

DCO5.005 Services for Construction Projects Co-taught with DAT5.104 Building Services Assessment 2

Weighting

35%

Learning outcomes

- 1 Identify environmental impacts on building services.
- 2 Evaluate design and construction impacts that may apply by the installation of services.
- 3 Explain principles of coordination, placement, and reticulation of services for buildings.
- 4 Research and apply legislative requirements relevant to services in a building to three levels.

Instructions

Complete and submit your assessment according to the WITT Te Pūkenga's [library webpage](#). This includes information on academic integrity, formatting, word limits and referencing.

- Include your name, student number and the assessment number.
- Number your pages.

Submission

- Submit your assessment in one file
- Submit your work through your iQualify course.
- Emailed assessments will not be accepted.
- You will receive an automated notice advising you of your successful submission.

By submitting your assessment, you confirm that it is your own, original work.

Assessment instructions

Read the following scenario and complete the tasks that follow.

Scenario

A client has come to you with a proposal to convert a shop into a café. The shop is in an urban area. It is third in a row of seven single-level commercial buildings built in the late 1930s.

A copy of the existing shop layout (Appendix 1) and proposed café (Appendix 2) is attached.

Existing

- The existing electrical supply meter and distribution facilities provide for up to 120,000 kWh annually.
- The lighting throughout the premises is 100% incandescent.
- The shop has existing old data and communications systems that were in use until the business was sold.

Proposed

- The café will have a total floor area of 100 m² and will provide seating for up to 20 patrons and employ six staff.
- The café must comply with fire protection and safety regulations.
- The client needs to be able to order supplies online without disrupting the phone line.
- The client will need EFTPOS to allow customers to pay at the table.
- The client would like to reduce energy costs.

Note you do not need to cover HVAC in this assessment. The client has a family member who will be providing HVAC in a separate contract.

Task overview

Choose a specific urban area anywhere in Aotearoa, New Zealand as the location for this assessment.

Prepare a report for the client to consider prior to applying for building consent. Your report will consist of Tasks 1-3.

Your report will be based on your findings and will detail the components required, where they should be installed and any ongoing regulatory requirements.

Include annotated plans with labels and explanatory notes in your report to support your recommendations where relevant.

Task 1: Evaluation of the premises

- Identify existing systems.
- Evaluate how well existing systems meet the regulatory requirements.
- Identify system components that need upgrading.
- Provide a brief summary of recommendations based on findings.

(Word count guideline: 500 words)

(35 marks)

Task 2: Electrical and communications systems

- Identify which electrical and communication systems need to be upgraded.
- Explain the regulatory requirements for any system upgrade.
- Explain the connection and installation requirements for the upgraded devices/systems.
- Identify the location of upgraded **communication devices**.

(Word count guideline: 250 words)

(15 marks)

Task 3: Fire

- Recommend a suitable fire protection and fire exit system to the client. Include marked up drawings to support your answer.
- Provide explanations, referring to the regulatory requirements where applicable, to support your recommendations.

Note: Hand-sketched markup of the drawings provided in the appendices, using a ruler, is acceptable for this assessment.

- Identify requirements of any specified system(s).

(Word count guideline: 1200 words)

(50 marks)

Note: Submit your answers as ONE file. There are free, online tools which can convert word to pdf and combine multiple pdfs to give one file for submission. For example,

