

BASIC DESIGN 2

Chapter one:

INTRODUCTION

-Two dimensions are **LENGTH & BREADTH**

- **They** co-establish **a planar surface** with a flat visible displaying.

- Has **no depth**. **THE TWO-DIMENTIONAL WORLD**

- **A human creation** (drawing, painting, printing, writing....etc.)

- A **camera** transforms every thing in front of its lens into a flat picture, and **television** transmits moving images to a defined surface.

- We live in 3 dimensional world, **what we see in front of us is not a flat picture.**

- look back, left, right, front.....up and down (what you will see?)

- If we picked up an object, turned around in our hands

Q: (what you will notice?)

THE THREE-DIMENSIONAL WORLD

Answer: **each movement of the object displays a different shape.**

Q: (why?)

Answer: because the **relationship between the object and our eyes has changed.**

- Have to **view it from different angles and distance** to be understood.

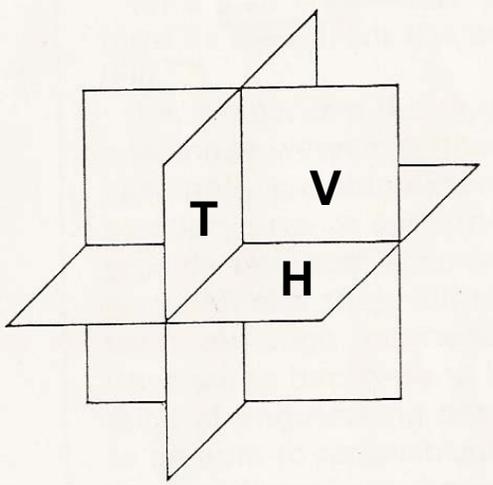
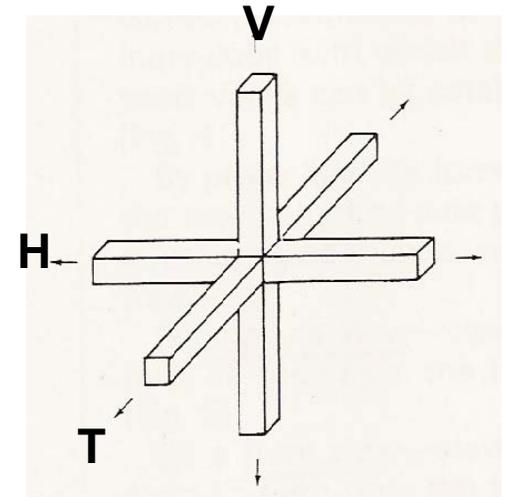
Establishing visual harmony and order, or to generate visual excitement.

THE THREE-DIMENTIONAL DESIGN

- Similar to ~~2-dimensional design~~ but concerned with the 3 dimensional world.
- it is more complicated because various views must be considered from different angles
- it is less complicated because it deals with real forms and materials in actual space.

Accordingly, the problems of 3 dimensional design is representing it on paper.

- **Vertical direction:** goes up & down
- **Horizontal direction:** goes right & left
- **Transverse direction:** goes forward & backward.



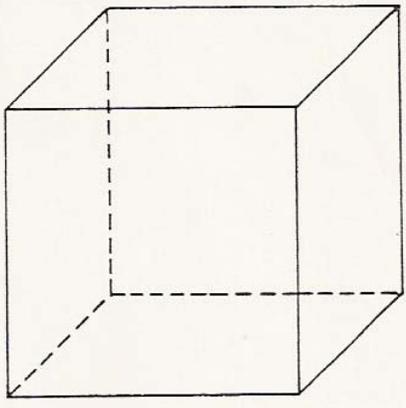
For each direction, we can institute a flat plane, accordingly, we can have:

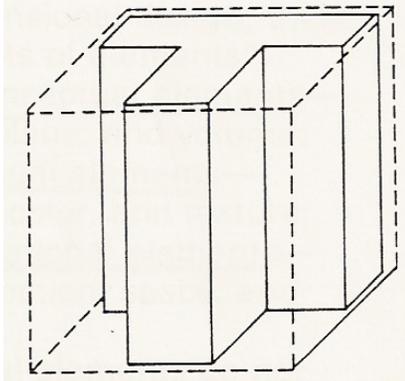
- **A vertical plane**
- **A horizontal plane**
- **A transverse plane.**

THREE PRIMARY DIRECTIONS

By doubling such planes:

