



# *technical drawing*

school of art, design and architecture  
nust – spring 2011

<http://www.youtube.com/watch?v=q6mk9HPxWvo>

<http://www.youtube.com/watch?v=bnu2GB7w4Qs>

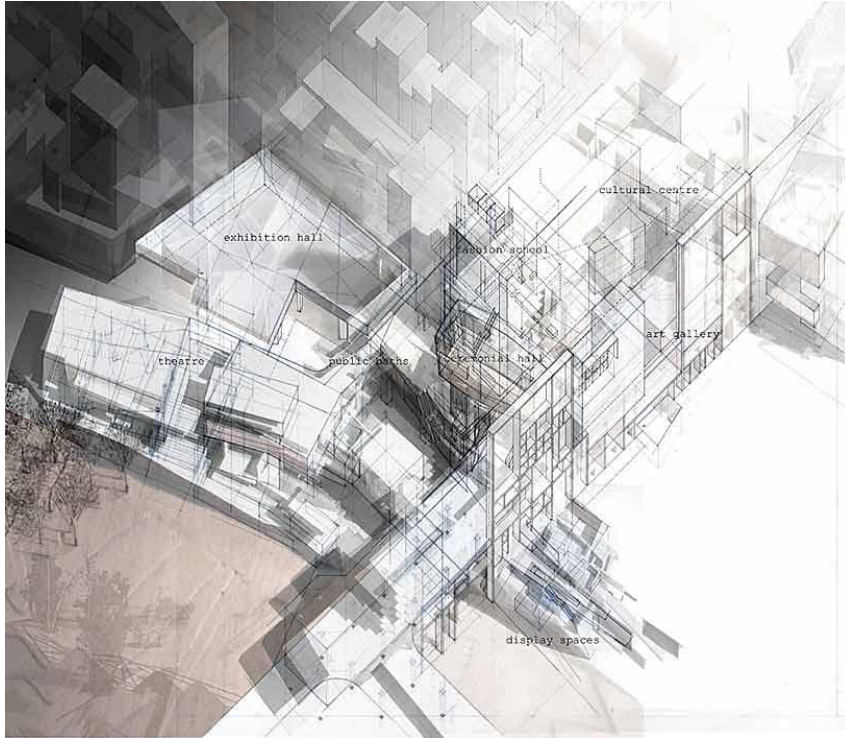


Objective abstraction  
- axonometric view

# technical drawing introduction

## what is an axonometric drawing?

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Axonometric means to **measure along axes**.

Axonometric projection shows an image of an object as viewed from a skew direction in order to reveal more than one side in the same picture.



# technical drawing introduction

## what is an axonometric drawing?

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### Parallel projection



Parallel projections have lines of projection that are parallel both in reality and in the projection plane (drawing).



# technical drawing introduction

## what is an axonometric drawing?

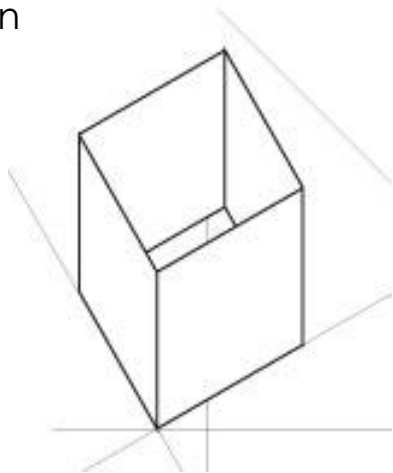
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Parallel projection



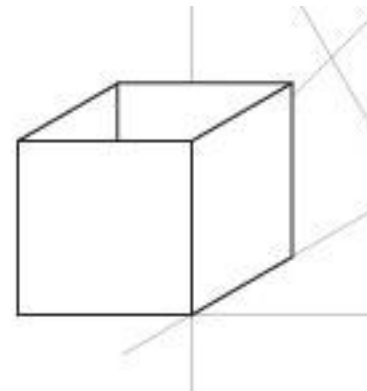
### orthographic

In Orthographic projection lines are orthogonal (making an angle of 90 degrees) to the projection



### oblique

Oblique projection is created by drawing one side of the object facing the observer. This side is always drawn as a true shape



# technical drawing introduction

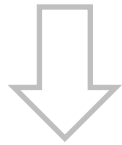
## what is an axonometric drawing?

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Parallel projection



orthographic

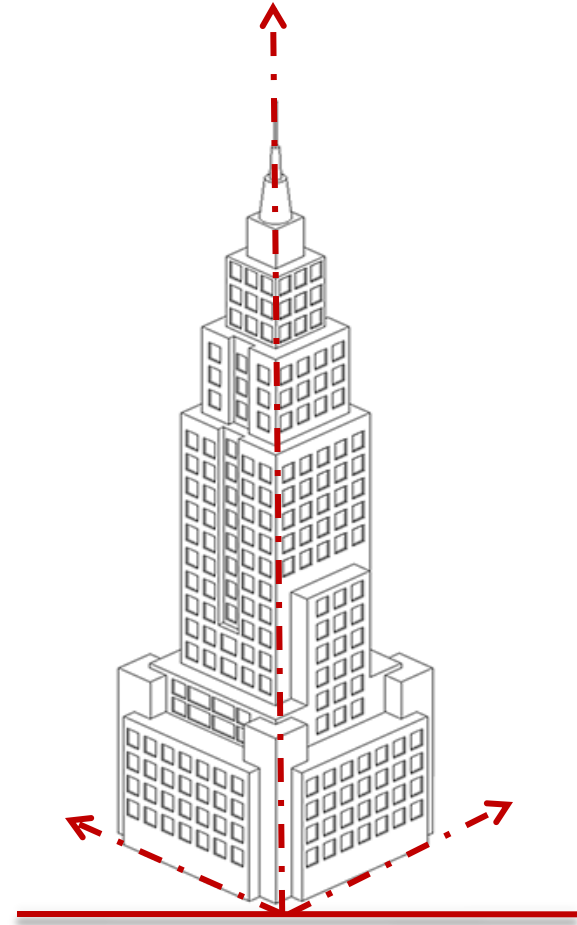


axonometric

Axonometric projection is a type of orthographic projection, used to create a pictorial drawing of an object, where the object is rotated along one or more of its axes relative to the plane of projection.



