DCA Codified Architectural Drawing

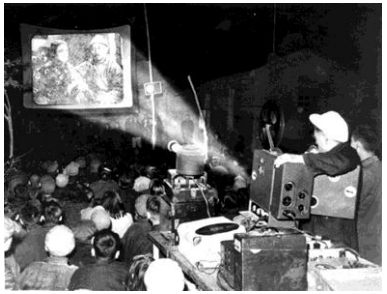
Theoretical support No. 02:

The orthogonal projection with multiple views

Introduction

The notion of projection is familiar to us

- The Cinema



- The slides

- The Chinese shadows

- The photographs

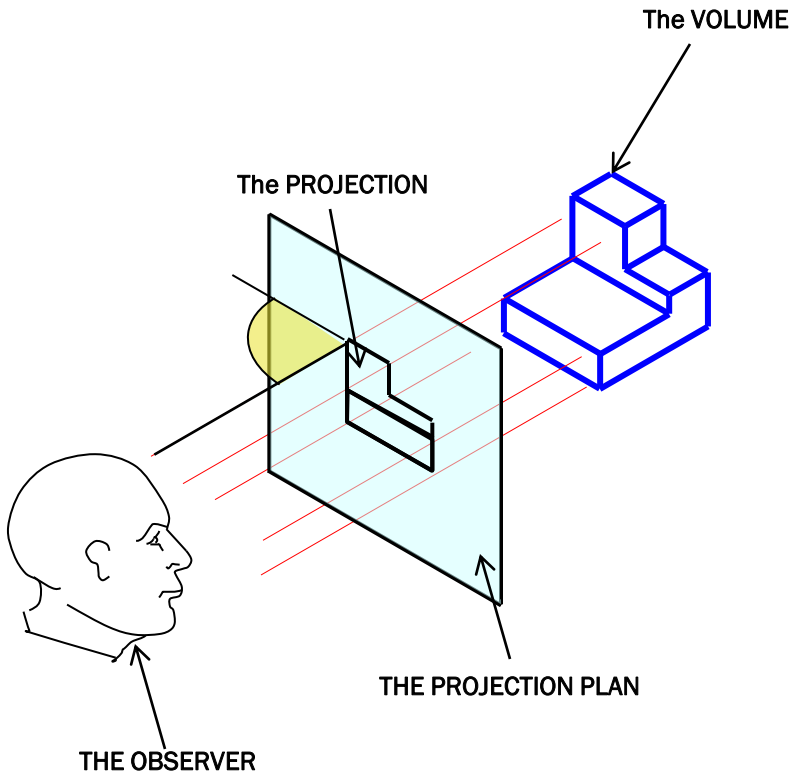
The orthogonal projection represents the viewsthe main ones in a separate way, while the3D projections represent an object in a wayfigurative..

1-Characteristics of the orthogonal projection

- In this type of projection, it is considered that the observer is located at infinity. The projections are then parallel to each other.

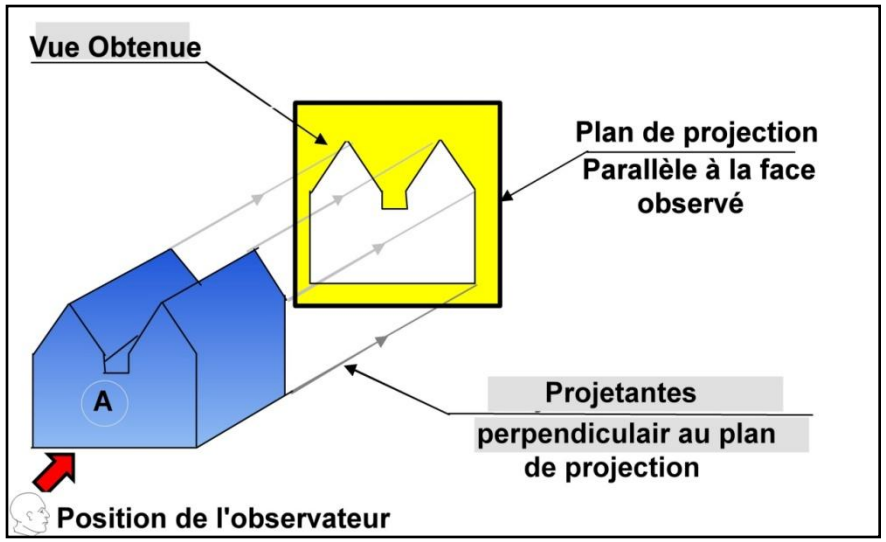
- The orthogonal projection makes it possible to reproduce a volume as it actually exists without reduction or distortion

- These projections are also orthogonal since the projections are perpendicular to the projection plane.



