Draft 0.1

This is our work-in-progress update to CPCCBC5009A Identify services layout and connection methods to medium rise construction projects: https://training.gov.au/Training/Details/CPCCBC5009A.

We are working with industry experts to ensure the updated unit:

- meets current and anticipated industry needs
- complies with current Standards for Training Packages
- is written in clear understandable English.

Information on our training package review and development process is available here: http://www.artibus.com.au/project-stage.

Summary of changes from current endorsed unit

Re-templated to meet Standards for Training Packages 2012.

Sequenced Elements and Performance Criteria.

Specified what and how performance is demonstrated in Performance Evidence.

Captured critical Range Statement items and included industry relevant knowledge in Knowledge Evidence.

Stated mandatory conditions and specific requirements for assessment.

CPCCBC5009
Identify services layout and connection methods to medium rise construction projects

Application

This unit of competency specifies the outcomes required to identify services requirements, layouts and connections from project drawings and specifications for a range of medium rise and wide span commercial projects. It includes identifying and evaluating differing layouts for services to comply with building codes, regulations and standards.

This unit applies to builders, project managers and related construction industry professionals responsible for determining services layouts using design concepts and principles relating to installations.

Prerequisite Unit

Nil.

Unit Sector

Construction.

Elements and Performance Criteria

1. Evaluate layout for water storage supply.	1.1	Sketch layout for residential water supply and connection from a town supply or tank storage to comply with relevant building regulations and standards.
	1.2	Document single and two-stage pumping systems used to maintain water levels in storage tanks.
	1.3	Identify and address limitations of multi-function and single function services connected to water storage tanks.
2. Evaluate layout and methods of sewerage and drainage disposal.	2.1	Sketch sewerage connection and layout in accordance with relevant building regulations and standards.
	2.2	Assess number of fixtures and building type to determine stack type.
	2.3	Identify fixture units.
	2.4	Determine appropriate connection methods of main drains to local authority sewers against relevant building standards.
	2.5	Assess disposal of sewerage from fixtures situated below the level of the local authority sewer.
	2.6	Monitor collection, treatment and disposal of prohibited discharges for non-domestic buildings.

3. Assess layout of mechanical ventilation.	3.1	Identify and sketch methods of mechanical ventilation and air distribution.
	3.2	Check mechanical ventilation and air distribution system design layout is appropriate to the building design and complementary to other services.
4. Evaluate the range of hot water systems.	4.1	Evaluate operating principles of various types of hot water systems.
	4.2	Select suitable hot water system according to accepted and agreed requirements and specifications.
5. Evaluate lighting for a range of situations.	5.1	Identify roof construction used and outline methods for appropriate daylight transmission.
	5.2	Compare various service situations with methods of artificial lighting used.
6. Determine compliance of fire protection.	6.1	Identify authorities involved in plan perusal and site inspection for the various building classifications.
	6.2	Identify requirements for sprinkler systems and fire hoses for the various building classifications.
	6.3	Address fire detector and alarm systems and the application of fire doors.
	6.4	Identify extinguishing agents and their applications.
7. Plan installation of electrical and electronic services.	7.1	Identify electrical supply connection to site and comply with appropriate authority.
	7.2	Implement electrical design and provision for services.
	7.3	Identify and outline electronic cabling, type of service, categories of cabling, layout of equipment, safe guards, access for maintenance, repair and extensions.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- technology skills to:
  - use digital tools and devices to communicate and collaborate effectively with others
  - use equipment and programs to access, extract information and develop relevant documentation

Unit Mapping Information

Supersedes and equivalent to CPCCBC5009A Identify services layout and connection methods to medium rise construction projects.

Links

Companion Volume Implementation Guide: to be added.

Assessment Requirements for CPCCBC5009 Identify services layout and connection methods to medium rise construction projects

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by determining, documenting and conveying layout and connection methods to a range of services appropriate to medium rise and wide span commercial constructions. Service layout and connection methods may extend and be demonstrated over several projects and must include:

- water supply
- sewerage and drainage disposal
- mechanical ventilation and air distribution
- hot water systems
- natural and artificial lighting
- fire protection
- electrical and electronic.

In doing this, the candidate must:

- apply design concepts and principles relating to performance of service installations
- identify typical faults and problems and take remedial action
- comply with National Construction Code and Australian standards.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- relevant government building legislation, codes and standards
- National Construction Code
- project drawings, details and specifications
- organisational work practices and procedures
- manufacturer specifications and installation instructions
- properties, characteristics and limitations of specified materials, products and components
- service installation terminology and definitions
- water supply:
    - single and two-stage pumping for multi-function and single function
    - tank storage supply relative to the public water supply and reservoir heights
    - town supply
- sewage connection and layout:
    - graded or vertical discharge pipes
    - inspection shafts and overflow relief gullies (ORGs)
    - local authority sewerage drainage system

    - septic or biochemical treatment unit
- methods of mechanical ventilation:
    - air conditioning applications
    - air distribution, including mechanical ventilation requirements for enclosed car parks
    - air filtration, including air filters, ducting and main filter types
    - mechanical ventilation
- hot water system:
    - area to be serviced
    - energy sources available
    - height of installation
    - number of outlets
    - type of occupancy
    - type of system
- lighting:
    - emergency lighting
    - natural and artificial lighting
- electronic cabling factors:
    - access for maintenance, repair and extension
    - categories of cabling:
        - data
        - lift controls
        - power supplies
        - telecommunications
    - layout of equipment:
        - computers
        - telephones
    - safe guards
    - type of service

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Candidates must be provided with:

- relevant state and territory building legislation codes and standards
- National Construction Code
- manufacturer's specification and installation instructions
- organisational policies and procedures
- project plans, details and specifications
- sufficient equipment and materials to identify services layout and methods of connection.

Links

Companion Volume Implementation Guide: to be added.