CPCCBC6007
DEVELOP, PLAN AND IMPLEMENT BUILDING AND CONSTRUCTION ENVIRONMENTAL MANAGEMENT PROCESSES

THEORY EXAM

Participant name	

FOR THE PARTICIPANT

Instructions

- You will complete written questions as outlined on the following pages. You must attempt all questions and provide enough detail in your responses to demonstrate you know and
- It is anticipated that you should complete this assessment within two (2) hours but additional time may be allowed upon negotiation with the Assessor
- You must complete all questions unassisted by the Assessor or other personnel but may refer to reference material as needed. All questions must be answered correctly for a 'Satisfactory' assessment outcome to be awarded.
  - An oral examination may be allowed under certain circumstances, whereby your answers will be documented by another party.
  - Any written questions that are incomplete, or not answered satisfactorily will need to be completed again after further training support.
  - If you answer a question incorrectly but modify your response, put your initials next to the written change (or the Assessor must initial a verbal change).

Resources required

Pen

FOR THE ASSESSOR

Instructions

- Where oral examination has occurred, ensure that this is acknowledged in writing (e.g. FT001 and Assessor Comments)
- All questions must be satisfactorily demonstrated by the Participant for a Satisfactory determination (indicated by an Assessor tick to the right of the question).
- Assessors are to complete marking in pen of a different colour to the Participant.
- If the Participant verbally modifies their response, write in the modified response verbatim and put your initials next to the written change.

ASSESSOR COMMENTS

As necessary, outline:

- Details on reattempts, alternative arrangements or reasonable adjustments made.
- Where a Participant is deemed 'Not Satisfactory', provide recommendations for future training.

Q1. **Describe environmental issues that impact on the building and construction industry and its practices.**

Answer

Should reflect compliance obligations such as: Use of land and materials: Materials selected for building influence the environmental impact of construction. Important factors influencing selection of construction materials are their durability compared to intended life span, lifecycle energy consumption, source and environmental impact of all component materials and processes, recycling potential, and distances required for transportation of component.

Waste: Construction and demolition of buildings contributes 30-40% of the waste produced in Australia. The impacts of landfill disposal includes the release of gasses and emissions through waste decomposition and the transportation of wastes to landfills,

Energy consumption: Energy consumption impacts on the environment through its depletion of non-renewable resources and emission of greenhouse gases. The impact depends to a large extent on the energy source.

Q2. **What is the consequence to persons who unlawfully causes material harm to the environment?**

Answer

Should reflect but is not limited to: If a court is not satisfied a person is guilty of serious environmental harm, it can find the person guilty of material environmental harm A person who unlawfully causes material harm to the environment faces a maximum penalty of a fine of 1665 penalty units ($228,105). If they cause the harm willfully, they face a maximum penalty of a fine of 4500 penalty units ($616,000) or 2 years imprisonment.

Q3. **Why might an environmental impact assessment be required for a construction project?**

Answer

Response should demonstrate an understanding of local planning authority requirements and compliance. Example: The purpose of an Environmental Impact Assessment (EIA) is to ensure that the environmental effects of a proposed development are properly considered. An EIA provides the local planning authority with better information about certain types of projects, enabling them to make a more informed decision about whether permission should be granted and to allow imposition of more appropriate conditions and obligations to mitigate possible negative impacts.

The purpose of the Environmental Impact Assessment study is to establish existing baseline conditions in the project area and to proactively assess the potential impacts and associated impacts of the proposed project on the project area

Q4. **Describe how a construction environmental management plan (CEMP) should specify how construction activities will be managed to avoid negative effects on water quality.**

Answer

Should reflect how an organisation will quantify and measure operational factors affecting water quality. Example: CEMP should specify how construction activities will be managed to avoid negative effects on water quality. It should include methods for managing hard waste, residues, and wastes generated by concrete, brick, and tile work, as well as painting, plastering, and other activities to prevent pollutants from entering the stormwater system. All activities should be timed and staged to reduce time and surface area exposed to water and wind by avoiding soil disturbance.