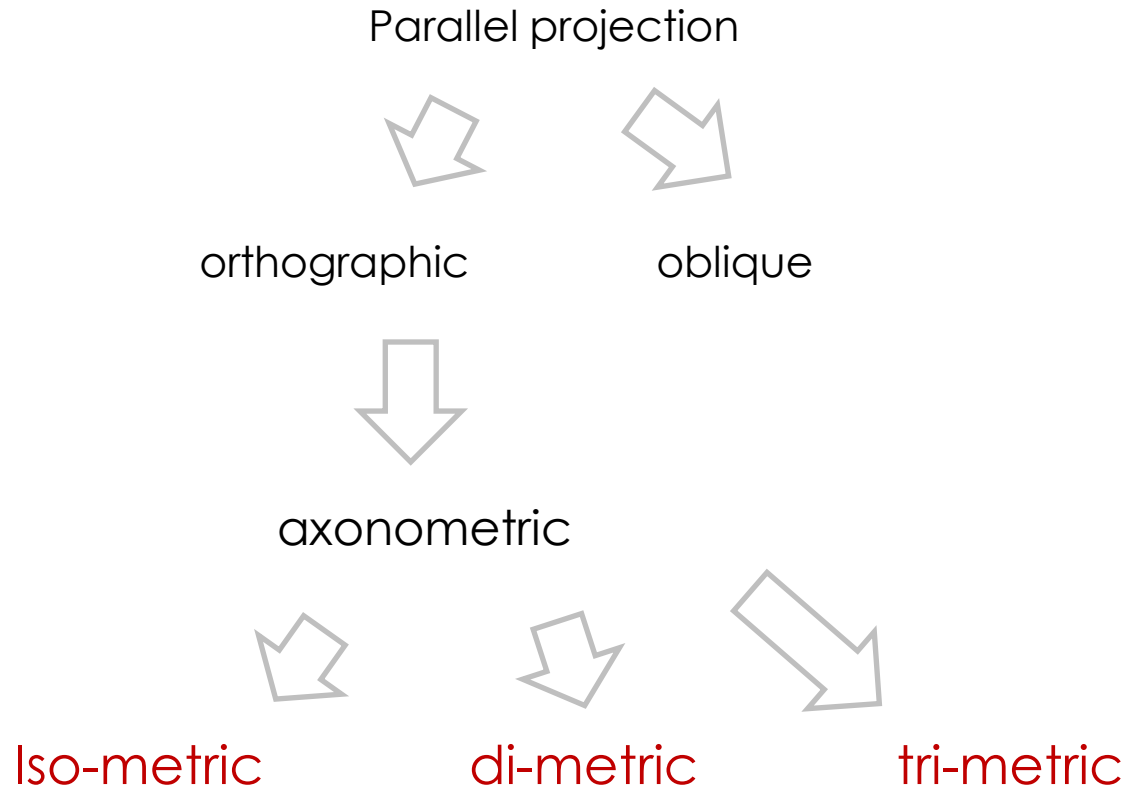
plane of projection



# technical drawing introduction

## what is an axonometric drawing?

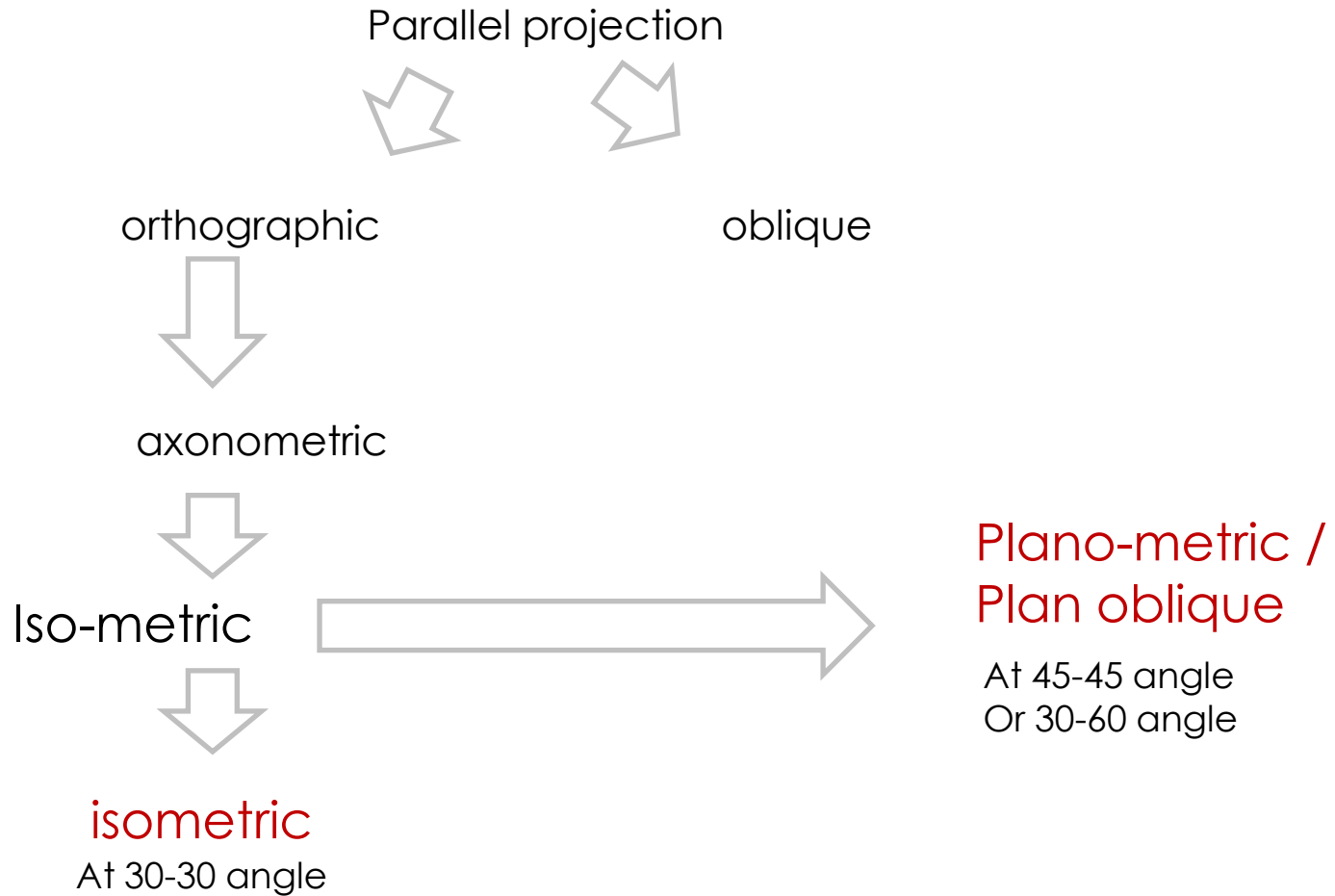
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# technical drawing introduction

## what is an axonometric drawing?

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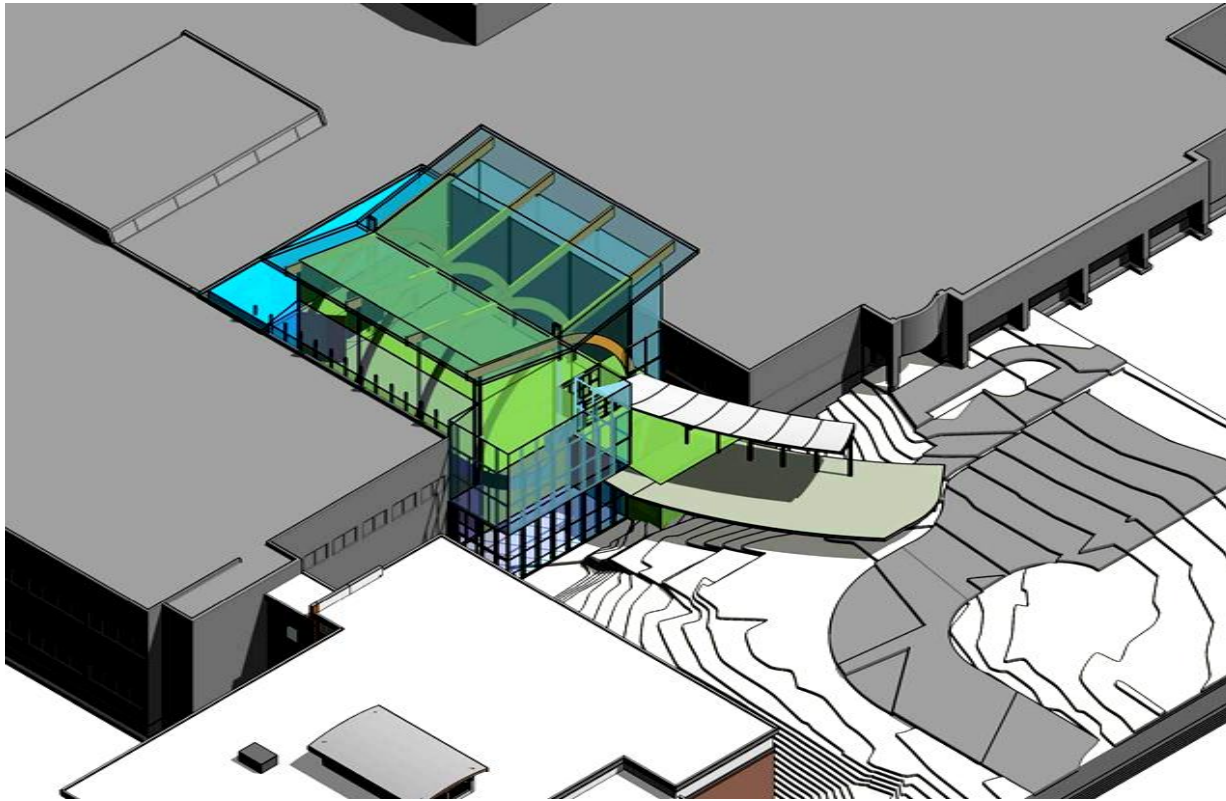