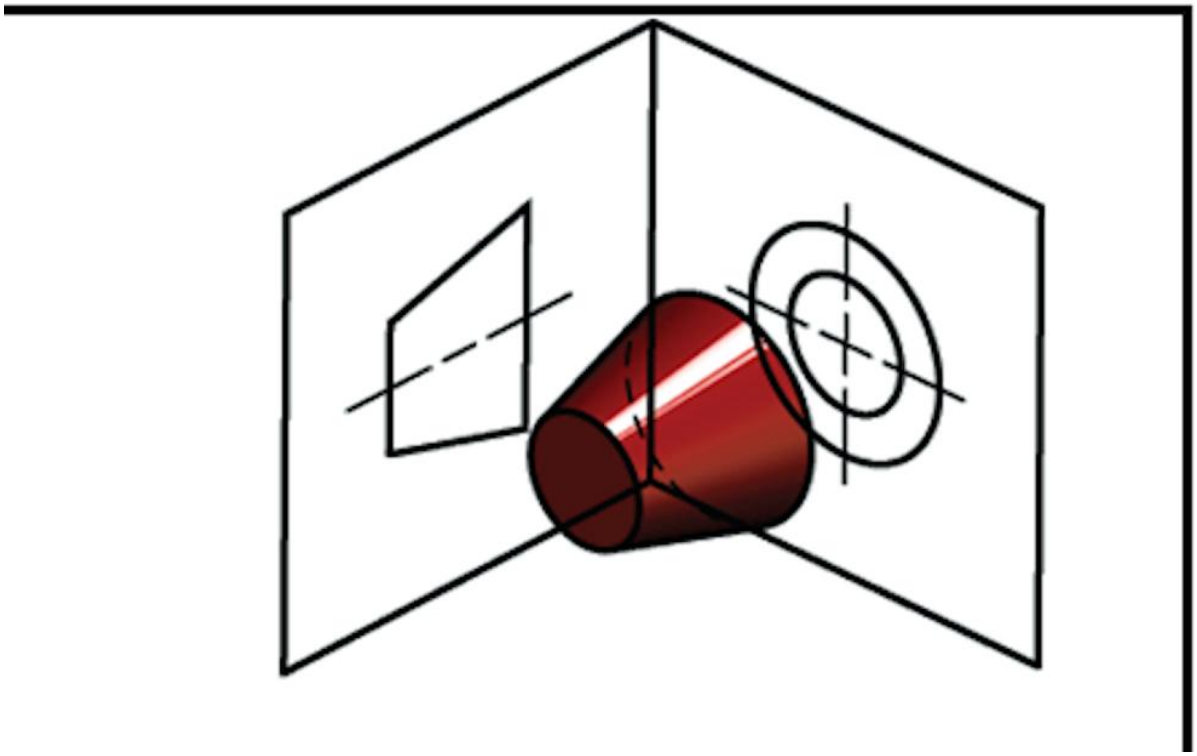
AMERICAN PROJECTION

2- Characteristics of the orthogonal projection



EUROPEAN PROJECTION

- The observer places himself perpendicularly to one of the faces of the volume to be drawn.
- The observed face is then projected and drawn in a projection plane parallel to this face and located behind the volume for the European projection.
- The drawn plane view obtained is an orthogonal projection of the object.



3-Choice of views :

- All volumes can be observed in six different directions
- we must select those that best show the essential contours or the shapes of the volume