Controlling water flow into and around the site to ensure that all runoff from upstream is diverted around the site. Flow velocities should be kept as low as possible. Restoration to all disturbed areas as soon as possible.

Q5. **Explain what the embodied energy of a building is.**

Answer

Should reflect but is not limited to: The embodied energy of a building is a calculation of all the energy used to produce the materials that make up the building. It includes the energy used in mining, manufacturing and transporting the materials, as well as the services in the economy that support these processes.

The total embodied energy of a building is the total energy needed for: production of all the materials used in the initial construction (initial embodied energy); production of all the materials used in repairs or renovations over the life of the building (recurrent embodied energy); transport of materials to site and energy used on-site during construction, repairs or renovations.

Q6. **Describe how a construction business can improve the amount of embodied energy in a building.**

Answer

Should reflect but is not limited to: The business can reduce materials with high embodied energy, (unless the materials play a role in reducing operational energy), this may include sourcing local materials to reduce energy for transportation. The business can reuse existing materials when possible, reducing the need for new materials. The business should source and choose new materials that have a high proportion of recycled content. Work with architects and designers who design for a long building life as well as disassembly for ease of reuse and recycling.

Q7. **Describe what is meant by the following steps in the development of an environmental management system.**

Answer

Step	What it means
Define organisation's goals for EMS	e.g. Determine the purpose for an EMS, such as to improve environmental performance, to achieve regulatory compliance or pollution prevention. Provides a goal
Secure management commitment	e.g. Management commitment is needed to achieve budgetary requirements, drives the organisation and should be communicated throughout the organisation.
Select an EMS champion	e.g. The champion should have the necessary knowledge, and project management skills. They should have time to devote to the development process and have management support
Build an implementation team	e.g. Members must have skills in finance, operations and interest, experience or skills to identify and assess issues, opportunities, and existing processes.
Hold kick-off meeting	e.g. to share goals, determine processes and roles
Conduct a preliminary review	e.g. review current compliance and environmental programs/systems against the EMS criteria. Examine the structure, procedures, policies, environmental impacts, training programmes, and other aspects of the organisation
Prepare budget and schedule	Ascertain costs of consultants, software and document for approval. Create a schedule with an achievement date
Secure resources, assistance	Purchase and acquire consultant, software and other resources approved for purchase
Involve employees	Consult workers for information about environmental, issues and the efficacy of current processes. they can assist the project team with the drafting of procedures.
Monitor and communicate progress	Keep track of progress against the goals and communicate it achievements to management. Organise training for workers

Q8. **Describe methods that can be used to gather environmental management information essential to the construction process.**

Answer

Should reflect: consultation with management and workers; accessing and determining information needed from State and local regulatory bodies, may include consultation with external sources. Accessing and reviewing current procedures, instructions, training materials, auditing checklists for onsite compliance.

Q9. **Describe methods that can be used to monitor the effectiveness of environmental management actions essential to the construction process.**

Answer

Should reflect: consultation with workers, use of monitoring devices such as air monitors, noise monitors, emission monitors, Regular, routine review of updated procedures, instructions, training materials, auditing checklists for onsite compliance, review of budget

Q10. **Why is it important to have appropriately qualified personnel available to deal with environmental issues?**

Answer

Should reflect but is not limited to: Because these people have the qualifications and skills to recognise environmental issues and concerns, what has lead to the issues and appropriate, controls or reporting that is required

Q11. **What insurance considerations must be included when budgeting for environmental liabilities?**

Answer

Should reflect but is not limited to: Traditional liability insurance will not generally provide cover for potential environmental liabilities such as pollution. It is worth making enquiries and organising insurance for things such as accidental and gradual pollution, remediation costs for pollution emanating from the insured locations, including for remediation costs for claims from government agencies for pollution emanating from the insured locations as well as Third party coverage for bodily injury or property damage, and coverage for liability to third parties for costs for pollution emanating from the insured locations. Generally insurance companies with a focus on the construction industry can assist with this.

