

CEED Project Brief

Cover Page

This page is intended to be a standalone document as well as being a cover sheet for the detailed Project Brief. It is NOT an introduction to the Project Brief. Your Client Mentor should be able to circulate to leaders in their organisation, so that they can get a snapshot of what you are doing.

It gives the following information:

- Project title & CEED Project number;
- Client organisation;
- Summary project description (which should identify the project Deliverables, and the potential benefits to the client);
- Student;
- Client Mentor(s);
- Academic Supervisor(s).

Summary

The project summary provides a clear, concise synopsis of the project. It should briefly identify the reasons for undertaking the project (with emphasis on relating those reasons to the needs of the client enterprise), the objectives of the project, and the business value in achieving those objectives. It should then proceed to identify the methods by which the objectives will be achieved, and the total costs that may be expected (excluding the original project fee). The key Deliverables must also be identified. The length of the summary must be limited to ensure that the summary, the headings above, and the names below appear together on the cover page.

Section 1 - Project Background

1.1 Problem Statement

The problem statement describes the specific issue (or issues) to be addressed by the project. The nature of this statement will obviously vary according to the nature of the issues. For technical problems, it may be appropriate to incorporate diagrams, graphs or tables illustrating the nature of the problem. For business and financial investigations, it may be useful to present relevant financial data.

This section should also discuss the implications of the issue for the client organisation. For operational problems in a plant, this may include environmental, health and safety issues, potential production loss, or maintenance requirements. For a design problem, the project may investigate improvements that allow the Client to compete more effectively or enter a new market. For projects dealing with organisational practices, the problem may affect the efficiency or effectiveness of operations or the delivery of services. In other cases, the project may simply help the Client develop a thorough understanding of an issue, which will help guide future policy formulation or planning.

1.2 Background Information

This section should consider existing knowledge related to the issue that will affect the progress of the project. If not already covered adequately in the problem statement, this section should start by summarising the current situation of the Client.

- How is the issue presently being handled?
- What is the current understanding of the issue?

You should then proceed to discuss the history of the issue in the Client organisation or other affected stakeholders (internal and external organisations, communities).

- How has the past history influenced the current situation at the Client?
- How did the issue develop?
- Have previous attempts been made to address the issue, and, if so, how successful have those attempts been?

Tracking down and discussing this history is critical if your project is to avoid “reinventing the wheel”. You should then go on to discuss any relevant information that you have gathered through the early stages of your literature review. If there alternate technologies that are to be considered, they should be described here. If similar studies have been reported in the literature, their findings should be summarised here.

1.3 Current and Future Client Environment

In planning a project, it is important to understand the ways in which the current environment at the Client organisation can affect the project, and can influence the motivations for undertaking the project.

- Does the client have access to a new piece of technology that can be applied to the project?
- Is there a particular group of staff available to support the project?
- Has new data become available that has not been previously been available for consideration?
- Have new motivations emerged for pursuing an issue? For example, a Client may have adopted a “carbon neutral” approach that dictates the retirement of old technology.
- Are any organisational changes expected to occur in the project time frame?

It is also critical to understand the environment in which the project’s findings and Deliverables will operate, and to consider any expected changes in that environment.

- Is new equipment scheduled to come online?
- Will new data become available?
- Are plant upgrades likely?
- Could political or legislative change affect organisational policy?
- Are operations subject to fluctuations in the price of a commodity?
- Is an organisational restructure, or a change in ownership, likely to occur in the foreseeable future?
- Will client staff require additional training in order to effectively implement your recommendations?

Any expected changes should be taken into account in the formulation of the project Deliverables and Project Brief.

As an example, in one previous CEED project the objective was to provide a framework for deciding between two options. During the course of the project, it was necessary to base that decision on assumed data (or data sourced from the literature). However, it was known that the Client organisation was establishing a new working group that would gather hard experimental data over the next several years. As a result, the decision framework was designed in a way that

permitted it to be used in conjunction with the “hard” data as it became available in subsequent years.

