Design & **Visual** Communication

Principals + Elements of Design

Waiopehu College

2015

PRINCIPALS + ELEMENTS OF DESIGN

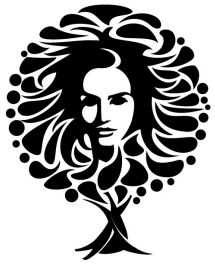
The two main design principles:

Aesthetics: The set of principles concerned with the qualities of appearance, visual appeal, good taste, and beauty; the rules that determine how beautiful or pleasing to the eye something is. Elements within this principle include shape, form, colour, texture, finish, environment, point, line, plane, proportion, contrast, pattern, movement, balance, harmony, style, and rhythm.

Function: How a product, system, or environment works or performs for its intended user; how something carries out its purpose. Key factors include strength, durability, efficiency, safety, stability, reliability, ergonomic fit, construction (and its cost), optimisation, user-friendliness, and fitness for purpose.

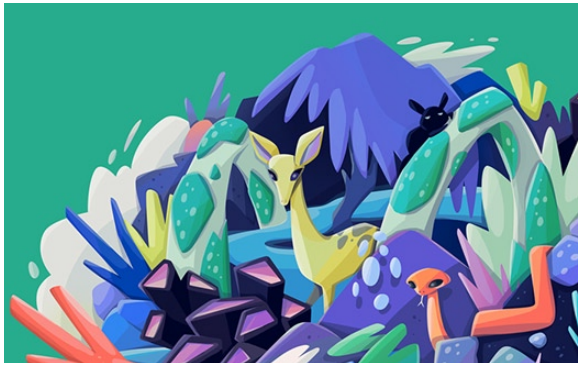
Aesthetics associated principles:

Shape
Is the external two-dimensional outline, appearance or configuration of something.



Form
Refers to the external three-dimensional outline, appearance or configuration of something.

Movement
An object with strong (visual movement) tends to be shaped in a way that draws the eye in a certain direction. Its shape or shapes may be asymmetrical, flowing, or dynamic. Objects with less visual movement tend to have more static and symmetrical shapes.

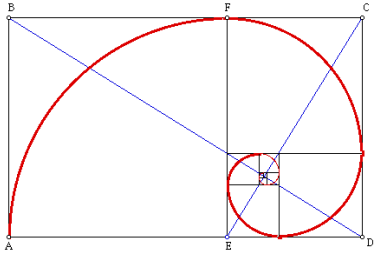


Pattern and Rhythm

A pattern is a repeated design element. Patterns are found on many plants and animals (for example, leaves and tabby cats) as well as on manufactured products, such as fabrics and wall and floor coverings. Rhythm is related to pattern in that it uses repeating elements, but they may have a stronger quality of movement and be in the form of sequences or series.

Proportion

Proportion has to do with the relationship between different parts of an object or composition (or between those parts and the object as a whole). The proportions of an object made to be used, such as a teapot or a jug may have a functional as well as an aesthetic purpose.
Many shapes in nature have the proportions of the golden section, a ratio identified by the Greeks and used in their buildings. Throughout history, harmonious proportion in architecture, painting, and sculpture has often been arrived at using the golden section, which works on the principle that an objects proportion are most pleasing when they are based on the ratio of 1 to 1.618.



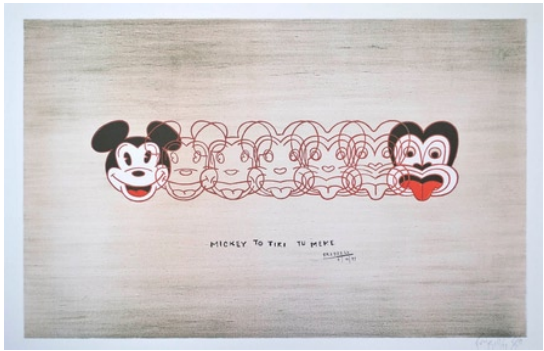
Balance

There are three main kinds of visual balance:

- **radial**, where the design elements radiate out from a center, as in the petals of a daisy or the face of a clock;
- **formal** (or symmetrical), where the design on one side of a center line is identical to the other side, as in the front view of an animal or a chair;
- **informal** (or asymmetrical), where the elements of a design are distributed unequally, as in the side view of a teapot.