Q12. **Describe how you would manage the environmental control system for quality at your construction site.**

Answer

Should reflect: Consult with workers and review relevant policies and procedures to ensure these comply and align with the environmental system and legislation. Undertake internal audits to review the environmental control systems. Action any non-conformances. Modify systems in the event of legislative changes or new technology. Provide workers with adequate and ongoing training.

Q13. **Explain methods you can apply to ensure workers are trained to apply environmental management processes and practices.**

Answer

Should reflect but is not limited to: Include environmental practices in daily pre-start meetings; monitor adherence to instructions, procedures and changed workplace practices. Organise specific training meetings. Engage the support of supervisors; Introduce a rewards system

Q14. **Clarify what you would include in organisational policies for environmental management.**

Answer

Should reflect but is not limited to: The environmental policies would address how the organisation manages and monitors its impact on the environment – both in its own operations and those of its supply chain. Policies should cover use of energy and water, prevention of pollution, waste and recycling, and use of chemicals. As well as specific targets on reducing impact, the policy should also cover broader approaches to improving the environment such as changing work cultures, outreach and consumer behaviour. The policy would include; a commitment for continual improvement; a commitment to comply with relevant legal and other requirements; and provide the framework for setting and reviewing environmental objectives and targets.

Q15. **Describe what you would include in organisational procedures for environmental management.**

Answer

Should reflect but is not limited to: System monitoring cycles and sampling such as for water, air and soil. Waste management auditing periods and materials to be monitored. Site inspection procedures including regularity documentation as well as recording and storing of documentation. Inspections should include: waste disposal and recycling facilities, bulk and chemical storage areas to confirm these are sealed and bunded to prevent leaching of products onto the soil or waterways. Erosion and sediment control should be checked to confirm this in in place and functioning as required

Q16. **Explain how you monitor and maintain the agreed expenditure for environmental management compliance.**

Answer

Should reflect: Monitoring all expenditures for measures for environmental protection of a company as well as those for contractors working on the companies behalf to prevent, reduce, control and document environmental aspects, impacts and hazards, as well as disposal, treatment and clean-up expenditure. Monitoring of the workplace spreadsheets required to determine expenditure for changes and determining where these changes occur and what actions are required to minimise the costs. Consistent communication with management and finance regarding costs and expenditure increases when these occur.

Q17. **Why is it good practice to circulate policy guidelines and obligations within the organisation and obtain sign-off by staff, employees and contractors?**

Answer

Should reflect: This is an effective method of asking for feedback. Workers, contractors and suppliers should receive a copy of your environmental policy as part of your environmental management system. Any environmental issues at the site should also be communicated to contractors. Contractors should be included in training sessions. A brief introduction to business procedures and requirements, as well as a presentation highlighting environmental issues on site, could be included.

A request that both workers and contractors sign a form acknowledging receipt of the information, indicates who should have read the guidelines and related obligations.

Q18. **Describe methods used when monitoring worker and contractor compliance with environmental policy.**

Answer

Should reflect but is not limited to: Development of procedures that track the environmental management system's overall effectiveness and mechanisms that keep track of goals and targets. Reporting and management responsibilities must be clearly defined and the procedures and practices that support your environmental management system must be reviewed regularly.

Integrating the environmental management system into other management processes, such as health and safety and quality control, is also a good idea. It simplifies day-to-day management and aids in the communication of policies to employees. Performance reviews and one-on-one meetings can be organised for individuals.