Section 2 - Project Objectives and Benefits Analysis

2.1 Objectives

This section will describe in detail the specific objectives to be pursued by the current CEED project. The importance of each objective should be assessed in the context of the background material provided in Section 1.

Note the difference – Section 1 will define the full scope of the issue. Section 2.1 will discuss specifically what is to be addressed in this project.

2.2 Benefits Analysis

This is one of the most important elements of this (or indeed any) Project Brief. You must describe the business value that will be realized through the implementation of the project Deliverables, taking into account the form in which those benefits will be realized by the Client.

In many cases, this will entail assessing the positive financial consequences of achieving the objectives (or, conversely, the negative consequences of failing to address the issue). In such cases, examples would include:

Cost savings expected from an improvement in practice;
The cost of production losses that may be incurred if the issue is not addressed;
A reduction in manufacturing costs per unit, and thus an improvement in the competitiveness of the manufactured goods;
The impact on one or more of the client’s Key Performance Measures;
An increase in sales, market share and/or net profit.

The benefits sought will not always be exclusively financial in nature:

- An environmental, health or safety issue may need to be addressed, or an assessment may need to be made to determine whether there is an emerging EHS issue;
- By assessing current practice, a project may enable more efficient deployment of resources; as an example, for government organisations, there may not be a profit motive, but more efficient deployment of resources may help the organisation improve the delivery of services for a given budget (for example, road improvements may reduce accident rates; targeted police deployment may reduce the number of offences committed, etc);
- The provision of an accurate report may enable the formulation of equitable policies in future (for example, a review of regional indigenous history may guide the assessment of native title claims and negotiations).

It should be noted that in many cases the benefits may be a combination of financial and non-financial benefits:

- In environmental issues, the direct benefit may be in reducing emissions to an acceptable level, but there will be ultimate financial benefit in that plant may be forced to shut due to excessive emissions;
- In safety issues, it may be essential to eliminate a safety hazard, but again there will be financial benefit in that accidents usually force plants to suspend operations at least

temporarily.

In light of the current and future environment at the Client Enterprise, the project Deliverables, and the associated benefits, will generally have a finite life. You should discuss the expected future life of the Deliverables and benefits within the client organisation:

- Are there any specific conditions that will limit the useful life of the Deliverables? Are these conditions likely to emerge or change?
- How may the Deliverables be adapted to extend their life as the client environment changes?
- Are there future changes that will enhance the benefits realized? Will the Deliverables enable the client to take advantage of anticipated changes in circumstances?

Section 3 - Project Execution Plan

3.1 Methodology

This section describes the “process” by which the project objectives are to be achieved. The nature of this process will vary according to the type of project, but for all projects you should break down the project into specific tasks, and describe the approach that will be taken to accomplishing each task.

It is important that you provide extensive and specific detail on the technical and logistical aspects of the planned process. For experimental tasks, describe the experimental equipment and specific techniques that will be employed – it’s not enough to say “testing will be done”.

You must address:

- The test method (e.g. is a standard test method being applied);
- The number of tests to be undertaken;
- The number of specimens to be created/collected;
- The test time frame (this may be critical if the experiment is in an operating process).

For modelling tasks, identify the software packages and computing resources that will be used, or the platform for the development of any new software. For theoretical tasks, identify the approaches under consideration or that will be developed. For design tasks, identify the tools or approaches to be used for each task. For literature review tasks, identify the databases/indexes and bodies of literature that will drive the review. Obviously, a single project will often include examples of each of these types of task.

For CEED projects, it is important to identify any constraints imposed on the methodology due to the needs of the Client. Examples of such constraints would include:

- The use of a specific type of test (due to the Client’s need to comply with organisational or regulatory requirements);
- The use of specific modelling software (such as Finite Element or CFD packages);
- The use of specific standards (to comply with Client practice);
- The use of specific programming languages or tools (to comply with the tools available at the Client).

