Design Criteria and Requirements (Constraints)

These are some general questions that might be asked during brainstorming and design evaluation. The focus of the question depends on if you are designing a product, system, or process.

- Performs intended purpose within required tolerance/specification?

- Meets all required laws, regulations, and standards (see next page)?

- Economically feasible to design with available technology & resources?

- Economically feasible to build or manufacture? Must you retool assembly line, retrain workers, stock additional materials, etc? How long does it take to manufacture or build?

- Economically feasible to market? Are competing products already on the market? Will your sales force require additional training? Can you deliver it on time?

- Reliable enough to make customer happy, last through warrantee? Avoid unhappy customers, bad reputation, decline in sales and profit margin.

- Easy to learn how to use and operate? It is user-friendly or user-hostile?

- Economic scheduled maintenance during warrantee period, repair afterwards?

- Is the product or system safe to use? Is it safe to be around? Will only a trained person use it, or will the general public be exposed to it?

- What happens after the economic or functional life is used up? How can it be disposed, recycled or demanufactured? Are there any environmentally hazardous materials?

Many of the above can be summed up as the "-ilities." That is:

- Designability
- Disposability
- Liability
- Maintainability

- Manufacturability
- Operability
- Marketability
- Reliability
- Repairability