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| UNIT CODE | NAT11429006 |
| UNIT TITLE | Design healthy homes incorporating building biology principles |
| APPLICATION | <p>This unit describes the outcomes, skills and knowledge required to design healthy residential buildings.</p> <p>It requires knowledge of building biology principles to design healthy homes through site selection, passive solar design, ventilation strategies, integrated pest control, water and vapour management, healthy materials selection and energy efficiency.</p> <p>This unit applies to building biologists, builders, architects, draftspersons, building designers and owner/builders who, as part of their occupation or role, are engaged in new construction and renovations.</p> <p>No licensing, legislative or certification requirements apply to this unit at the time of publication.</p> |
| PRE-REQUISITE UNIT | NAT11429005 Assess and recommend healthy building materials |
| COMPETENCY FIELD | 050999 Environmental Studies, nec |
| ELEMENTS | PERFORMANCE CRITERIA |
| Elements describe the essential outcomes of the unit | Performance criteria describe the performance needed to demonstrate achievement of the element. |
| 1. Research and document site data | <p>1.1. Develop a project brief questionnaire to assess client needs and objectives</p> <p>1.2. Collect and record site details including location, zoning, and council/building restrictions</p> <p>1.3. Establish site history, including previous land use and overlays</p> <p>1.4. Investigate proximity to environmental hazards</p> <p>1.5. Analyse weather patterns and microclimate factors affecting the site</p> <p>1.6. Review site features impacting shading, topography and drainage</p> |
| 2. Design healthy home features | <p>2.1 Specify building orientation, passive heating, cooling and cross ventilation features informed by site and climate analysis</p> <p>2.2 Select building materials, construction type and building envelope elements to reduce health risks and maximise air quality</p> <p>2.3 Develop water vapour management strategies to prevent condensation and mould in new builds</p> <p>2.4 Specify mechanical ventilation systems to improve indoor air quality</p> <p>2.5 Provide recommendations for integrated pest management</p> |

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| | 2.6 Incorporate design solutions to minimise exposure to electromagnetic fields | | |
| 3. Report findings of the building site assessment | 3.1. Prepare a professional report summarising site assessment, design rationale, findings, suppliers and recommendations 3.2. Annotate a floorplan, with compass directions, wind path, green connections and a legend of healthy home features 3.3. List key trades, suppliers and consultants needed for healthy home design 3.4. Provide a list of standards, guides or reports for further reading 3.5. Include a disclaimer outlining consultation scope and limitations | | |
| FOUNDATION SKILLS | | | |
| Foundation skills essential to performance are explicit in the performance criteria of this unit of competency. | | | |
| UNIT MAPPING INFORMATION | Code and Title Current Version | Code and Title Previous Version | Comments |
| | NAT11429006 Design healthy homes incorporating building biology principles | NAT10913007 Apply building biology principles to design a healthy home | Equivalent unit Minor amendments to terminology Change title to 'Design healthy homes incorporating building biology principles' |
| TITLE | Assessment requirements for NAT11429006 Design healthy homes incorporating building biology principles | | |
| PERFORMANCE EVIDENCE | <p>The learner must show evidence of the ability to complete tasks outlined in the elements and performance criteria of this unit, manage tasks and contingencies in the context of their role as a Building Biologist. There must be demonstrated evidence that the learner has undertaken an assessment of a site that reflects workplace or simulated conditions and completed the following tasks:</p> <ul style="list-style-type: none"> • Develop a structured questionnaire that identifies client needs, restrictions, health considerations, building use and design preferences • Conduct a detailed site assessment including history, zoning, overlays, climate data and microclimate • Research environmental hazards within a 5 km radius of the site • Document features impacting shading, topography, and drainage using site photos and Google Maps • Apply of Building Biology principles to specify orientation, passive solar heating/cooling, cross ventilation, healthy material choices and water/vapour management features in the proposed design | | |

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| | <ul style="list-style-type: none"> • Design recommendations for integrated pest management • Annotate a floor plan with compass directions, wind paths, healthy home features and a legend • Prepare a professional report summarising the client needs, site analysis findings, design rationale, trades required, suppliers and recommendations consistent with industry standards • Disclaimer outlining the scope and limitations of the assessment and recommendations |
| <p>KNOWLEDGE EVIDENCE</p> | <p>The learner must be able to demonstrate knowledge required to effectively do the tasks outlined in the elements and performance criteria of this unit, manage the tasks and contingencies in the context of working as a Building Biologist.</p> <p>This includes knowledge of:</p> <ul style="list-style-type: none"> • Building terminology • Building Biology principles relevant to healthy design • Health impacts of building materials and their effect on indoor air quality • Site assessment procedures including researching history (e.g., soil contamination, flooding etc) and site-specific pollutants • Zoning, planning and heritage restrictions relevant to residential design • Climate zone analysis including sun path, prevailing winds, local microclimate and seasonal influences on building design decisions • Features that impact drainage issues (e.g., land slope, trees, landscaping features, damp proof course, vapour barriers, sources of water). • Principles and techniques for passive solar heating, cooling, and cross-ventilation including design features, orientation and mechanical ventilation options for allergy sufferers • Management of condensation and mould prevention, including water management and selection of permeable barriers, subfloor and roof ventilation and water proofing practices • Integrated pest management to minimise chemical exposures • Roles of key professionals (e.g., builder, architect, draftperson, pest controller) in the design and construction of a home |
| <p>ASSESSMENT CONDITIONS</p> | <p>Assessment must be conducted in an environment that reflects current industry practice and workplace conditions. Candidates must have access to:</p> <ul style="list-style-type: none"> • Access to a residential block of land or comparable site (e.g. new housing estate/development) • International Institute for Building Biology and Ecology. (2010). Healthy Home Standard. Conventional Construction. <p>Assessor Requirements</p> <p>Assessors must satisfy the requirements outlined in the Standards for Registered Training Organisations (RTOs) 2025 or successor standards and demonstrate current industry skills and knowledge as a Building Biologist, with a minimum of three years' relevant industry experience.</p> |