3.2 Project Timeline (Gantt Chart)

The project timeline describes the sequence of tasks, and the expected initiation and completion dates for each task. A graphical approach, in particular a Gantt chart, is usually the

best way to describe the project timeline, and as such is required in the brief. It is important to identify the tasks that form the critical path for the project, and to take particular care in the scheduling and management of these tasks.

The focus here should be on the research tasks – a common failing is to focus too heavily on unit submissions. Assessment items are of course important, but the research is more important – without it you have nothing to submit! At least 75% of the tasks in your timeline and milestones should be research tasks – if more than 25% of the items relate to assessment or administrative submissions, the balance is wrong.

You should break the larger tasks down into smaller sub-tasks – ideally 1-2 weeks in duration. Being able to track progress is important – both in terms of making sure that you are sticking to your timeline, but more importantly in terms of feeling that you are making progress. Students often find the widely spaced deadlines of research projects daunting – that feeling of progress can greatly help your state of mind during the project.

In the text, you should provide in list or tabular form a summary of the key project milestones and dates. You must also provide text discussing any key constraints on the proposed timeline:

- The availability of test equipment;
- Lead times for expenditure approval and /or equipment delivery;
- The availability of personnel to assist in data collection;
- Times that a particular site can or cannot be accessed;
- Absences of the Client Mentors or Academic Supervisors;
- Lead times for client approvals of publications (the conference paper and thesis).

3.3 Resources

It is important to identify the resources needed to accomplish the processes described in section 3.1. It is critical to provide a breakdown of who will be providing each resource (UWA or Client) – there's no point specifying a test that neither party is capable of doing or arranging. Be sure to discuss the plan with your Client Mentor and Academic Supervisor, to make sure there are no misunderstandings as to the availability of equipment. You should also identify whether resources are currently in place, or whether they will be developed during the course of the project.

Provide a detailed breakdown of any costs to be incurred, including an estimate of the costs (as refined an estimate as can be made at the time of writing). Note that the client will have to agree in advance to any expenditure before it can be incurred. Also note any constraints imposed on the cost, such as any upper limit imposed on the total project budget by the client.

3.4 Risk Management

One of the most important elements of project management is to understand potential problems, or “risks”, that may affect the project, and to identify “risk management” strategies to eliminate or mitigate these risks. Research projects are subject to a variety of factors that can hinder a CEED scholar's progress, such as:

- Failure or unavailability of critical experimental equipment;
- Unavailability of data or facilities at partner organisations;
- Changes in the business situation of industrial partners;
- Failure of a key technique to deliver the results needed to achieve the objectives;

- Extended absence of the Academic Supervisor or other key personnel;
- Delays in workshop fabrication;
- Unavailability of funds to create experimental facilities;
- Loss of data (through computer failure).

By recognising risks and developing risks management strategies at an early stage, you overcome apparently catastrophic circumstances to deliver a successful project. Indeed, simply being aware of the risks may enable you to avoid the most catastrophic circumstances. Risk management approaches could include:

- Developing alternate plans or objectives in the event of equipment loss;
- Identifying research paths that are not necessarily dependent on the continued cooperation of an industrial partner;
- Identifying alternate techniques that may provide useful data in the event that the preferred approach does not work;
- Developing strategies to ensure security of data.

As an element of the Project Brief, you are required to identify and describe the risks affecting their proposed project, and to describe strategies for eliminating or mitigating these risks. For each risk, you must provide:

- A brief description of the risk;
- The likelihood of the risk eventuating;
- The consequences of the risk;
- The management strategies to be adopted to mitigate the consequences of the risk.

In classifying the likelihood and consequences of the risk, the guide listed in table 1 below should be followed.

Likelihood	Description
Probable	The event is expected to occur in the time frame of the project
Possible	The event is not expected to occur in the time frame of the project
Improbable	Conceivable but highly unlikely to occur during the project
Consequence	Description
Severe	Most objectives cannot be achieved
Major	Some important objectives cannot be achieved
Moderate	Some objectives affected
Minor	Minor effects that are easily remedied
Negligible	Negligible impact on objectives

Table 1 Guidelines for classifying the likelihood and consequences of risk factors. (Based on HB 436:2004 Risk Management Guidelines – companion to Australian Standard AS/NZ 4360:2004)

3.5 Personnel and Communications

To ensure the smooth progress of the project, it is important to list in the Project Brief the names, positions and contact information of all personnel at the Client organisation who will be involved in supporting the project, along with the staff involved at UWA. This should be done in table form, as illustrated below.