Q19. **Describe how plant and equipment maintenance can reduce environmental impacts and costs.**

Answer

Should reflect but is not limited to: By adopting good practices and strategies, waste, emissions, energy consumption, and risks can be reduced, while improving performance, compliance, and reputation Preventative maintenance involves inspecting, servicing, and repairing your equipment regularly, according to a planned schedule and based on its condition and usage. This can help to avoid unplanned downtime, reduce repair costs, extend the lifespan of the equipment, and prevent leaks, spills, and malfunctions that can harm the environment. This will also impact on energy efficiency when it involves using less energy to perform the same or better tasks, by optimising your equipment, processes, and systems. This can help to lower energy bills and reduce greenhouse gas emissions.

Q20. **Dealing with contaminated land is a specialised professional area which often requires a range of technical expertise. Who should be engaged to assess contaminated land? Explain your answer.**

Answer

Should reflect: An suitably qualified person. A suitably qualified person (often a contaminated land consultant) is a professional that has the necessary qualifications and experience to assess contaminated land and ensure that risks to human health and the environment have been appropriately managed. A suitably qualified person must have qualifications and experience relevant to the work being undertaken and must be a current member of a professional organisation prescribed under Schedule 14 of the Environmental Protection Regulation 2008.

Q21. **What is a risk management strategy?**

Answer

Should reflect but is not limited to: A risk management strategy is a method for identifying, assessing, and managing structured and consistent risk. It incorporates updating and reviewing the assessment regularly in light of new developments or actions that are taken. A risk management strategy can be created and implemented by even the smallest groups or projects or incorporated into a multi-site international Organisation's complex strategy. The process of evaluating and identifying the risks that you face is known as risk assessment. By assessing risks, you can be proactive in identifying areas where there is uncertainty about events or outcomes and steps that can be taken to protect the organisation, its people, and its assets.

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DEVELOP, PLAN AND IMPLEMENT BUILDING AND CONSTRUCTION ENVIRONMENTAL MANAGEMENT PROCESSES

WORKBOOK

Participant name	

FOR THE PARTICIPANT

Instructions

- You will complete written activities as outlined on the following pages. You must attempt all questions and provide enough detail in your responses to demonstrate your knowledge.
- The timeframe for these tasks will be established by your Assessor or Training Provider. Additional time may be allowed upon negotiation with the Assessor.
- You must complete all questions unassisted by the Assessor or other personnel but may refer to reference material as needed. All questions must be answered correctly for a 'Satisfactory' assessment outcome to be awarded.
  - An oral examination may be allowed under certain circumstances, whereby your answers will be documented by another party.
  - Any written questions that are incomplete, or not answered satisfactorily will need to be completed again after further training support.
  - If you answer a question incorrectly but modify your response, put your initials next to the written change (or the Assessor must initial a verbal change).

Resources required

Pen

FOR THE ASSESSOR

Instructions

- Where oral examination has occurred, ensure that this is acknowledged in writing (e.g. FT001 and Assessor Comments)
- All questions must be satisfactorily demonstrated by the Participant for a Satisfactory determination (indicated by an Assessor tick to the right of the question).
- Assessors are to complete marking in pen of a different colour to the Participant.
- If the Participant verbally modifies their response, write in the modified response verbatim and put your initials next to the written change.

ASSESSOR COMMENTS
As necessary, outline: • Details on reattempts, alternative arrangements or reasonable adjustments made. • Where a Participant is deemed 'Not Satisfactory', provide recommendations for future training.

NOTE

At times, you will be provided with a specific business context to which you must respond, otherwise it is anticipated that you will use a workplace of your choosing (your own, or hypothetical) to provide the context to the task.

At all times, the responses in your assessment must reference **Australian** (Queensland or Federal) documentation, including legislation, regulations, codes of practice, standards and guidance publications.

ACTIVITY 1

Use the internet to access State Code 25: Development in South East Queensland koala habitat areas.

Read and summarise how developers must address the requirements relevant to development in a mapped koala habitat.

e.g. development must be designed and constructed in a manner that:

- avoids removing vegetation between highly connected patches of mapped koala habitat area; and
- provides corridors to facilitate koala movement in undeveloped areas to improve connectivity.