# technical drawing introduction

## what is an isometric drawing?

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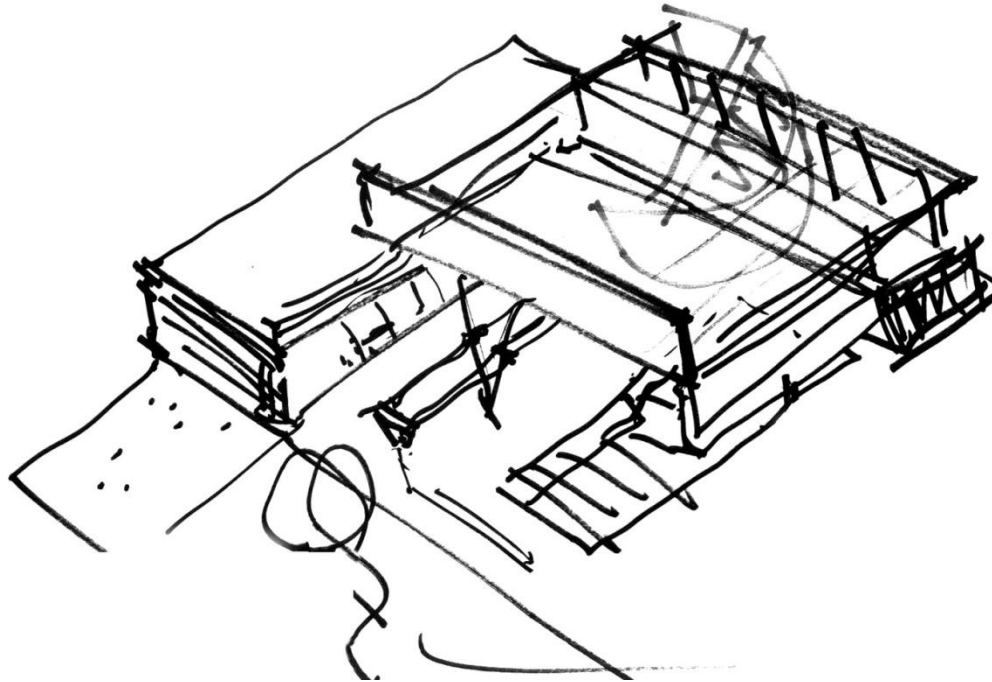
An **isometric drawing** is an angled drawing in which the horizontal lines are drawn at a **30 degree** angle and the vertical lines are left straight.



# technical drawing introduction

## what is an isometric drawing?

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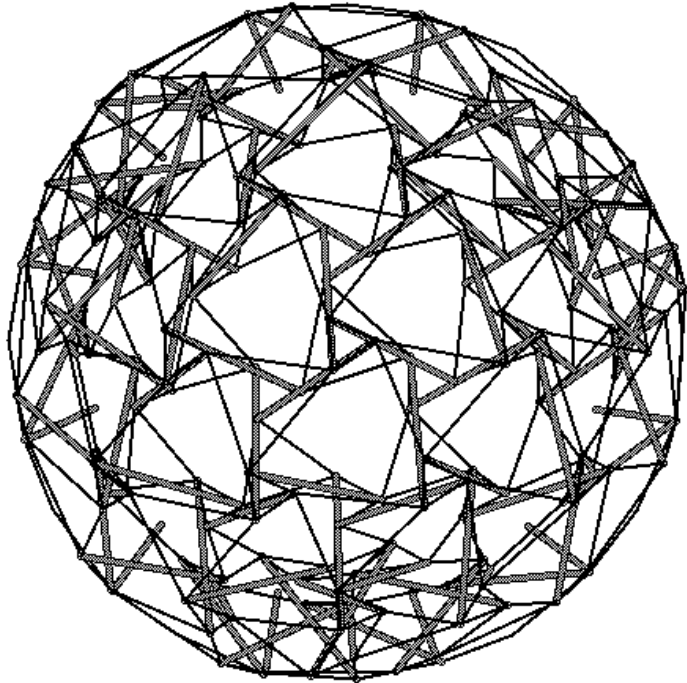
It is a simple way of representing a three dimensional object, keeping the **elements to scale** and showing the relationship between several sides of the same object, so that the complexities of a shape can be clearly understood.



# technical drawing introduction

## what is an isometric drawing?

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As a result, an isometric drawing is simply a picture of an object viewed at an angle.

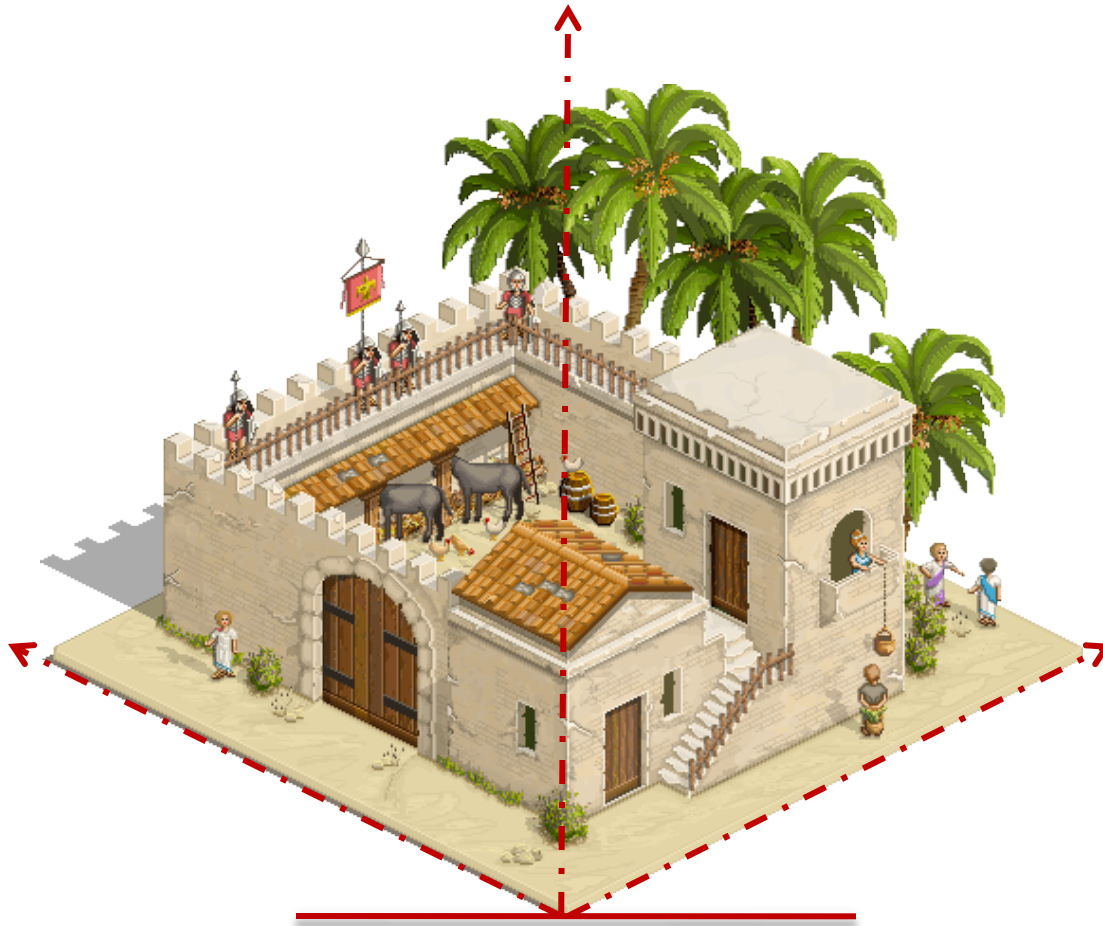
**D**

Intro to technical drawing  
isometric view

# technical drawing introduction

How to draw an isometric drawing?