The next step is to set out the planned schedule for meetings and reporting. You should list

the frequency (e.g. fortnightly, monthly, and quarterly) and location of any planned project meetings. If there are any requirements for periodic reporting (above and beyond the monthly reports that you are required to provide), this should be specified in this section.

Finally, you must list any specific reporting requirements for your project. Your client may require that approval be given for you to undertake certain portions of the project. For example, you may need to contact client staff, customers or stakeholders, and the client may wish to pre-approve the contact list and approve the form of the contact (such as the form of any questionnaires or surveys). The client may also need to be involved in approving the design of any experimental equipment or procedures. The Project Brief must list any such requirements, along with the communication protocols to be followed in each instance.

Name	Position	Phone	Email
Joe Bloggs	Operations Manager (Client Mentor)	(08) 1234 5678	joe.bloggs@company.com.au
John Doe	Operator (Deputy Client Mentor)	(08) 1234 5678	joe.doe@company.com.au
Dr. Jane Doe	Academic Supervisor	(08) 1234 5678	Jane.Doe@uwa.edu.au
Kimberlie Hancock	CEED Admin Office	(08) 6488 3130	ceed@uwa.edu.au
Dr Jeremy Leggoe	CEED Director	(08) 6488 7315	jeremy.leggoe@uwa.edu.au

Table 2 Key Project Personnel

3.6 Confidentiality

In many projects, the client’s business interests will require that some or all of the information produced during the course of the project will need to be held confidential. It is also common for clients to require students to hold information provided by the client during the course of the project in confidence. In some CEED projects, specific contracts include clauses dictating confidentiality requirements; the standard CEED Project Agreement also includes some generic clauses related to confidentiality.

In the Project Brief you must define the specific confidentiality conditions and procedures for your project. This will require determining the manner in which you will meet your obligations to the Client while still meeting the requirements for assessment in your School. This section should accordingly include:

- The nature of any material to be held in confidence;
- The nature of the restrictions imposed on any publications and presentations;
- The procedures to be used for approving publications and presentations for release;
- The period over which material must be held confidential (note – some typical conditions are included in the CEED Standard Project Agreement; additional conditions may be imposed if there is a specific contract for your project).

Note that in addition to the CEED Seminar, your project unit will usually require some form of public presentation – it is your responsibility to ensure that you are able to comply with the requirements of both the Client and your unit. In determining the confidentiality conditions for your project, you should inform the Client of the assessment procedures in your School; they should be aware of the materials you will be expected to submit for assessment, and the range of people that will be involved in the handling of these materials. This will help the client to

plan any approval procedures.

Your unit coordinator will be able to assist if you need to arrange a confidential presentation - but you must give them enough lead time, and you must make them aware that a research agreement exists between the University and the Client (in the form of the CEED contract and the Project Brief) that sets out the University's obligations for handling confidential material.

The confidentiality section is one of the most common areas where changes are needed to the first draft – despite its critical importance, the publication approval process is often omitted. Make sure you don't make this error!

Section 4 - Deliverables

List the Deliverables, specifying the format they are to be delivered in. Each deliverable must be specific, and well defined – there should be no room for confusion as to what will be delivered.

The Deliverables should be arranged as a bulleted list, as follows (with examples);

- Project Report – This may simply be your thesis. If so, it should be specified as such; if not, the way in which the report provided to the client differs from a conventional thesis should be described.
- Matlab Program for performing Model Calculations.
- Manual for the Matlab Program – a text document containing comprehensive instructions for Client staff using the program.
- etc, as necessary.....

Section 5 - References

References should be listed on a separate page. The APA citation style must be used.