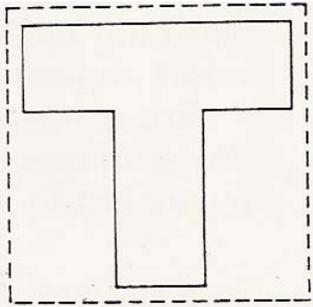
- **Vertical** plane becomes: **front & rear** Planes
- **Horizontal** plane becomes: **top & bottom** planes
- **Transverse** plane becomes: **left & right** planes





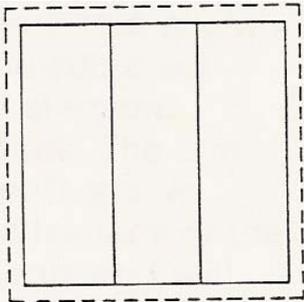
Any 3 dimensional form can be placed inside a cube. This leads to establishing the **3 basics views**

By projecting the form we can get:

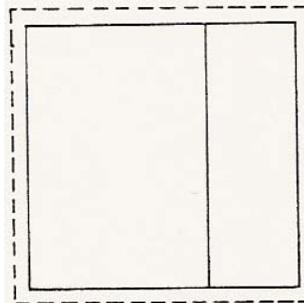


A plane view: view of the form as seen from the top;

THE THREE BASIC VIEWS



a front view: view of the form as seen from front;



a side view: view of the form as seen from side.

Same like two dimensional design:

- a. Conceptual elements: (point, line, plane and volume.
- b. Visual elements: shape, size, color and texture.
- c. Relational elements: position, direction, space and gravity.

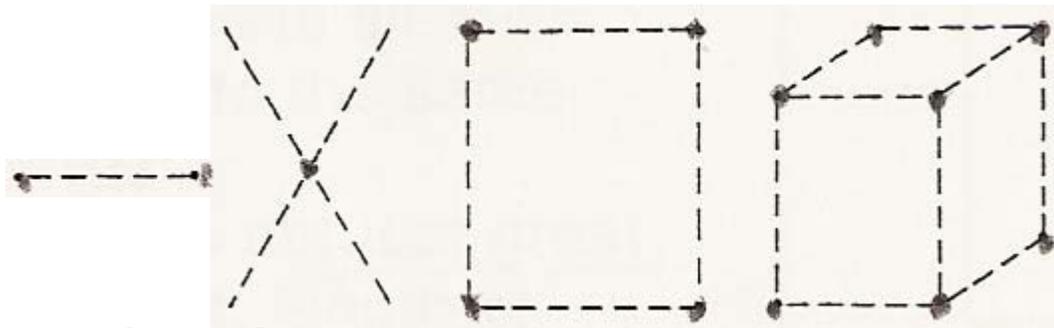
ELEMENTS OF THREE-DIMENSIONAL DESIGN

Add to three dimensional design, the forth element which:

- d. Constructional element: vertex, edge and face.

a. CONCEPTUAL ELEMENTS:

1. Point: has no length, breadth or depth.



It marks:

- the 2 ends of a line,**
- the single place where lines intersect,**
- the meeting of lines at a corner of a plane, and**
- the angle of a solid form.**

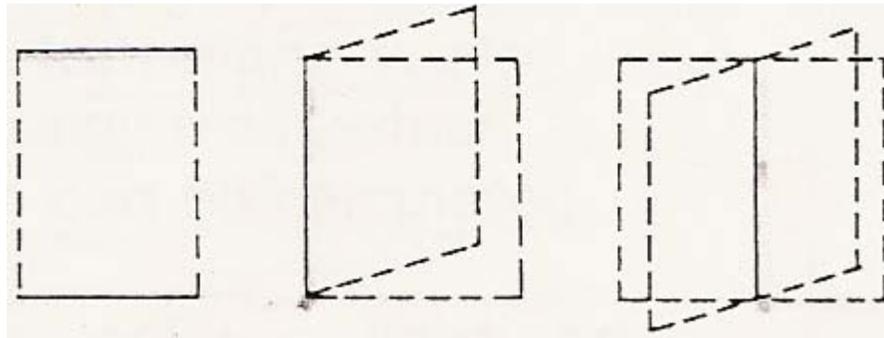
a. CONCEPTUAL ELEMENTS:

2. Line:



-Created as a movement of a point. Its path becomes a line.

-A conceptual line has no breadth or depth. It has position and direction.