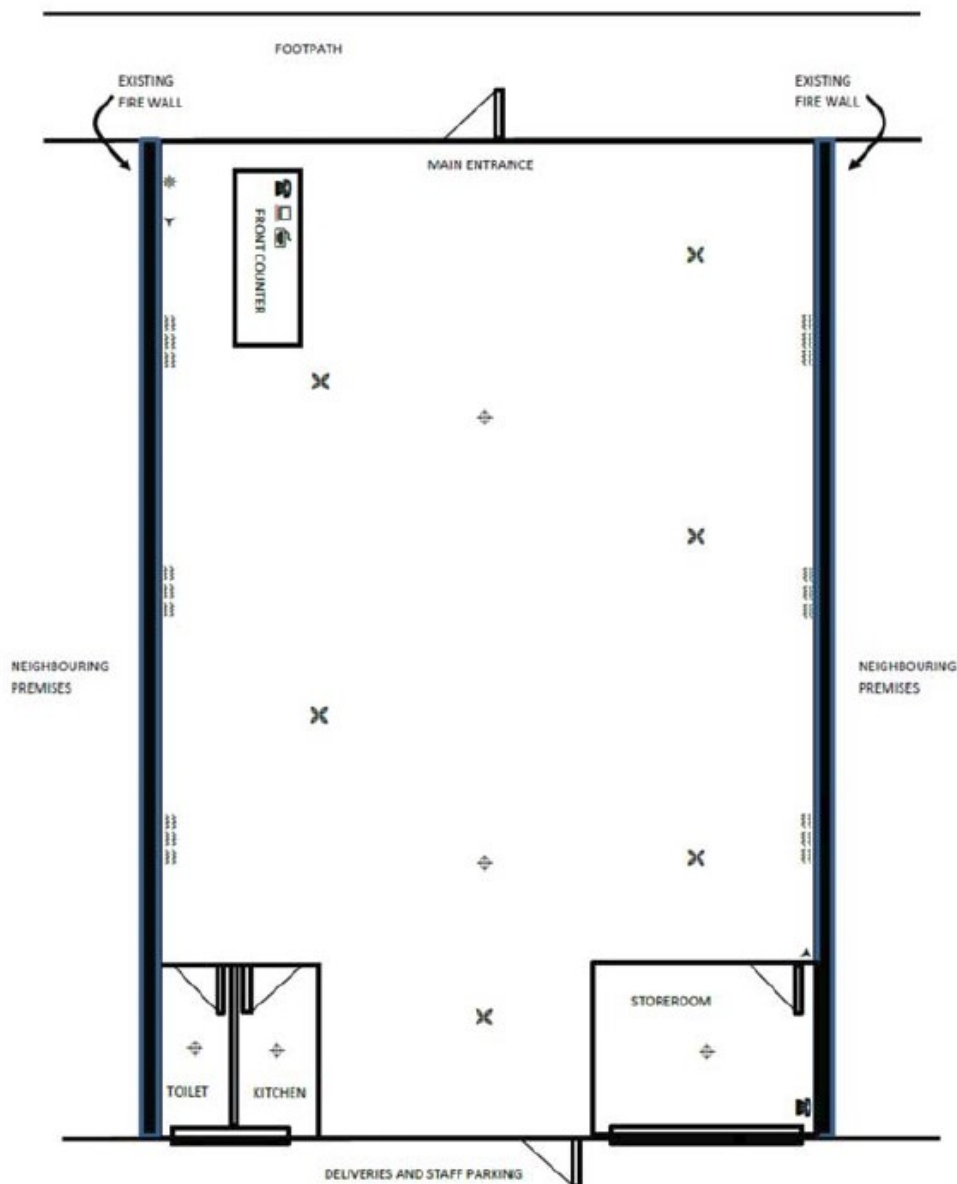
<https://www.pdfen.com/merge/merge-files-to-pdf>

