VCE Systems Engineering

Design Brief Explanation

Folio Section: Design Brief Organisation

There are 4 parts to the design brief with each part having 2 areas;

1. Problem and Need (Why?)
2. Client and End user (Who?)
3. Constraints and Considerations (What?)
4. Potential Tests and Initial Research (How?)

Breaking it down: **Problem and Need (Why?)**

What's the Difference?

The problem is all about the issue that has arose and the difficulties it is causing. There may be some background or context needed to explain how the issue came about. You could say it is a negative focus on a situation.

The need looks at what is required in general terms to overcome the problem presented without locking in anything too specific just yet, that will come in later sections of the folio. This is setting your direction and a general description of the system to be developed.

Simple example of problem and need;

Problem: My feet are cold and wet due to my shoes having a hole in them and the leather doesn't repel the water well.

Need: I need to waterproof my shoe leather and the holes in my shoes needs repairing.

(The need doesn't specify what product will be used for waterproofing or what part of the shoe needs repairing or how it will be repaired)

\*The **solution** is then explored through the rest of the folio with research undertaken, options sort, decisions made, planning done, action taken, solution tested and evaluation of the results to see that the problem has indeed been solved. That is, the design brief has been met.

Breaking it down: **Client and End user (Who?)**

The client is the person who has come to you with the problem. Give some information about the client that may be useful in considering the factors effecting the design of the solution. The client may or may not be the person who will be using the designed solution.

The end user is the person who will be using the designed solution. This is important as their needs must be considered carefully, as they will be most affected if something doesn't work or goes wrong. Think of the market segment targeted for the system.

Breaking it down: **Constraints and Considerations (What?)**

The constraints of a project talk about the necessary requirements (must have's) and also the restriction placed on the project (limited by). Must haves could be features needed or often safety requirements. The limits could be many and varied, but often relate to cost, size, weight, appearance, materials, etc. Constraints are quite specific in detail.

The considerations of a project talk about the areas of the project that requires your input through research and development to come up with some viable options to present to the client. Considerations usually lack specific detail in most cases and are the basis of your folio exploration.

Breaking it down: **Potential Tests and Initial Research (How?)**

The potential tests are a bank of test ideas brainstormed to be draw upon to develop tests for the finished product, to check performance and diagnose any problems. From this, modifications can be made for re-testing and/or improvement to meet the required outcome.

The Initial Research is a pool of research starting points that can help to give direction to focus efforts in collecting the right types of information. A follow on or extension of this could be the creation of a mind map, helping to link and extend important ideas.