Title	**Design the layout and components for a resource recovery facility**		
Level	**5**	**Credits**	**25**

Purpose	People credited with this unit standard are able to: develop and present a design for a resource recovery facility; select and design components for a resource recovery facility; and implement a design for a resource recovery facility.

Classification	Resource Recovery > Resource Recovery Operations

Available grade	Achieved

Guidance Information

1 All work practices must comply with:
Building Act 2004;
Hazardous Substances and New Organisms Act 1996;
Health and Safety at Work Act 2015;
Resource Management Act 1991;
local authority requirements applicable to the location.

2 Range
Evidence is required of developing and implementing one design in either an urban or rural context. The design may be for a new or existing site.

3 Performance of all Outcomes should be assessed within the constraints normally applicable in a commercial environment.

4 For this unit standard, the design project excludes the gaining of mandatory approvals such as resource and land use consents, civil engineering work, traffic management and planning, and public consultation processes.

5 Definitions
Containers may be of any shape or size appropriate for the commodities they will contain. They may take one or more resources. They may be fabricated from one or more materials.
Design consists of a series of delineated stages that are inherent in the process of problem solving from inception through realisation to evaluation. The general format consists of: research, development, analysis, presentation, realisation, evaluation.
Resource recovery facility refers to a designated area such as a recycling centre, resource recovery park, or transfer station where materials are diverted from the waste stream. These facilities accept materials from the public and/or commercial collections.

Special waste refers to wastes that cause particular management and/or disposal problems and need special care. Examples are: used oil, tyres, end-of-life vehicles, car batteries, electronic goods hazardous materials.

Outcomes and performance criteria

Outcome 1

Develop and present a design for a resource recovery facility.

Performance criteria

1.1 The design is developed and based on analysis and comparison of information about similar facilities.

Range excludes – researching and gathering the information; information includes but is not limited to – resource types, resource quantities, options, issues, costs, benefits, priorities.

1.2 The data for the design is confirmed and/or updated in relation to current community requirements, and is validated from local and/or regional authority records.

Range data includes but is not limited to – resource quantities, resource types, traffic volumes, special waste, nuisance factor, seasonal fluctuations, public access.

1.3 The development of the design takes account of the geography of the site in terms of minimising the facility's impact on the environment and the environment's impact on the facility.

Range site topography, prevailing weather conditions, surrounding natural environment.

1.4 The development of the design takes account of the current infrastructure and proposed developments in relation to determining access to the facility, screening, and placement of buildings and amenities.

Range infrastructure includes but is not limited to – land use, services, roading.

1.5 The design meets client requirements and conforms to regulatory and statutory requirements, and national policies on sustainability and waste reduction.

Range client requirements include but are not limited to – time, skills, budget, processes, commodities;
regulatory requirements may include but are not limited to – toxicity, energy conservation, noise, signage.

1.6 The design presentation is clear and concise and conveys the function and appearance of the proposed facility.

Range function includes but is not limited to – signage, buildings, heavy equipment, access, storage, traffic flow, surfacing.

1.7 The design identifies preferred options for resource recovery issues that conform with waste strategy policies, and justifies them with supporting data.

Range data may include but is not limited to – calculations, charts, sketches, technical specifications, drawings, construction cost estimates, manufacturer's specifications, safety requirements; evidence is required of three options.

1.8 The design includes environmental management planning in accordance with legislation and territorial authority requirements.

Range planning includes but is not limited to – storm water disposal, hazardous goods storage, containment.

1.9 Report is prepared and presented in accordance with the requirements of the facility owner and/or operator.

Outcome 2

Select and design components for a resource recovery facility.

Range components may include but are not limited to containers and structures that are – for a single commodity, for multipurpose use, open, covered, lockable, purpose-built, recycled;
resource types – liquid, solid, hazardous, bulk;
evidence is required of five components that cater for two resource types.

Performance criteria

2.1 The component is selected and/or designed to meet the requirements of the commodity in terms of the type and physical properties of the commodity.

Range physical properties include but are not limited to – size, shape, mass, material.

2.2 The component is selected and/or designed to meet the requirements of the commodity in terms of expected quantities to be received, and storage time.

2.3 The component is selected and/or designed to meet the requirements of the commodity in terms of handling and storage.

Range handling may include but is not limited to commodities that are – fragile, light, heavy, bulky;
storage may include but is not limited to – shelf life, protection from weather.

2.4 The component is selected and/or designed to meet requirements for handling in terms of the equipment available.

Range handling includes but is not limited to – receipt, lifting, sorting.

2.5 The component is selected and/or designed to meet operational and budget requirements in terms component size, shape, strength, and material.

2.6 The design provides fabrication instructions that will ensure the component can be made to design requirements.

Range fabrication may include – in situ, in house, contracted out.

Outcome 3

Implement a design for a resource recovery facility.

Range design may be a modification to an existing facility;
facility – urban or rural.

Performance criteria

3.1 Implementation ensures the safety of staff and facility users in accordance with legislation and company procedures.

Range includes one of – hazardous substance, special waste.

3.2 Implementation ensures that staff skills meet requirements for operation and that staff training conforms to legislation.

3.3 Implementation ensures that facility users are advised of where and how to place resources for recovery.

Range may include but is not limited to – leaflet, signage, staff assistance.

3.4 Evaluation of implemented functions is supported by statistical data.

Range functions include but are not limited to – access, signage, buildings, equipment, storage.

This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	26 January 2007	31 December 2025
Rollover and Revision	2	28 March 2019	31 December 2025
Review	3	24 April 2025	31 December 2025

Consent and Moderation Requirements (CMR) reference	0014

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.