It marks:

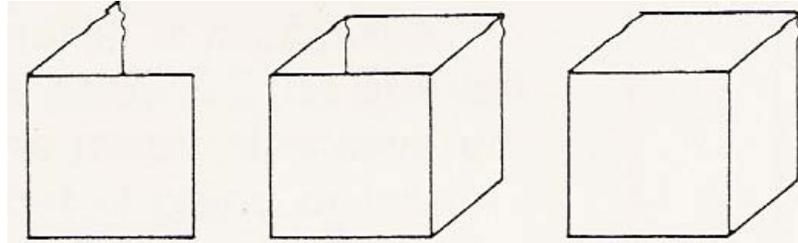
-The border of a plane,

- the place where 2 planes join or intersect each other.

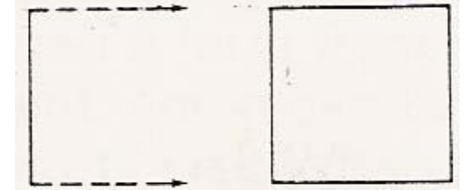
a. CONCEPTUAL ELEMENTS:

3. Plane:

- Created as a movement of a line in a directional movement.
- A conceptual plane has length and breadth, but no depth.

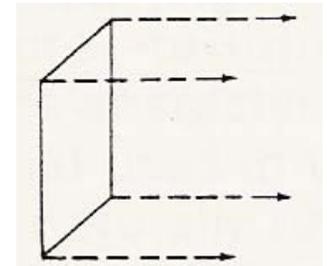


It defines the external limits of a volume.

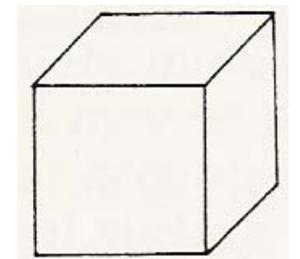


4. Volume:

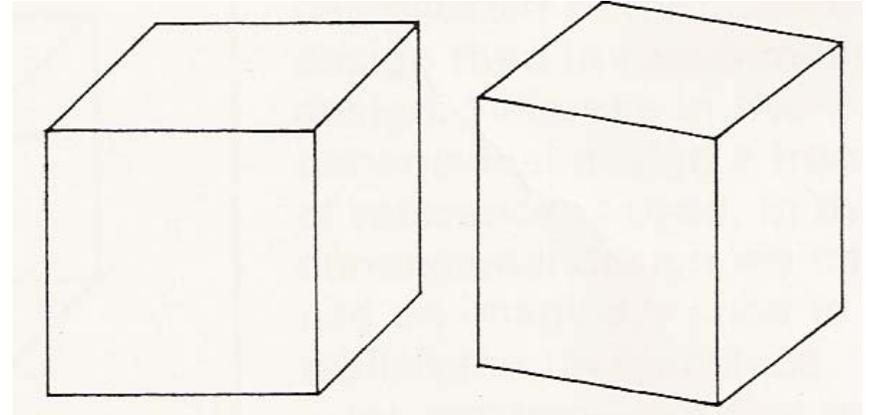
- Created as a movement of a plane in a directional movement.
- A conceptual volume has length, breadth and depth. But no weight.



It defines the amount of space contained or displaced by the volume.



b. VISUAL ELEMENTS:

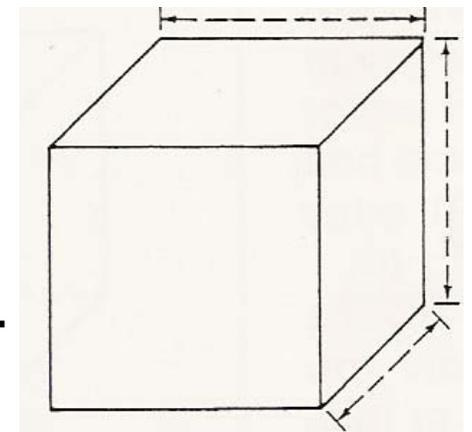


1. Shape:

- It is the outward appearance of a design.
- The main identification of its type.

