

Engineering Resource Efficiency (ENBU812) Semester 1, 2024

Assignment 1 brief (**Individual Assignment**)

Paper Leader: Kamal Dhawan

Submission deadline:

23:59 hrs Saturday 13th April 2024 (on AUT online, TURNITIN)

Instructions:

- This assignment is worth 40% of the Engineering Resource Efficiency Paper (i.e.40 marks).
- Submit everything in one document.
- Use the cover sheet (individual) as the front page for assignment.
- This coursework is **an individual assignment** and students must not work in collusion or in teams. Standard University guidelines for plagiarism and collusion apply.
- Referencing and bibliography is necessary, and APA7 format should be used.
- Word limit is between 600 and 750 words for each task (i.e. total of between 1800 to 2250 words).
- This word limit excludes table of contents page, reference list and any appendices
- Exceeding the word limit will lead to deduction of 1% of the overall marks scored.
- Items of relevant literature used for the report should be clearly referenced in the form of a reference list as well as in-text citations. Each Task should have at least 10 peer-reviewed articles/papers. Any other literature more than this is welcome. As a Word-saving measure, you may use square brackets and serial numbers from the reference list for in-text citation.

Objective:

This assignment is designed to provide you knowledge of the application, implementation, and technicalities involved in resource efficiency through the medium of reducing waste in the construction process, not limited to material waste only. You may use online resources, access to any project information that you may have or that may be available online, project managers, and any other sources you might find

appropriate.

The assignment has three tasks, each one of which is expected to be attempted in an essay form. Each essay should be between 600 and 750 words. Balance out the words based on the context you are addressing, e.g., introduction can be short where-as talking about concepts and implementation may be comparatively longer.

The marking rubric has been provided at the end of this brief. The tasks are provided in the subsequent sections.

Task 1

Construction and Demolition Waste contributes to nearly 50% of waste generated in New Zealand, of which 20% goes to landfill and 80% goes to clearfill, which is quite high by world standards. Demolition is considered the usual end-of-life strategy for discard/disposal of a built asset. There are, however, other strategies to reduce the waste generated from demolition of a built asset/building. Discuss the design strategies and end-of-life management strategies to reduce waste at the end-of-life of a building and discuss the New Zealand context.

Task 2

Logistics, or the means to achieve resource flow for construction, are a hidden facet of construction activity. However, they are, by default inefficient, especially when it comes to the fragmented construction market of New Zealand. Discuss construction logistics as enablers of waste reduction driven sustainability in the construction domain. Include a portion about construction related transport in New Zealand.

Task 3

Waste generation in construction is not only due to the construction process. It starts with design and goes on till the end-of-life of a built asset. Waste due to design and during design can be a significant contributor. The idea of resource efficiency including circularity has DfX as one of its significant drivers. Discuss any five DfX components and how they enable efficiency in the construction domain. Address DfX pertaining to all three sustainability domains.

Pass Requirements

To pass the paper, the student needs at least a **C- overall grade in each assessment.**

Late Assessments Hand in

School policy is penalty given for late submission of assessments; -

- 5% per day, up to a maximum of 5 days.
- If you miss an assessment through illness or other special circumstances, you

need to apply for special consideration.

- Fill in the form online via Canvas.
- Must apply within 5 working days.
- With assignments, if granted you will be given an extension.
- No guarantee that your request will be accepted.

Academic Dishonesty

The following are extracts from the Faculty policy on academic discipline:

“Rationale”

At AUT our aim is to develop confident, capable learners. In our learning, teaching and assessment we emphasise students’ active engagement with their learning and the development of capabilities such as critical thinking and communication. By insisting that students are honest in submitting assessed work we are demonstrating the importance of each student gaining and demonstrating a deep understanding of the disciplines they are studying.

The University has an obligation to preserve the integrity, rigour and fairness of its assessment procedures and the granting of credit to students. This means ensuring that students are only given credit for work which abides by the principles of honesty, integrity and fairness. Plagiarism, copying, unauthorised collaboration are all forms of dishonesty in assessment that breach these principles.

It is a breach of the AUT Academic Statute for a student to engage in any unfair practices in submitting any assessment materials at AUT, including resubmitting previously submitted work without gaining permission beforehand. Any breaches observed will be penalised.

(AUT Academic Calendar 2024 pp. 11, 111, and 617)

The faculty policy also gives a definition of forms of cheating and academic dishonesty”.

“Plagiarism

The Faculty of Design and Creative Technologies defines plagiarism as occurring where a person effectively and without acknowledgment presents the work of others as their own work. That may include published material such as visual images, audio clips, books, newspapers, code, lecture notes or handouts, materials from the Internet or other students’ written work.

Note that the definition includes the use of visual and audio work such as a

photograph, video, illustration or artwork. All the sources used must be credited including: -

- Images used in an artwork, piece of design or illustration.
- Code copied from a book or website.
- Direct reference to a concept from an existing piece of art or design.