## Drawing isometric



Isometric sketches begin with defining an isometric axis, one vertical and two drawn at 30 degrees from the horizontal.

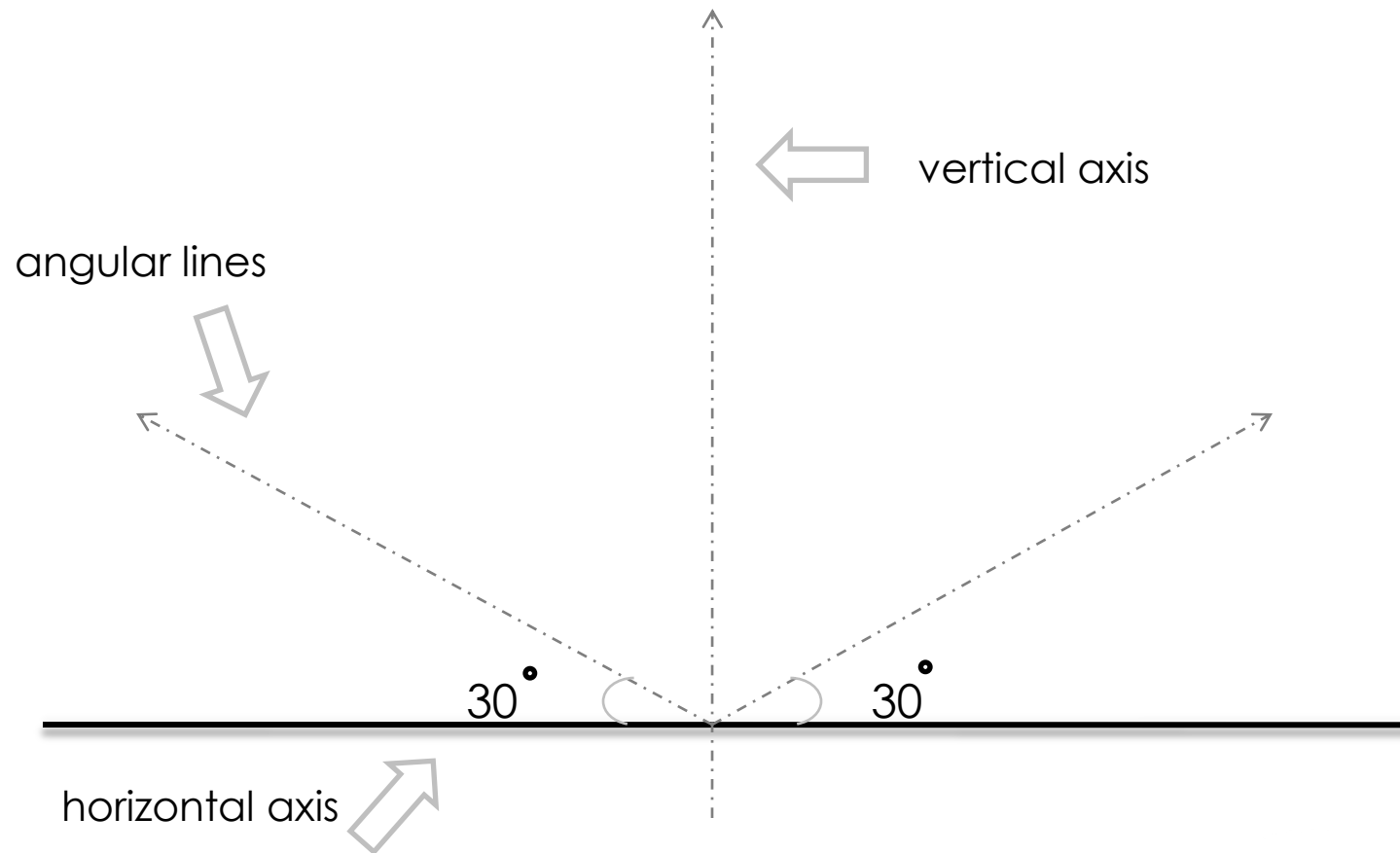


Intro to technical drawing  
isometric view

# technical drawing introduction

## Components of an isometric drawing

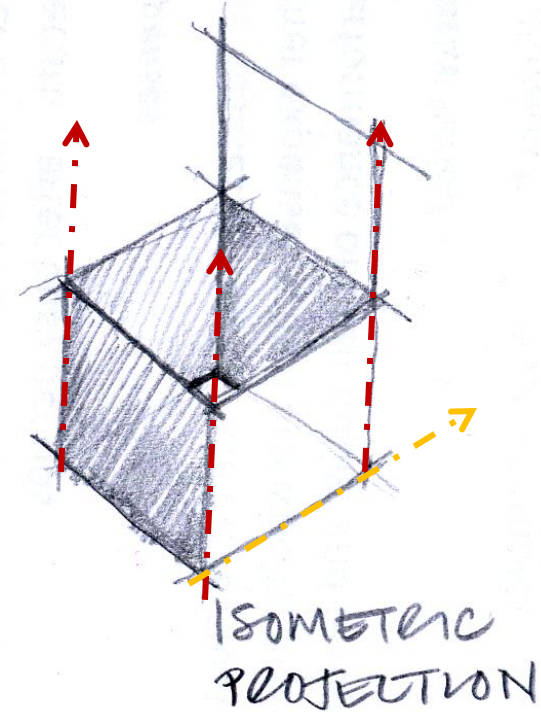
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# technical drawing introduction

## How to draw an isometric drawing?

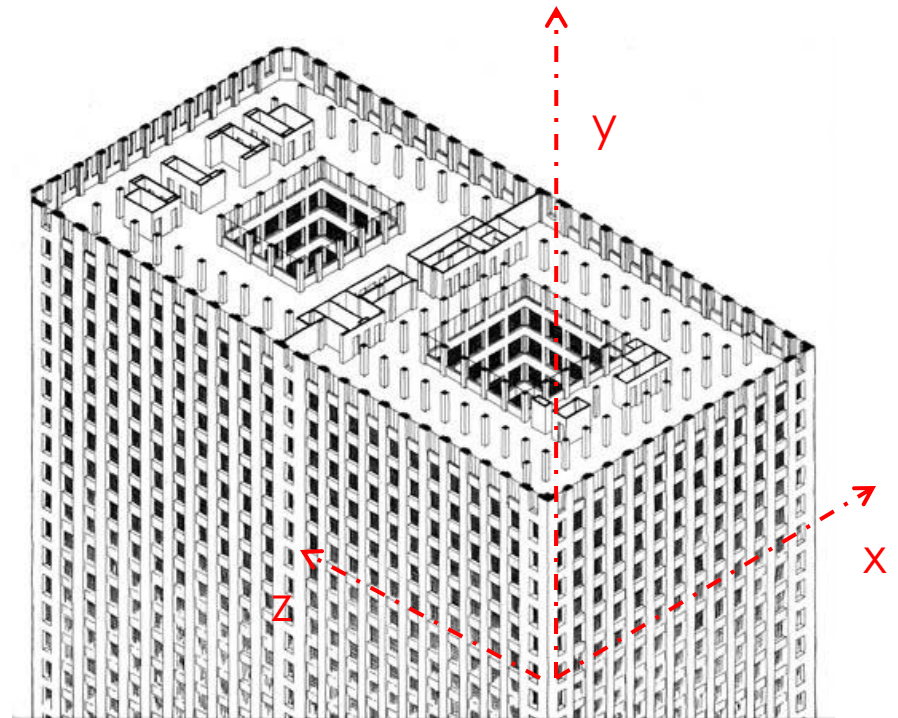
In an isometric drawing, the object's **vertical lines are drawn vertically**, and the horizontal lines in the width and depth planes are shown at **30 degrees** to the horizontal.



# technical drawing introduction

## How to draw an isometric drawing?

These three lines of the isometric axis represent the three primary dimensions of the object: **width**, **height**, and **depth**.