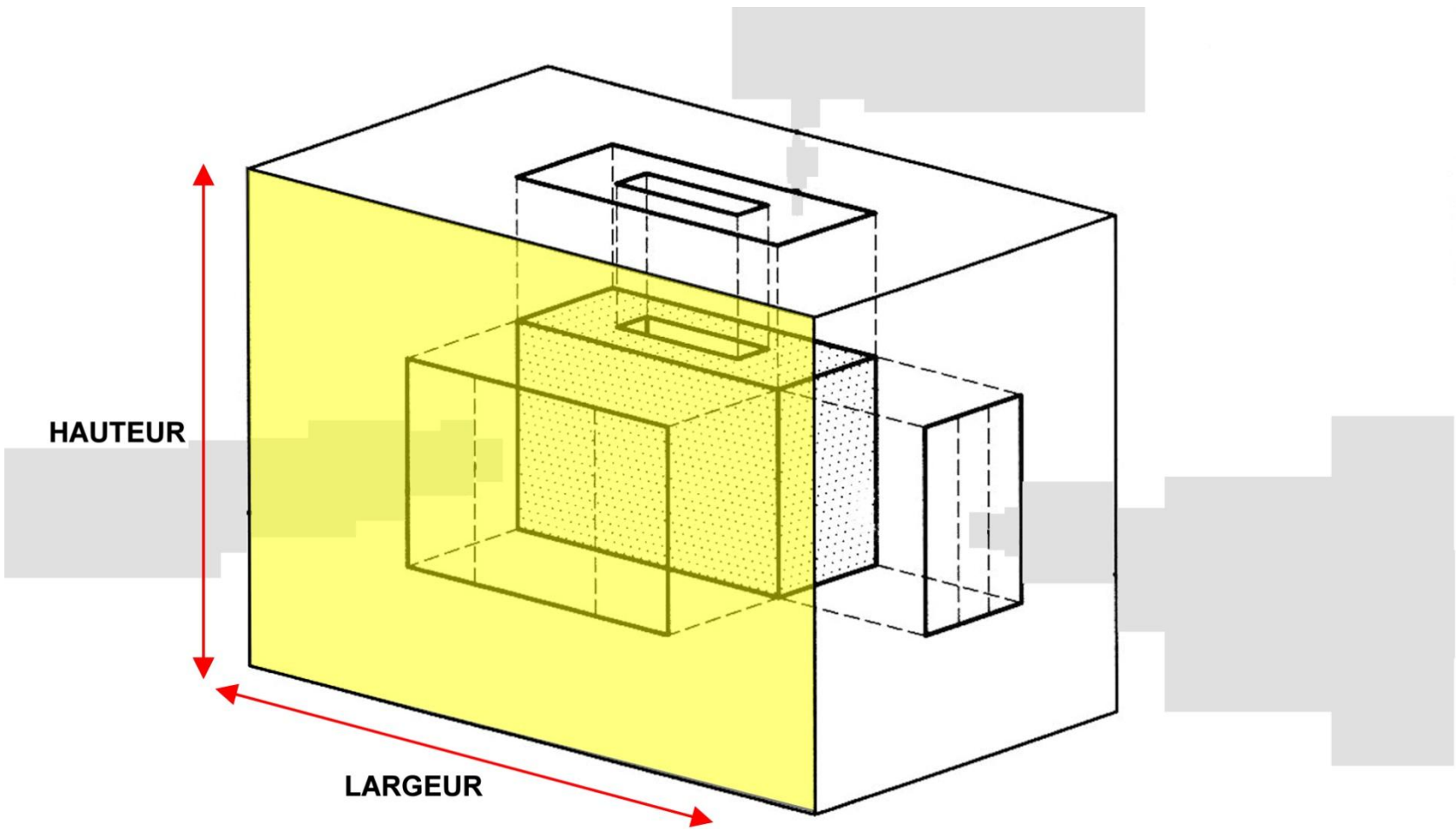
-The types of views are :

