3 Q4</i>
	<i>compliance with legislation pertinent to conserving energy</i>	<i>ACTIVITY: Investigating State Energy Efficiency Building Requirements: Q1</i>
	<i>living practices that maximise benefit</i>	<i>Establishing zones in the building plan: Q1 Q2</i>
	<i>climate conditions:</i>	
	<i>climate zones in Australia specified in BCA</i>	<i>Energy Efficiency and the Building Code of Australia: Q1 Q2 Q3 Q4 Q5 Q6 NCC and Climate Zones: Q1 Q2 Climate and House Design: Q1 Q2 Q3 Q4 Q5 Q6 Designing for Your Climate Zone: Q1 Q2 Q3</i>
	<i>micro climates associated with a specific area</i>	<i>Investigating the Building's Orientation: Q2</i>

energy consumption:		
	<i>low energy lighting</i>	<i>Electrical Lighting: Q1 Q2 Q3</i> <i>Energy Efficient Lighting: Q1 Q2 Q3 Q4</i>
	<i>solar hot water systems</i>	<i>Renewable energy :Solar Hot Water Systems: Q1 Q2 Q3 Q4 Q5 Q6</i>
	<i>star rated appliances</i>	<i>Appliance energy efficiency: Q1 Q2 Q3</i>
	<i>utilities and showerhead restriction fittings</i>	
	<i>window coverings and glazing</i>	<i>Glazing and Thermal Performance: Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8</i>
energy efficient construction:		
	<i>construction methods</i>	<i>Designing for Your Climate Zone: Q3</i> <i>Structural Insulated Panel System (SIPS): Q1 Q2 Q3 Q4</i>
	<i>efficient design briefs</i>	<i>Passive Solar Heating: Q1 Q2 Q3</i> <i>Engaging Your Client in the Design Process: Q2</i> <i>Activity 1. Prepare a concept design for an energy efficient building design project: Q1</i>
	<i>geography and topography of site</i>	<i>Solar passive design I: Q1 Q2 Q3 Q4</i>
	<i>location</i>	
	<i>materials used</i>	<i>Embodied Energy in the Built Environment: Q1 Q2 Q3</i> <i>Types of Insulation: Q1 Q2 Q3 Q4 Q5</i> <i>Insulation for Energy Efficiency: Q1 Q2 Q3 Q4 Q5 Q6</i> <i>Calculating R-Values: Q1</i> <i>Phase Change Material: Q1 Q2 Q3</i> <i>Structural Insulated Panel System (SIPS): Q1 Q2 Q3 Q4</i> <i>Vapour Barriers: Q1 Q2</i>
	<i>method of application</i>	<i>Insulation for Energy Efficiency: Q1 Q2 Q3 Q4 Q5 Q6</i>
star rating systems:		
	<i>Building Energy Rating Scheme (BERS) computer model</i>	<i>ACTIVITY: Interpreting Energy Efficiency Readings: Q1 Q2</i>
	<i>First Rate computer model</i>	<i>ACTIVITY: Interpreting Energy Efficiency Readings: Q1 Q2</i>
	<i>National Housing Energy Rating Scheme (NatHERS) computer model.</i>	<i>Building Sustainability Rating tools: Q2</i> <i>NATHERS: Q1 Q2 Q3 Q4 Q5</i> <i>ACTIVITY: Interpreting Energy Efficiency Readings: Q1 Q2</i>