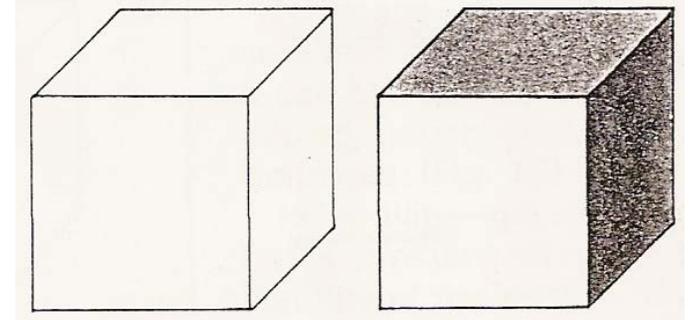
2. Size:

- It is the greatness or smallness which can be established the way of comparison.
- Can be measured on any 3 dimensional form in term of (length, breadth and depth) or (height, width and thickness). Accordingly, its volume can be calculated.



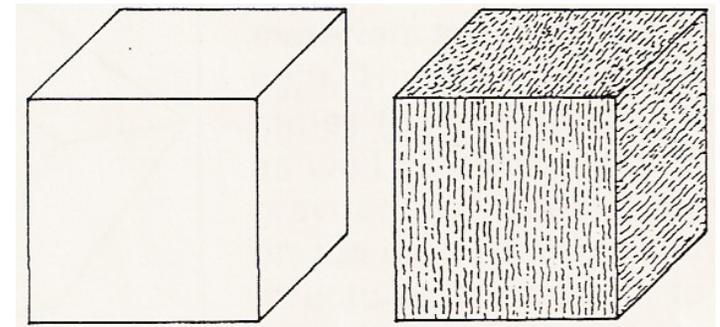
3. Color:

- It is light or dark value, which we can distinguish the form from its surrounded environment.
- Can be natural (the original color of the material is represented) or artificial (the original color of the material is covered by a coat of paint, or transformed by treating with some other method).



4. Texture:

- Refers to the surface characteristics of the material used in design.
- It may be natural or treated.
- It may be smooth, rough, matt or glossy as determined by the designer.



C. RELATIONAL ELEMENTS:

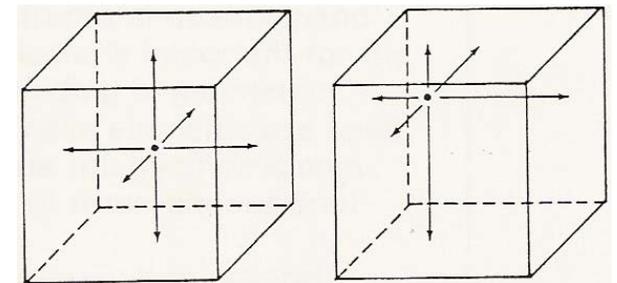
In 3 dimensional design, we can use imaginary cube to establish the relationships.

1. Position:

Must be ascertained by more than one of the 3 basic views.

To be able to do that

We have to know how a point is related to the front/rear, top/bottom and side planes of the imaginary cube.

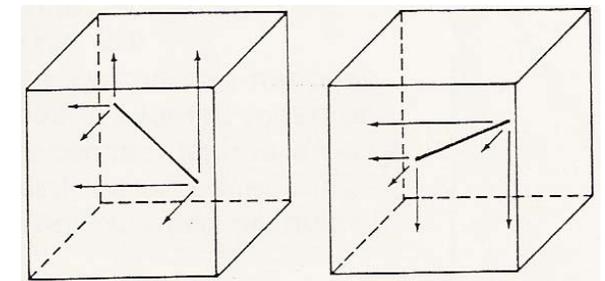


2. Direction:

Also must be ascertained by more than one of the 3 basic views.

Because

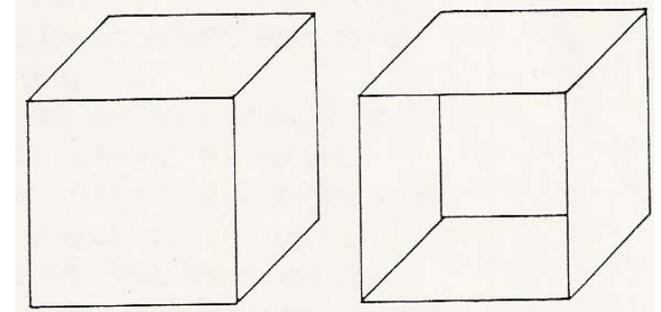
A line could be parallel to the front/rear planes but oblique to all other planes of the imaginary cube.