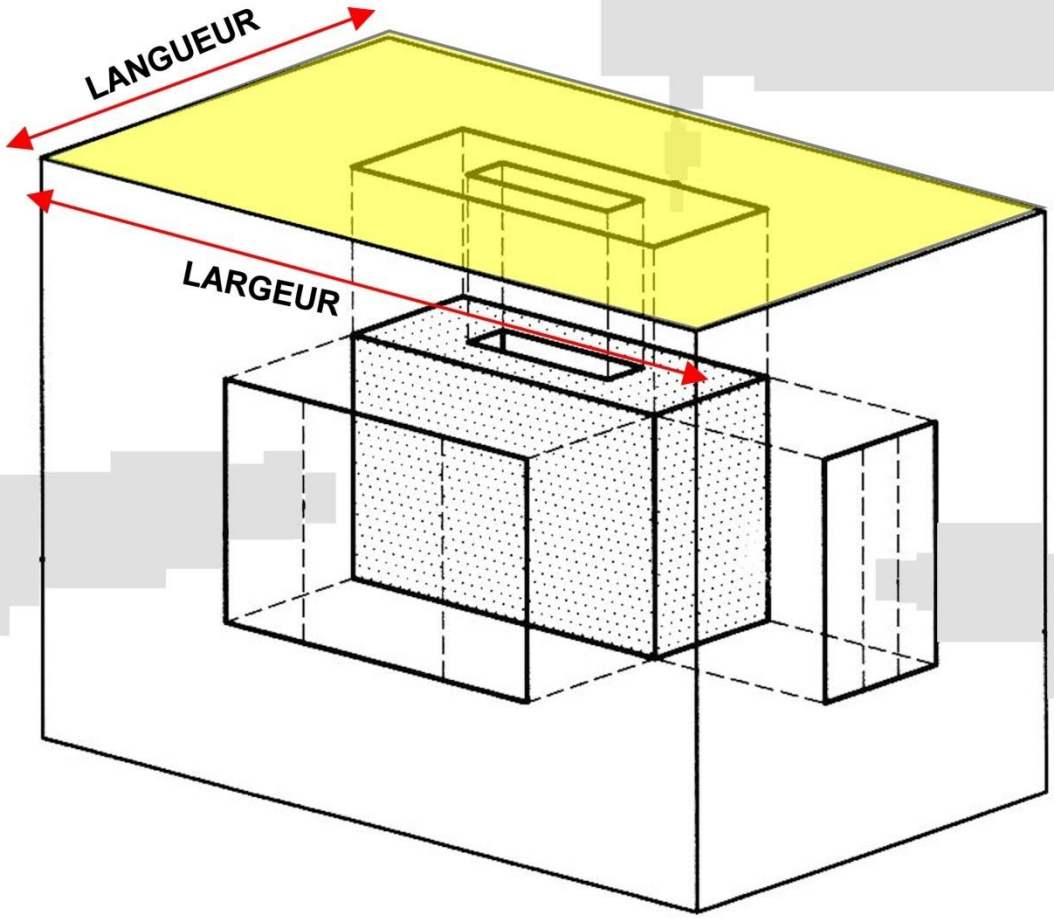
Elevation (front view): It represents the main view of the volume and gives the lengths and heights.

Plan (top view): It gives the lengths and widths of the volume.

Profile (side view): It gives the main and additional heights and widths.

Other views: rear, below.