<https://smallpdf.com/pdf-converter>

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Assessment 2

Appendix 1: Internal layout of existing premises

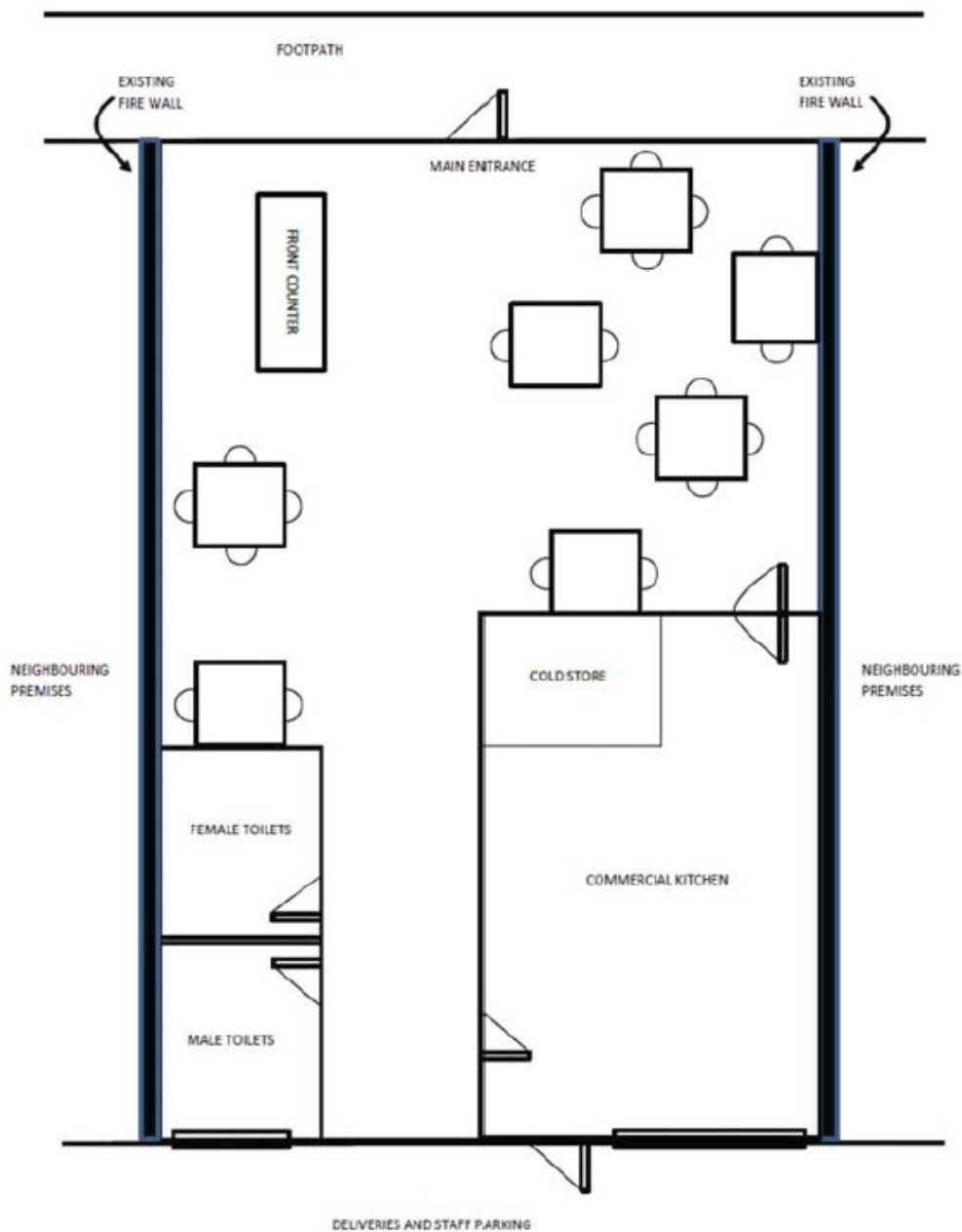

KEY:

- ▲ Wall mounted hand operated fire extinguishers ⊕ Smoke detectors ⊕ Manual fire alarm not connected to Fire Service
- ☎ Phone 📞 Eftpos at till 🌐 dial up connection to internet 🔥 Wall mounted radiant bar heaters ✕ ceiling fans

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Assessment 2

Appendix 2: Internal layout of proposed cafe



Marking Schedule

Task 1: Evaluation of the premises	8.5 – 10 marks	7 – 8 marks	5 – 6.5 marks	4 – 4.5 marks	1 – 3.5 marks
<ul style="list-style-type: none"> Identify existing systems 	Report presents information on the existing systems in a concise and clearly written format.	Report presents information on the existing systems in a clear, well-presented format.	Basic report on the existing systems.	Partial report on some of the existing systems.	Limited information on existing systems.
	8.5 – 10 marks	7 – 8 marks	5 – 6.5 marks	4 – 4.5 marks	1 – 3.5 marks
<ul style="list-style-type: none"> Evaluate how well existing systems meet the regulatory requirements 	Thorough and accurate evaluation of how well existing systems meet the regulatory requirements.	Good evaluation of how well existing systems meet the regulatory requirements with minor omissions or errors.	Basic evaluation of how well existing systems meet the regulatory requirements. Answer may include some irrelevant information, and/or errors or omissions.	Attempts to evaluate how well existing systems meet the regulatory requirements but contains significant errors / omissions.	No accurate information on how well existing systems meet the regulatory requirements.
	8.5 – 10 marks	7 – 8 marks	5 – 6.5 marks	4 – 4.5 marks	1 – 3.5 marks
<ul style="list-style-type: none"> Evaluate any need for upgrading 	Report presents accurate information on items/systems to be upgraded in a concise and clearly written report.	Report presents information on items/systems to be upgraded in a clear, well-presented format.	Basic report on the on items/systems to be upgraded with some errors/omissions.	Partial report on items/systems to be upgraded with significant errors/omissions.	No accurate information on items/systems to be upgraded.
	5	4	3	2	1
<ul style="list-style-type: none"> Provide a brief summary of recommendations based on findings (that is, are the existing systems to be continued, replaced, or upgraded?) 	Includes clear summary of recommendations.	Includes summary of recommendations.	Includes basic summary of recommendations.	Summary of recommendations is included but is incomplete.	Summary of recommendations missing.