# technical drawing introduction

## How to draw an isometric drawing?

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When drawn under these guidelines, the lines parallel to these three axes are at their **true (scale) lengths**. Lines that are not parallel to these axes will not be of their true length.

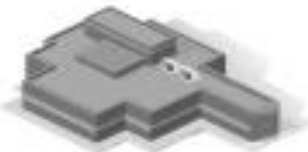
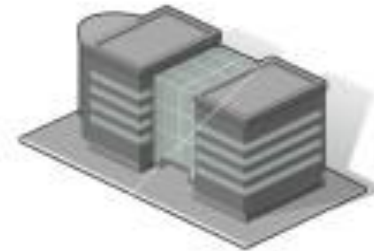
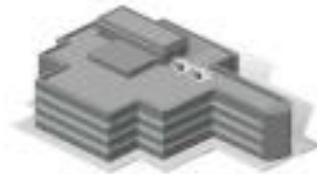


# technical drawing introduction

How to draw an isometric drawing?

For example...

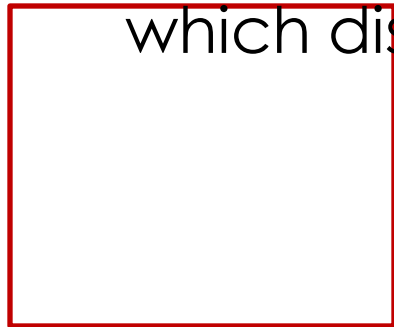
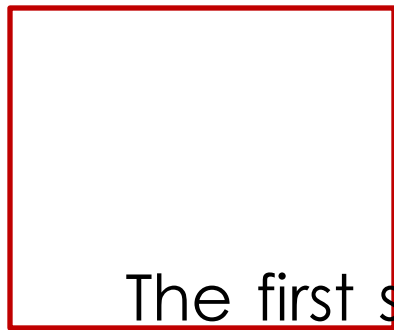
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# technical drawing introduction

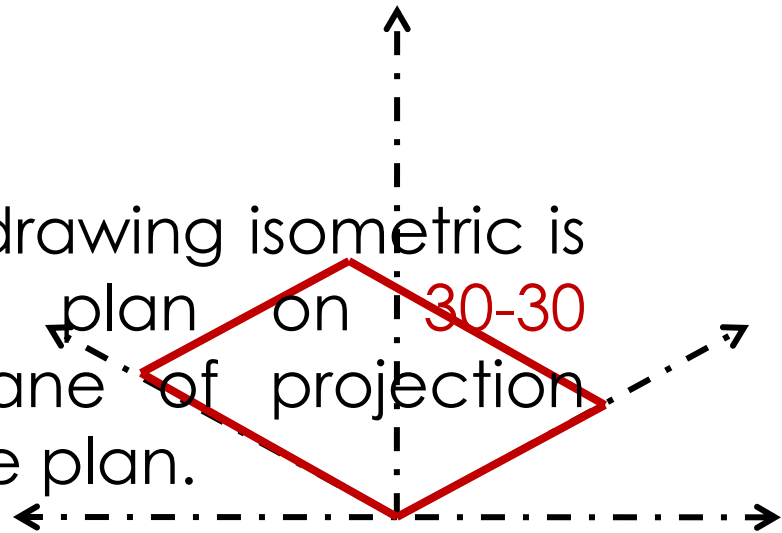
## drawing plan in isometric

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elevation

The first step in drawing isometric is to rotate the plan on **30-30 degrees** on plane of projection which distorts the plan.