HAUTEUR
LARGEUR


LANGUEUR
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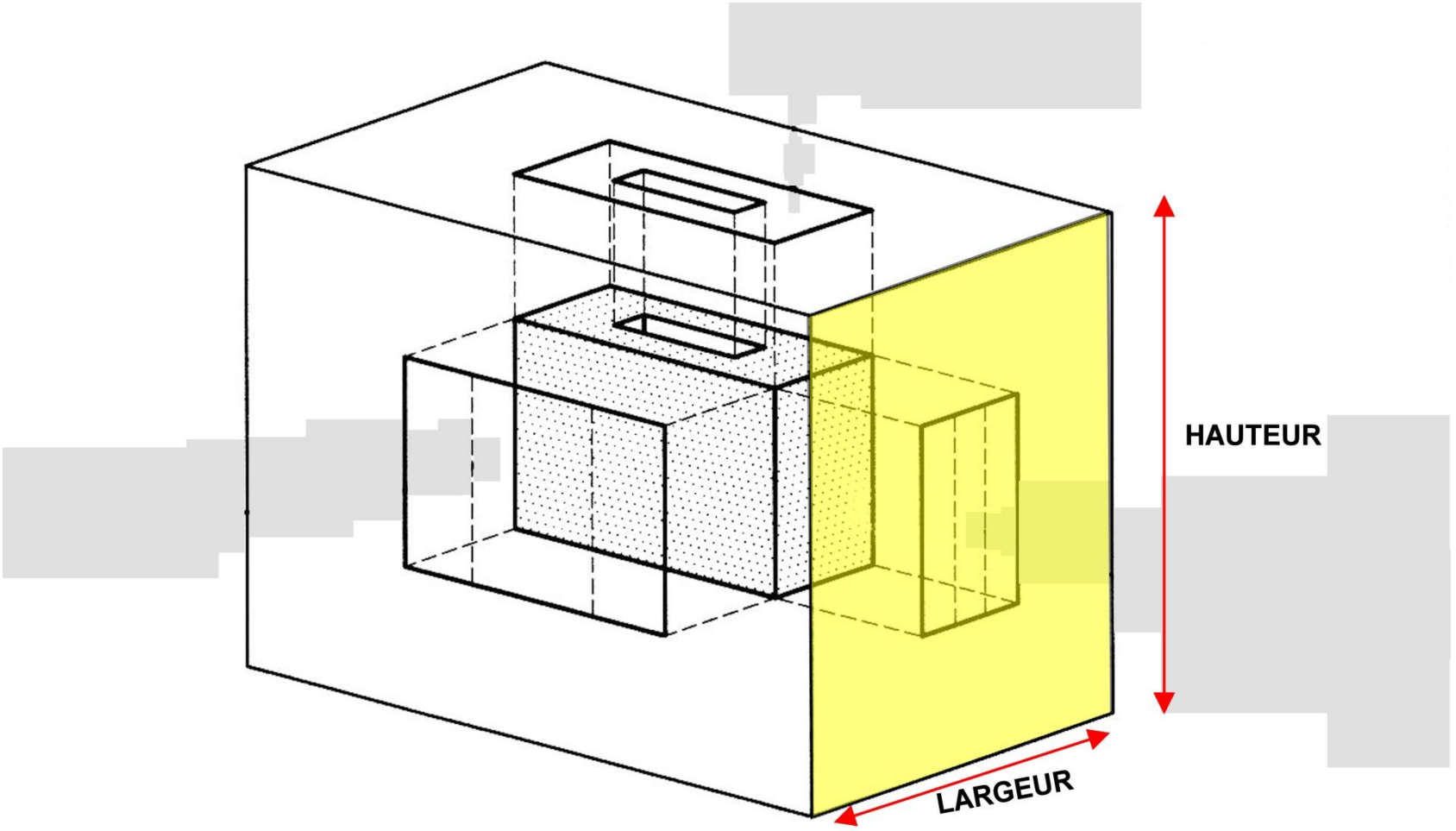
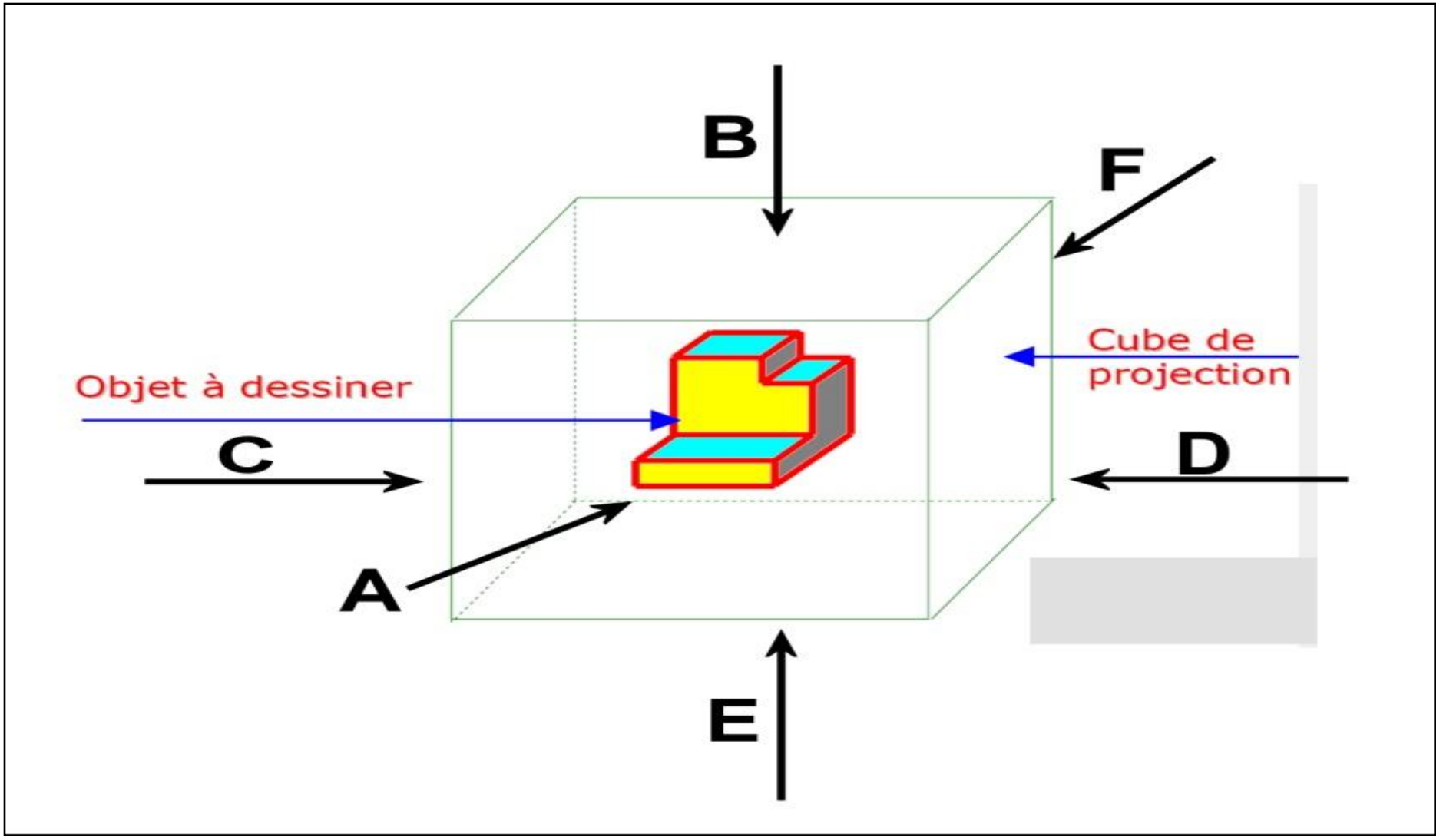