Task 2: Electrical and communications systems	12.5 – 15	10 – 12	7.5 – 9.5	6 – 7	1 – 5.5
<ul style="list-style-type: none"> Identify which electrical and communication systems need to be upgraded. Explain the regulatory requirements for any system upgrade. Explain the connection and installation requirements for the upgraded devices/systems. Identify the location of communication devices 	<p>Selects fully appropriate system(s).</p> <p>Includes concise and accurate explanation of the regulatory requirements of selected systems upgrade.</p> <p>Includes concise and accurate explanation of the installation requirements for the upgraded devices/systems.</p> <p>Identifies and accurately locates all system components.</p>	<p>Selects appropriate system(s).</p> <p>Includes explanation of the regulatory requirements of selected systems upgrade.</p> <p>Includes explanation of the installation requirements for the upgraded devices/systems with minor errors or omissions.</p> <p>Identifies and locates system components with minor omissions or errors.</p>	<p>Selects appropriate system(s).</p> <p>Includes explanation of the regulatory requirements of selected systems upgrade with errors or omissions.</p> <p>Includes explanation of the installation requirements for the upgraded devices/systems with errors or omissions.</p> <p>Identifies essential system components but these may not be located in the most suitable areas</p>	<p>Select system(s) but this is not appropriate.</p> <p>Includes explanation of the regulatory requirements of selected systems upgrade but contains significant errors / omissions.</p> <p>Includes explanation of some of the installation requirements for the upgraded devices/systems but contains significant errors / omissions.</p> <p>Identifies some system components but these are not located in suitable areas.</p>	<p>Does not select appropriate system(s).</p> <p>Limited explanation of any of the regulatory requirements of selected systems upgrade (very little accurate information).</p> <p>Limited explanation of any of the installation requirements for the upgraded devices/systems (very little accurate information).</p> <p>Essential system components are not included or are located in highly unsuitable areas.</p>
Task 3: Fire	24 – 30	19.5 – 23.5	15 – 19	12 – 14.5	1 – 11.5
<ul style="list-style-type: none"> Recommend a suitable fire protection and fire exit system to the client. Include marked up drawings to support your answer 	<p>Recommends highly suitable fire protection and fire exit system, including appropriate:</p> <ul style="list-style-type: none"> Passive and active fire protection methods Escape routes Emergency lighting Emergency signage Annual inspection is explained 	<p>Recommends suitable fire protection and fire exit system including:</p> <ul style="list-style-type: none"> Passive and active fire protection methods Escape routes Emergency lighting Emergency signage Annual inspection is explained 	<p>Recommends fire protection and fire exit system including:</p> <ul style="list-style-type: none"> Passive and active fire protection methods Escape routes Emergency lighting Emergency signage Annual inspection is explained <p>with errors or omissions.</p>	<p>Recommends fire protection and fire exit system including some of the following:</p> <ul style="list-style-type: none"> Passive and active fire protection methods Escape routes Emergency lighting Emergency signage Annual inspection is explained 	<p>Does not contain accurate recommendations for fire protection and fire exit system.</p> <p>No drawings or drawings do not contain any accurate, relevant information.</p> <p>OR Drawings are illegible</p> <p>No legend</p>

	Clear, accurate drawings showing location of all system components. Drawings are sufficiently detailed and legible.	with minor omissions or errors. Clear drawings showing location of system components with minor omissions or errors. Drawings contain essential details and are legible.	Includes marked up drawings showing location of essential system components. May include some irrelevant information and/or errors.	with errors or omission of essential components. Includes marked up drawings showing location of some system components. Drawings may contain significant errors or omissions or be barely legible No legend	
	8.5 – 10 marks	7 – 8 marks	5 – 6.5 marks	4 – 4.5 marks	1 – 3.5 marks
<ul style="list-style-type: none"> Provide explanations, referring to the regulatory requirements, where applicable, to support your recommendations 	Includes detailed explanations with references to relevant regulatory requirements, (e.g., Clause C of the Building Code) where necessary.	Good explanation with some references to relevant regulatory requirements, (e.g., Clause C of the Building Code) where necessary.	Basic explanation with some references to relevant regulatory requirements where necessary.	Limited or inaccurate explanation to support recommendations.	No explanation to support recommendations.
	8.5 – 10 marks	7 – 8 marks	5 – 6.5 marks	4 – 4.5 marks	1 – 3.5 marks
<ul style="list-style-type: none"> Identify requirements of any specified system(s) 	Requirements of any specified system(s) identified.	Requirements of any specified system(s) identified.	Some requirements of specified system(s) identified with minor errors or omissions.	Attempts to identify requirements of any specified system(s) but this is unclear or contains errors.	Does not identify requirements of any specified system(s)