



Rethinking safety through
INCLUSION
+
WELLBEING

ENVIRONMENT

SYSTEM REQUIREMENT

19/07/2023

LIFECYCLE PERSPECTIVE

PURPOSE AND SCOPE

This System Requirement outlines the Laing O'Rourke process for taking a lifecycle perspective to business activities. A lifecycle perspective (or lifecycle approach) means understanding the relevant stages of a product or service system, from raw material acquisition or generation from natural resources to final disposal. This System Requirement predominantly covers the Laing O'Rourke activities over which we have reasonable influence and control.

1.0 CONTEXT

The lifecycle perspective relates to the environmental aspects associated with each stage of project delivery which can be divided into the following five broad categories:

- Work winning (estimating and cost planning, business development, bids and proposals)
- Commercial (head and subcontract formation)
- Engineering (feasibility studies, concept design, front-end engineering design, detailed design)
- Procurement (supply and delivery of goods and services)
- Delivery (construction, commissioning).

When applying a lifecycle perspective Laing O'Rourke considers the:

- Stage in the lifecycle of the product or service
- Degree of control the business has over the lifecycle stages
- Degree of influence it has over the lifecycle
- Life of the product
- Ability to influence the supply chain.

At each stage of project delivery Laing O'Rourke determines aspects and opportunities to influence lifecycle outcomes.

2.0 WORK WINNING

Environmental obligations for each project must be identified during the work winning phase. This includes a review of environmental risks and opportunities and is described within the risk and opportunities element of the Environmental Management System (EMS).

The tender team is required to assess Laing O'Rourke's ability to meet the environmental obligations. Outcomes of the review and assessment of the environmental obligations are to be documented in the environmental risk assessment and Risk and Opportunity Register. The contract risk profile must also document the assessment accordingly.

Environmental obligations and Laing O'Rourke's capability to meet these obligations and client-specific requirements are to be provided with the tender submission as necessary. This may include the need to highlight risk aspects that cannot be effectively managed with the current available information.

The requirements for environmental resourcing whether this is plant, equipment, materials or personnel must be assessed and documented in the tender outputs. The tender phase organisational chart must include the proposed environmental resources.



3.0 COMMERCIAL

Environmental requirements are included in all project contracts. These requirements can include contract-specific issues and environmental approvals and conditions. These must be considered and incorporated into the project's environmental documentation including but not limited to environmental management plans (EMP), sustainability management plans, supply chain agreements, and assurance regimes.

Changes, improvements or modifications to these requirements are considered opportunities to improve environmental outcomes. Laing O'Rourke's ability to influence changes varies from project to project. Where relevant and possible, projects may investigate changes to these requirements to improve environmental outcomes.

4.0 ENGINEERING

Lifecycle opportunities are considered early in the design phase. The ability to influence design and associated lifecycle aspects varies from project to project and is related to the contract model. Where possible, the following aspects are to be considered during the design phase:

- Materials selection including the availability of environmental product declarations
- Specified materials, particularly their end-of-life processes and potential disposal
- Materials specifications including recycled materials or materials that can be reused with minimal or no additional processing
- Balancing capital expenditure with operational expenditure
- Value engineering opportunities to reduce materials quantities
- Opportunities to reduce energy use and water consumption.

These are to be considered and documented in design outputs including drawings, specifications and design reports as necessary.

5.0 PROCUREMENT

Procurement activities associated with the lifecycle perspective apply to suppliers, subcontractors and consultants. Potential supply chain partners are to be assessed during their respective tender phases. Environmental requirements and obligations linked to the lifecycle perspective are to be included in agreements and subcontracts. Project-specific sustainability requirements are to be incorporated into agreements and subcontracts.

6.0 PRODUCTION

This applies to supply chain products that are procured from or manufactured off-site. Supply chain partners who provide products are to be assessed during the tender phase. The assessment will include evidence of the application of a certified EMS, providing details of their approach to assessing, communicating and evaluating environmental risks relevant to their production activities. The assessment is to be used as necessary in the supply chain decision-making process.

7.0 DELIVERY

Environmental aspects associated with minimising construction environmental impacts are to be documented in the site-specific Environmental Management Plan (EMP).

Site facilities influenced by Laing O'Rourke will be established to minimise the consumption of energy through demand and supply measures. Facility water consumption reduction measures will be implemented and where feasible, water capture and reuse measures established. Specific measures for site facilities are to be documented in the CEMP.



8.0 END OF LIFE AND DECONSTRUCTION

Construction waste end of life is to be included in the project's waste management strategy in the CEMP. The Laing O'Rourke Sustainability Roadmap provides targets for minimising construction waste impacts. Projects will maximise opportunities to divert construction waste from landfill. Records of waste management activities including the rates of diversion of waste from landfill will be maintained.

Project-specific waste targets from client specifications or sustainability requirements are to be included in project documentation and supply chain contracts and agreements.

Where Laing O'Rourke has the ability to influence the project's design outcomes and materials selection, waste minimisation during the deconstruction and disassembly will be considered and documented in design outputs and handover documentation.

9.0 LIFECYCLE ASSESSMENT

Lifecycle assessment is a tool to evaluate the environmental/sustainability aspects and impacts of a product, service or process through its entire lifecycle. The assessment starts with the extraction of raw materials, manufacturing and product development to end of use and disposal.

In addition to the lifecycle approach outlined above, Laing O'Rourke will use recognised lifecycle assessment tools on our projects as necessary and in accordance with client-specific requirements.

10.0 PLANS, FORMS AND TEMPLATES

For relevant plans, forms and templates see the Laing O'Rourke HSEMS at www.lorhsems.com.