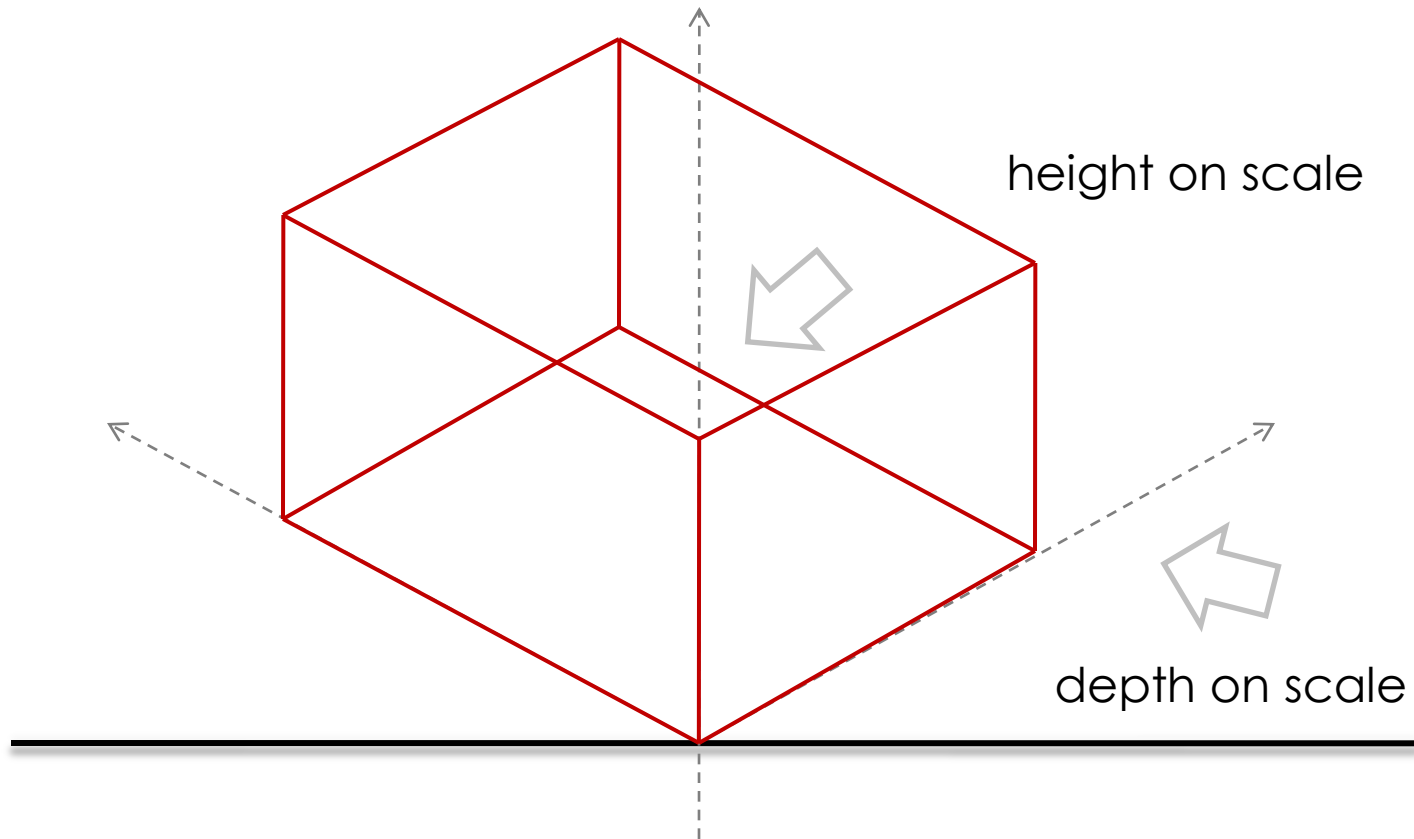
Plan in isometric



# technical drawing introduction

## How to draw an isometric drawing?

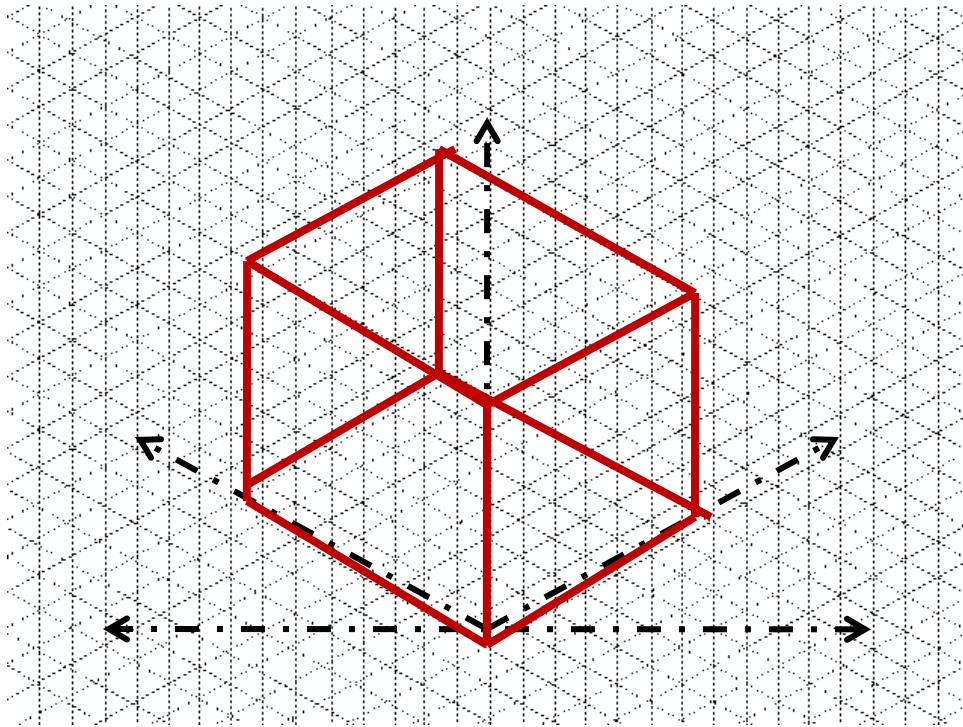
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# technical drawing introduction

## how to draw an isometric drawing?

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Isometric graph paper can also be used for making such drawings.



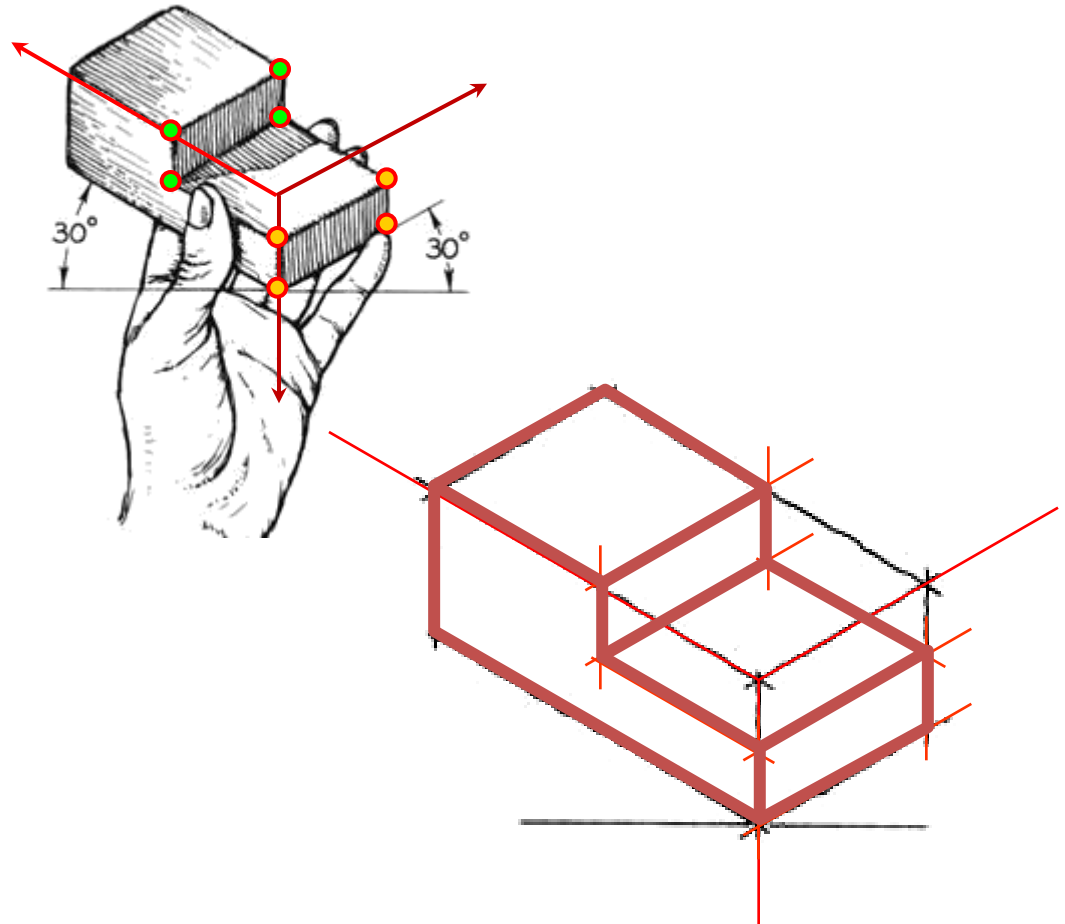
# technical drawing introduction

## Sketch from an actual object

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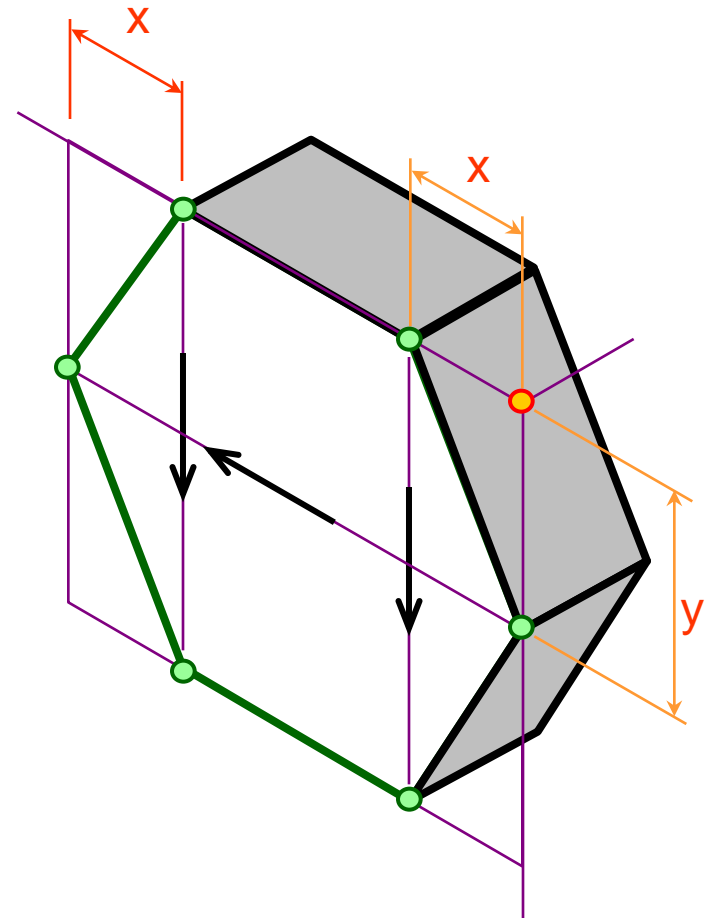
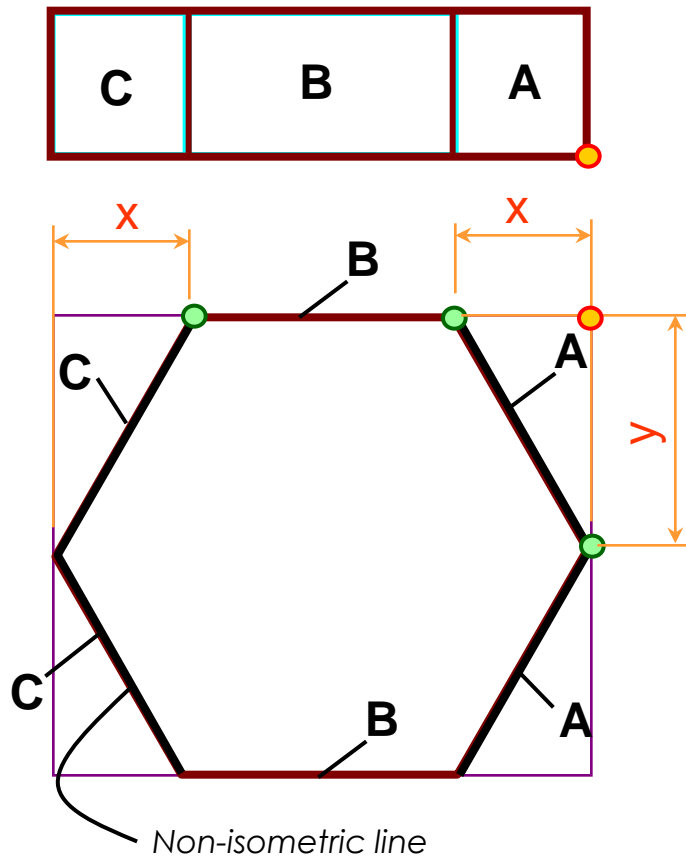
steps