HAUTEUR
LARGEUR

5- european projection :

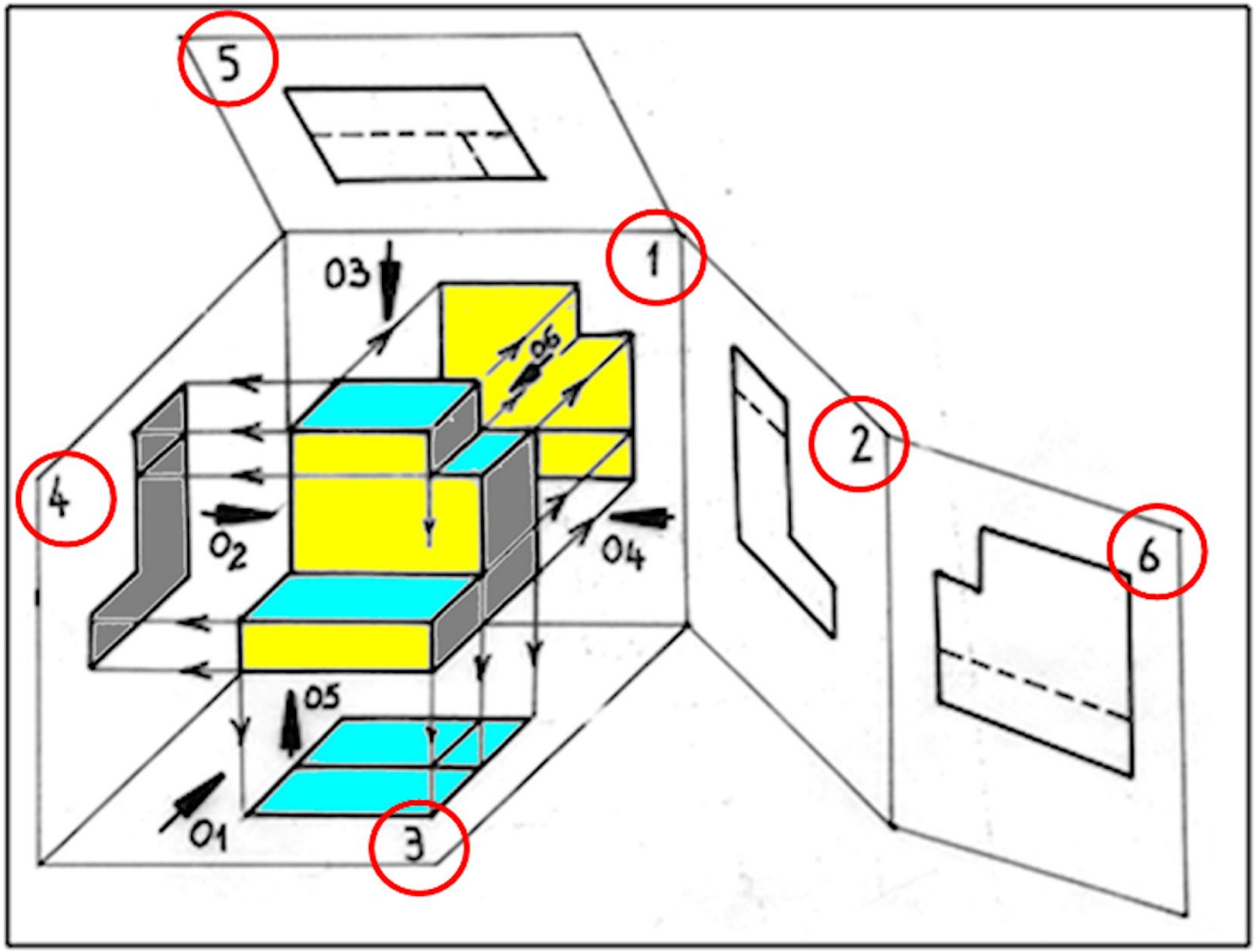
- In the European projection, we imagine that the volume is placed between the observer and the projection plane so that the top view is found below the elevation, that the right profile appears to the left of the elevation while the left profile will be to the right of the elevation.