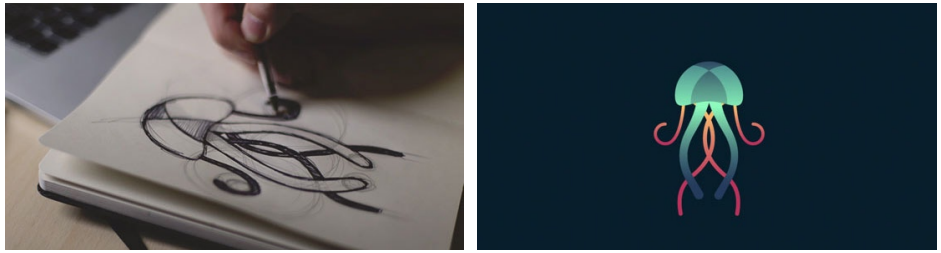
Harmony

A harmonious design is one in which its different elements are in unity with each other, for example, its colours may blend together well. A harmonious design might be considered appropriate for the furnishings of a relaxing environment, such as a bedroom.



Contrast,
Is the opposite quality to harmony, involves the use of opposing elements, such as clashing colours and shapes, in the same design. Contrast in a design may be more appropriate for a stimulating environment or when impact is wanted, such as in many advertising layouts.

Style
Style is most often related to aesthetics rather than function. Style is ever-changing. What may be considered ugly or gauche one year may be the height of fashion the next. Whereas it is possible to make objective judgments on the success of a functional design, judgments on style are much more subjective and reliant on an individual's personal response.



Function associated principles:

Strength
The strength of an object or product is determined by its ability to withstand pressures or forces. Such forces can derive from nature (for example, from strong winds or earthquakes), from users (for example, a builder using a hammer or a woman wearing stilettos), or from within the object or system itself (for example, inside the cylinders of a combustion engine). The development of materials such as fiberglass and carbon fiber has allowed designers to make lightweight, streamlined products that are still extremely strong.

Durability
Is the ability of a product or material to last in a given environment and to stand up to wear. Durability is a relative concept; our expectations of a products durability depend on a variety of social, economic, and legal factors, such as how and where it is used, how much we pay for it, and the kind of guarantee it comes with. For some objects or materials, their durability will depend on their strength; for others, flexibility or fitness for purpose will be the key factor.

Safety

Products, systems, and environments must be designed so that they are as safe as is practically possible to use. In many instances, designs have been adapted to make them safer for particular users (for example, rounded scissors for young children) or to prevent certain people from using them (for example, modern medicine bottles with safety caps).

Stability

A factor that is often considered when reviewing the safety and reliability of an environment, system, or design. Anything that is not stable is unlikely to be able to function effectively in the long term, be it a building, an ICT system, an engine, a plant nursery environment, or a food product.

Efficiency

Technically, efficiency is the ratio of useful work achieved to the amount of energy expended. But the term is more often used in relation to a situation where work is productive, with minimum wasted effort or expense.

Reliability

Reliability is the likelihood that a product or system will continue to do its job. The design of a product and the components used in it influence its reliability.

Reliability is a much more critical consideration for some products than for others, particularly when safety is at stake. For example, it is much more important that there are no breakdowns in an aeroplane engine than in a lawnmower motor.

Fitness for Purpose

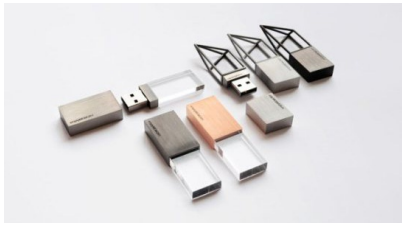
Fitness for purpose describes how well a product works in the situation it was designed for and how well it meets the needs of its intended end-users. In order to ensure that a product is fit for its purpose, its designer has to find the right balance between technical factors and the needs of those who will be using the product.

For example, a simple “no frills” video player may better meet the needs of many users who would be overwhelmed by a sophisticated player with many additional features. Fitness for purpose depends on accurate design specifications; if the specifications aren’t right, then even if the product meets them completely, it still won’t be fit for its purpose.

Given accurate specifications, the designer then has to make appropriate choices in materials, assembly methods, and so on in order to ensure that the final product meets or surpasses the specifications. In developing solutions, designers need to continually evaluate their design decisions against their brief and specifications.

User-friendliness

The user-friendliness of a product, environment, or system is the degree to which it is easy to use. The relative importance of user-friendliness in the design of a product, environment, or system depends on how widely it will be used. For example, if a product is intended for brief use by a wide variety of people, then user-friendliness will be a more critical consideration than if it is to be used for long periods by a small number of specialists.



Ergonomic Fit

Ergonomics is the study of the relationship between people and their working environment, especially in connection with the things they use. To achieve the best possible ergonomic fit, designers have to ensure that equipment and work environments match the capacities and limitations of their users. For example, the height of a table or the size and shape of a toothbrush are decided using ergonomic principles. Ergonomics relates to the whole working environment, but an important focus is often the size and shape of objects. Designing objects that take account of peoples size and shape requires the use of sets of standardised body measurements called anthropometric data, which can vary from country to country. These measurements are incorporated into the design of objects that will be used by many people, such as spectacles, cups, and public seating.