1. Positioning object.
2. Select isometric axis.
3. Sketch enclosing box.
4. Add details.
5. Darken visible lines.



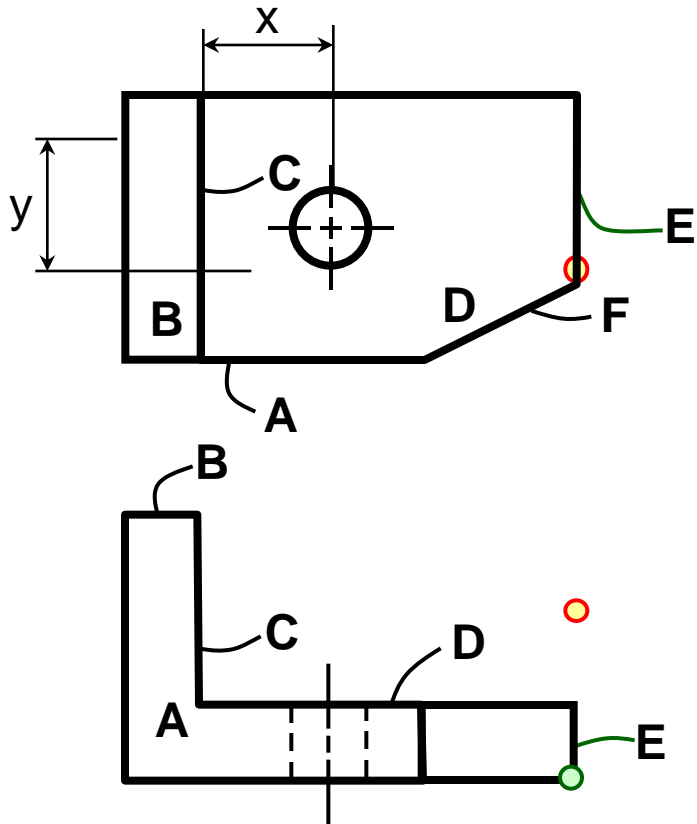
# technical drawing introduction

## Object having inclined surface



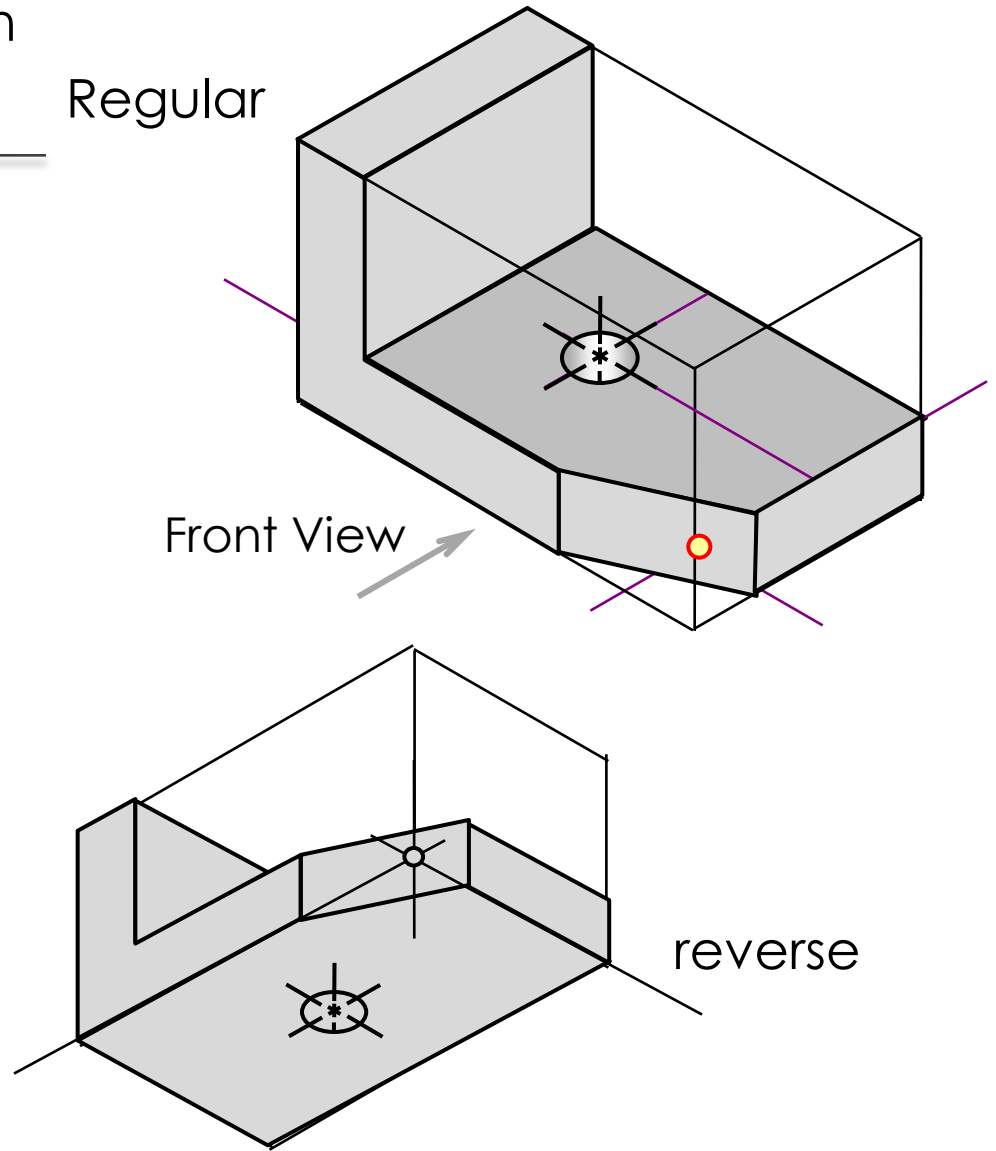
# technical drawing introduction

## Drawing isometric



Regular

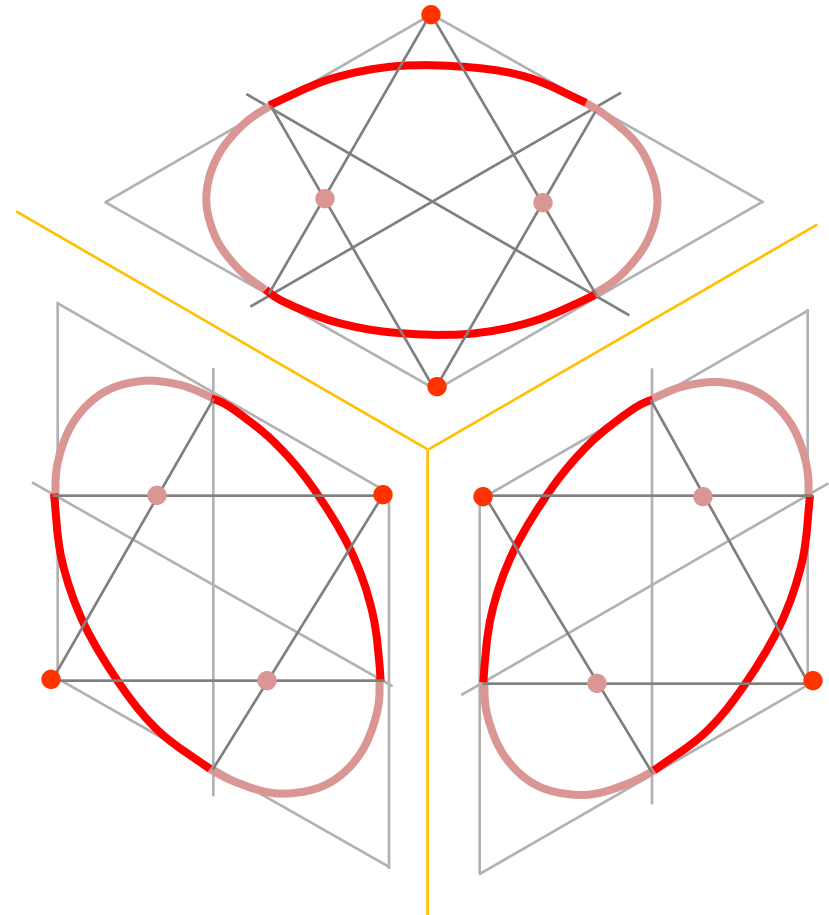
Front View



## Circle & Arc in Isometric

*Four-centre method* is usually used when drawing an isometric ellipse.

1. Locate the centre of an ellipse.
2. Construct an isometric square.