C. RELATIONAL ELEMENTS:

3. Space:

It can be seen as positively occupied, unoccupied, or internally hollowed



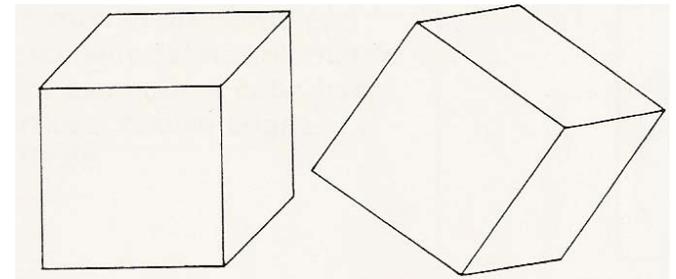
4. Gravity:

It has an effect on the stability of the design. We can not have forms in mid air without hanging or anchoring them in some way.

Moreover, some materials are heavy and some are light, the material used determines the weight of the form as well as its capacity to bear gravitational loads of other forms on top of it.

Accordingly

All 3 dimensional structures are subject to the laws of gravity



d. CONSTRUCTIONAL ELEMENTS:

It is used to indicate the geometric components of 3 dimensional design

1. Vertex:

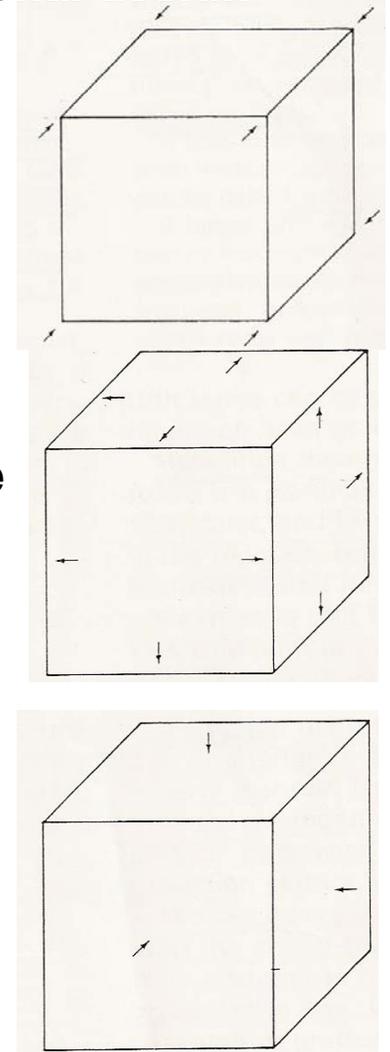
- When several planes come to one conceptual point, we can have a vertex.
- It can be projected outward or inward.

2. Edge:

- When 2 nonparallel planes are joined together along one conceptual line, an edge is produced.
- It can be projected outward or inward.

3. Face:

- A conceptual planes of the 3 dimensional forms is a faces.
- Faces are external surfaces which enclose a volume.



Constructional elements can help to precisely define volumetric forms. For example, a cube has 8 vertex, 12 edges, and 6 faces.

a. CONCEPTUAL ELEMENTS

Point Line Plane Volume

b. VISUAL ELEMENTS

Shape Size Color Texture

ELEMENTS OF THREE-DIMENSIONAL DESIGN

c. RELATIONAL ELEMENTS

Position Direction Space Gravity

d. CONSTRUCTIONAL ELEMENTS

Vertex Edge Face

.....FORM

Different between **FORM** and **SHAPE**:

- Shape is one aspect of form.
- When form is rotated in space, each step of rotation reveals a slightly different shape because different aspect is seen by our eyes.
- Then, form is a total visual appearance of a design, shape is its main identifying.
- We also identify form by size, color and texture.

FORM AND STRUCTURE

.....STRUCTURE

- Structure governs the way a form is built, or the way a number of form are put together.
- The external appearance of a form can be complex, while its structure is relatively simple.
- Sometimes, the internal structure of a form may not be immediately perceived. Once this is discovered, the form can be better understood.

- Smaller forms which are repeated with or without variation to produce a larger form are referred to as **unit forms**.
- A unit form may be made of smaller components, which can be called **sub- unit form**.
- A larger unit may be made of two or more unit forms, they are called **super- unit form**.

REPETITION AND GRADATION

UNIT FORM

- **Repetition** means that the unit forms are identical in shape, size, color and texture.
- Shape is the most important visual element of unit forms, so that we can have unit forms **repeated** in shape but not in size.
- **Gradation** is required a sequential arrangement to be recognized.
- We can have gradation in shape, with the shape changing slightly from one unit to the next. We can also get a **gradation** in size with a repeated units in shape.

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