If a development proposes to remove habitat between highly connected koala habitat areas, corridors should be identified to mitigate the impact of that removal and ensure retained koala habitat areas are connected.

- corridors should be as wide as possible to function effectively;
- the minimum corridor width should be guided by the home range size of koalas using it;
- for territorial species, (e.g., male koalas) the width should be greater than one home range size to avoid an
  - individual preventing others from using the corridor;
  - if the corridor is shorter than one home range size, the corridor may be narrower than the above-mentioned
  - widths;
  - longer corridors should be wider to ensure it contains sufficient resources for koalas to move and rest over
  - extended periods while they travel and support multiple individuals using the corridor at the same time; and
  - streams and rivers form useful locations for corridors; however, the corridor should be wide enough to include

  continuous strips of flood free land that supports areas and habitat suitable for koala movement.

Development applications that are proposing to impact connectivity between highly connected patches of mapped koala habitat areas must be accompanied by a report prepared by a suitably qualified ecologist that demonstrates how connectivity will be maintained.

Satisfactory Outcome ☐

ACTIVITY 2

Use the internet to access the information sheet from the Environmental Protection Act 1994 regarding Building work under the noise standard and respond to the following:

a) Who administers or enforces the noise standard?
b) What restrictions apply to construction work relevant to noise standards?

a) Who administers or enforces the noise standard?

e.g. Council is usually responsible for enforcing the noise standard unless the building work is being carried out by a
State or local government entity or as an environmentally relevant activity administered by the State

b) What restrictions apply to construction work relevant to noise standards?

e.g. Building work that causes noise that can be clearly heard by an individual who is an occupier of an affected building can be carried out on a business day or Saturday between 6.30am and 6.30pm.
It is an offence to carry out building work that causes an audible noise at an affected building outside these hours. That does not mean that building work is restricted to those hours. Building work can be conducted outside these hours provided it does not cause an audible noise at an affected building.

Satisfactory Outcome ☐

ACTIVITY 3

Access Matters of National Environmental Significance: Significant impact guidelines 1.1 and respond to the following:

a) List nine (9) matters of national environmental significance, protected by the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).
b) Describe what a significant impact is.

a) List nine (9) matters of national environmental significance, protected by the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

e.g.

1. World heritage properties
2. National heritage places
3. Wetlands of international importance (often called 'Ramsar' wetlands after the international treaty under which such wetlands are listed)
4. Nationally threatened species and ecological communities
5. Migratory species
6. Commonwealth marine areas
7. The Great Barrier Reef Park
8. Nuclear actions (including uranium mining)
9. A water resource, in relation to coal seam gas development and large coal mining development

b) Describe what a significant impact is.

e.g. a significant environmental impact means the anticipated changes in the natural or built environment, resulting directly from an activity, that can have adverse effects on the air, land, water, fish, and wildlife or the inhabitants of the ecosystem which necessitates planning of relevant measures in order to avoid or to reduce, to compensate for, or to liquidate consequences of such change. Significant impacts can be direct, indirect and cumulative impacts.

Satisfactory Outcome ☐

ACTIVITY 4

Search appropriate websites to determine licences, permits and approvals your company must have to construct a residential building in the suburb of East Brisbane.
List each of these below.