Students should include a bibliography/picture-credit sheet for each assignment, listing all sources used (whether visual, written, code or other), and will be asked to sign an assignment cover sheet stating that all other material in the assignment is their own work. Changing a few words of an existing text, or even paraphrasing it, does not make it your own. This still needs to be credited. Similarly copying an image into another medium (i.e. making a drawing from a photograph) is also plagiarism unless it is acknowledged.

Students must use their own words. It means that students should NOT swap or pass on one person's written work to another by disk or computer file or share the task of writing and preparing a duplicated copy of work.

Other Forms of Dishonesty in Assessment

- Resubmitting previously submitted work for assessment without prior approval.
- Submitting for assessment any work which has been copied from any person.
- Taking any unauthorised material into an examination.
- Copying from or inappropriately communicating with another person in an examination.
- Impersonating any student or allowing a person to impersonate you in an assessment.
- Using any other unfair means in assessment.

Use of AI

ChatGPT has potential but its results must be assessed critically.

One specific prompt (question) to ChatGPT can lead to different answers is a reason for concern. ChatGPT can produce correct answers on *general* questions, but then the ChatGPT answers also are quite general, and often do not work where you need specific insights. Also, ChatGPT generates incorrect answers when prompted for specific questions. (It just makes things up, like providing non-existing sources or coming up with bullet-point lists that make no sense).

There are also severe copyright and plagiarism issues. That is serious because it threatens the authenticity of student work. And ChatGPT is extremely bad at acknowledging / mentioning accurate sources. Therefore, a quality check on the material provided is difficult. And is important from the quality perspective of the work being submitted.

As a professional you need to learn how to use AI in your work. For now, study several high-quality YouTube videos on correct use of ChatGPT. The **University of Sydney's online resources** are also good: -

[AI in Education main page](#)

[AI prompts to help students learn](#)

[AI prompts to help students create](#)

Looking for Literature Sources

When you use ChatGPT to look for literature sources, please check every source. This is because ChatGPT can provide (hallucinatory) references that don't exist. Also, if you use ChatGPT 3.0 or 3.5, the tool only provides resources up to the year 2021, as it is not directly connected to the Internet. A paid version of ChatGPT will circumvent this and be more up to date. This also applies for using Bing – as this is connected to the Internet.

MARKING RUBRIC

Assessment parameter	A+, A, A-	B+,B, B-	C+,C,C-	D	Allocated Marks	Remarks
Task 1	<p>The essay is of an excellent standard and demonstrates good academic rigour. Work is distinctive and could serve as a useful resource to anyone without knowledge of the subject matter. Explanations are clear and thought through. There exists a high degree of comprehension of the subject matter. Citations were relevant and appropriately applied where necessary.</p>	<p>Generally, of a good standard, confidently and clearly written, displaying an understanding of the issues in offsite construction process. The work demonstrates an understanding of the task, sound judgement and a grasp of the subject matter. There is good support of the arguments with appropriate citations where necessary. Arguments are sensible and realistic. That being said, there is room for improvement to make for a well-coordinated report.</p>	<p>The work is graded at an above average standard. Demonstrates an average understanding of concepts. Arguments are sensible and realistic but could benefit from improved clarity, fewer ambiguities and enhanced structure. There is room for substantial improvement the sharpness of focus and explanation of ideas. The report does not communicate evidence of a proper engagement with literature.</p>	<p>Work is of a basic quality with substantial weaknesses. Does not provide any evidence of engaging with literature.</p>	<p>20 marks each</p>	
Task 2						
Task 3						
Task 4						
Presentation/Structure	<p>Material is presented in a professional manner, following an excellent clear and logical structure to permit understanding of the given tasks.</p>	<p>Presentation of material could be improved as it is not to a high professional standard. Structure of the work demonstrated although more detail could have been provided to aid understanding of the different tasks.</p>	<p>The material is not presented to a high standard. Unclear structure. Limited logic in contents provided.</p>	<p>Work is presented to a poor standard. Little evidence of content structure considered or no logical structure provided.</p>	<p>10</p>	
References	<p>Clear evidence that background and supplementary reading has been undertaken and incorporated. Contains references to relevant published material which underpins the work. Contains comprehensive in text referencing AUT APA style.</p>	<p>There is minimum evidence of background and supplementary reading being completed. Contains some references but they are not specifically related to the work submitted, or in text referencing is not comprehensive, or errors exist in the reference list.</p>	<p>Little evidence of background and supplementary reading being completed. Reference material is limited and is not specifically detailed to relate it to the topic and/or the reason for inclusion is not explicit. Or in text referencing is generally lacking, or a number of errors exist in the reference list.</p>	<p>Very little or no evidence of background or supplementary reading being completed. Superficial and descriptive text is provided with limited analysis and referencing. Limited reference list overall and very limited or no in text referencing at all</p>	<p>30</p>	<p>20 for the number of references and 10 for APA7 formatting</p>
TOTAL					100	