- The volume to be represented is imagined inside a projection cube and the volume is successively projected onto the faces of the box according to the principle of orthogonal projection (parallel projection and located behind the volume).

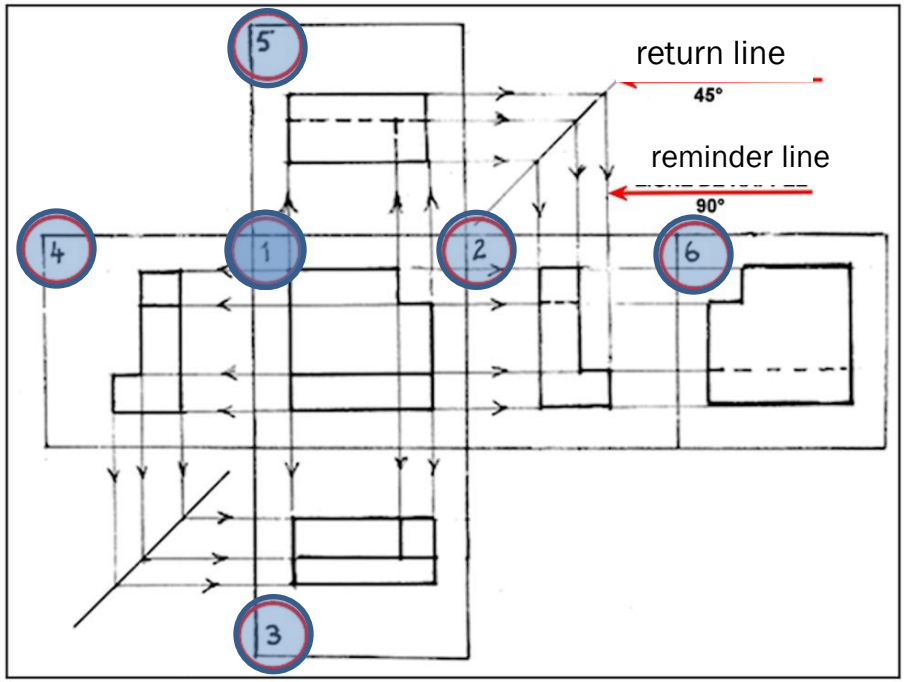

B
F
Cube de
projection
Objet à dessiner
C
D
A
E

5-1 Layout of the views according to the European projection :

- The box thus led according the volum



- The reference lines show the correspondence between the views:
- The front, left, right and rear view are a horizontally.
- The front, bottom and top vieware a vertically.
- The 45° line (return line) faci theconstruction and layout of the viewso and profile.
- The horizontal projection of the linesfro plane on the axis at 45° allows to build the view.



position de l'observateur	dénomination de la vue	position de vue par rapport à la vue de face	repère de la vue	choix des vues
En face	vue de face		1	La vue de face (vue principale) représente l'objet dans sa position d'utilisation Le nombre des vues est limite au minimum suffisent pour définir l'objet sans ambiguïté
A droite	vue de droite	A gauche	4	
A gauche	vue de gauche	A droite	2	
Au dessous	vue de dessous	Au dessus	3	
Au dessus	vue de dessus	Au dessous	5	
Arrière	vue d'arrière	A droite	6	