List of licences required:

e.g. Appropriate builder licence
general construction induction white card for all site attendees
high risk work (HRW) licence for those engaged in operation of cranes and hoists, dogging and rigging work, driving a forklift truck, erecting or dismantling scaffolding
Drivers licence and vehicle registration
plumbing license, gas fitting license, electrical licenses held by contractors

List of permits and approvals required:

e.g. parking permit may be needed
approval to clear or work near protected trees and vegetation on private property
approval to conduct work on public property, such as roads and footways, as part of construction work or business operations.
May require work on heritage properties permit
May require zoning approvals
Removal of asbestos
Disposal of waste

Satisfactory Outcome ☐

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PRACTICAL ASSESSMENT

Participant name	

FOR THE PARTICIPANT

Instructions

- The tasks outlined on the following pages will require performance in normal workplace activities, as a result of a structured activity set by an observer in the workplace or a simulated activity set by your Assessor/Observer.
- The timeframe for these tasks will be established by your Assessor/Observer in consideration of location conditions and industry requirements.
- You must complete all tasks unassisted by the Assessor or other personnel, unless the steps note this assistance.
- You must attempt all tasks (and itemised steps) for a 'Satisfactory' assessment outcome to be awarded.
    - For any observation conducted that is incomplete, or without satisfactory performance, the observation will need to be completed again after further training support.

FOR THE ASSESSOR/OBSERVER

Instructions

- The following observation record should be used to judge and record your observations of the Participant as they complete the task(s) set. You must record your observations of the Participant's performance.
    - For each occasion, indicate the task performed and whether it was a simulation or workplace-based task.
        - Any simulated assessment must ensure the Participant still performs under workplace conditions which reflect industry standards.
    - In the comments, provide clear detail regarding the task that the Participant was required to do (e.g. PPE used, materials handled, attachments connected, plant types).
- All steps must be satisfactorily demonstrated by the Participant for a 'Satisfactory' determination (indicated by an Assessor tick to the right of each itemised step, or an Observer tick to the right of each itemised step, and confirmation by an Assessor in the Assessor Comments).
    - Where you have determined that one or more task steps have not been satisfactorily demonstrated, provide the Participant with additional support and outline details of such assistance in the Assessor/Observer Comments. Allow the Participant two (2) further opportunities to demonstrate the task again to allow an opportunity for a 'Satisfactory' assessment outcome to be achieved.
    - If after three (3) attempts the Assessor determines that the Participant cannot demonstrate the required steps, a 'Not Satisfactory' outcome is to be determined.

TASK OUTCOME					
Task	**Date**	**Task Type (Tick)**	**Location**	**Task outcome (Tick)**	
				Satisfactory	Not Satisfactory
Task 1		☐ Workplace ☐ Simulation		☐	☐

ASSESSOR COMMENTS: GENERAL
As necessary, outline: • Details on reattempts, alternative arrangements or reasonable adjustments made. • Where a Participant is deemed 'Not Satisfactory', provide recommendations for future training.

ASSESSOR COMMENTS: PRACTICAL TASK 1	
☐ Individual student (as named on cover page) ☐ Multiple students [☐ All from Attendance Report, ☐ Specific students involved – identify students]	
Task	**Provide detail**
1.3A. 1.3B.	Specify management practices implemented that result in a high level of conformance to meet environmental obligation: e.g. environmental training included in induction and toolbox talks, management buy in, routine monitoring of processes and procedures
1.3C.	Specify equipment and data accessed to extract information to analyse for management purposes. e.g. reports and records accessed using PC and spreadsheets, accessed the internet to determine requirements
1.3D. 1.4B.	Specify quality assurance training and practices applied on a daily basis: e.g. daily pre-start talks discussing environmental protection practices including the need to undertake equipment pre-start checks, erosion and sediment controls, daily start times and dust management
1.3E. 1.5A.	Specify environmental benchmarks that were monitored routinely: e.g. energy use, water management, start times, dust controls/ site watering down, tree protection
1.4C. 1.4D.	Specify how policy guidelines and obligations were circulated within the organisation: e.g. sent individually by email; posted to memo board
1.4C.	Specify how sign-off was achieved by employees and contractors regarding policy guidelines: e.g. sign-off required attached to WMS and presented during pre-start meeting
1.5B.	Specify feedback systems developed and implemented: e.g. routine discussion during pre-start meetings. Formal feedback accepted via email or reporting such as equipment checks and hazard reports.