3. Construct a perpendicular bisector from each tangent point.
4. Locate the four centers.
5. Draw the arcs with these centers and tangent to isometric square.



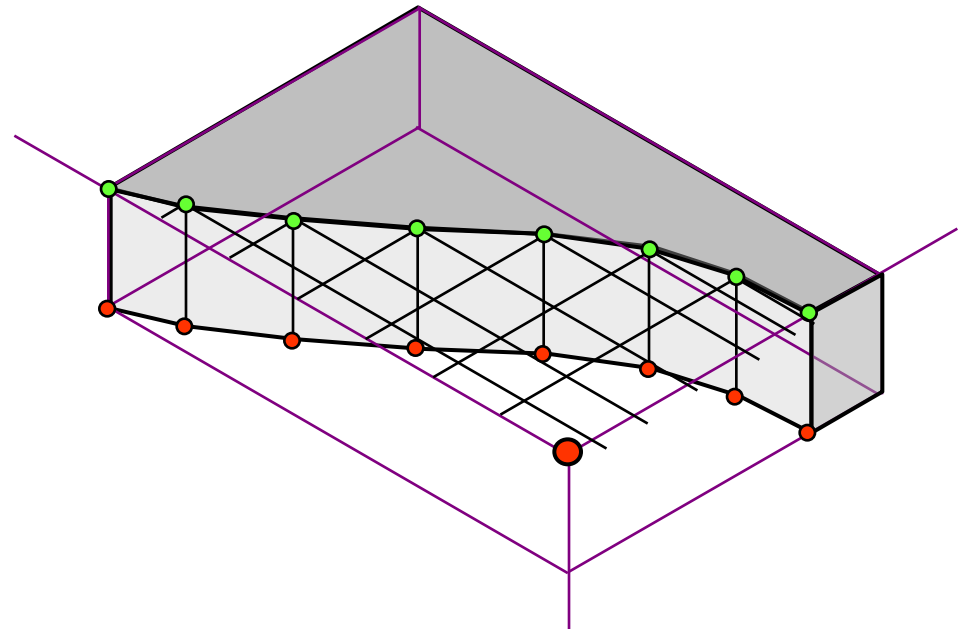
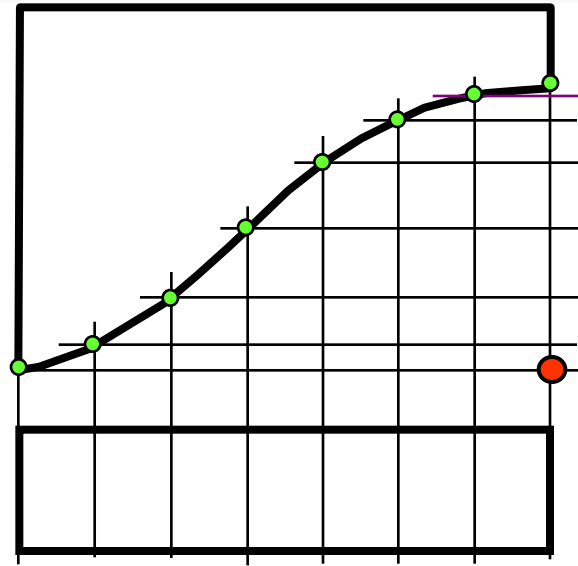


# technical drawing introduction

## Irregular Curve in Isometric

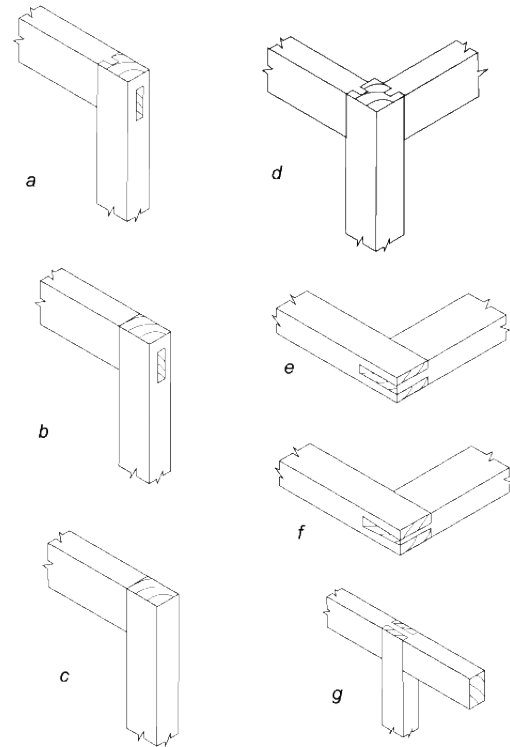
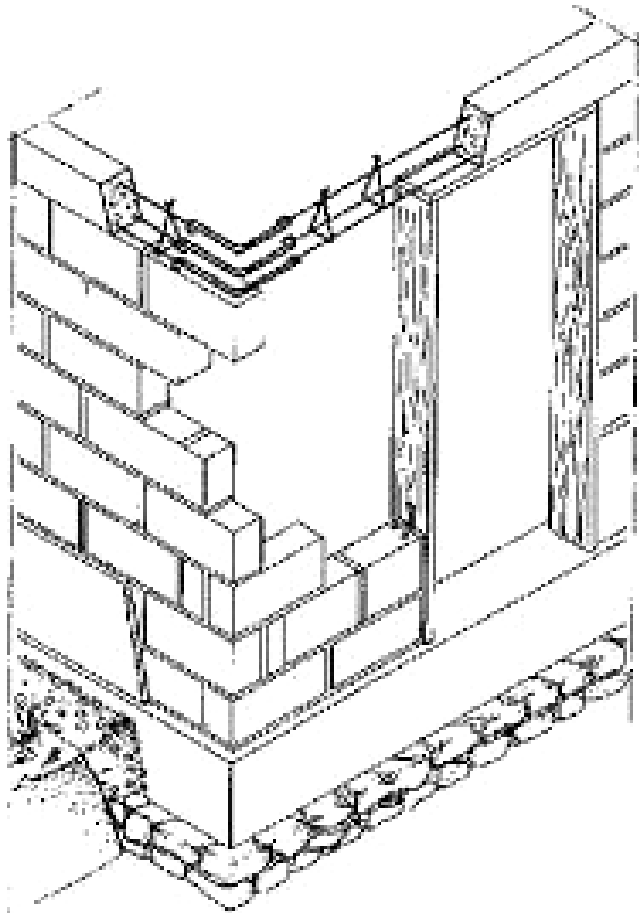
### Steps

1. Construct points along the curve in multi view drawing.
2. Locate these points in the isometric view.
3. Sketch the connecting lines.



# technical drawing introduction

## Example in joinery



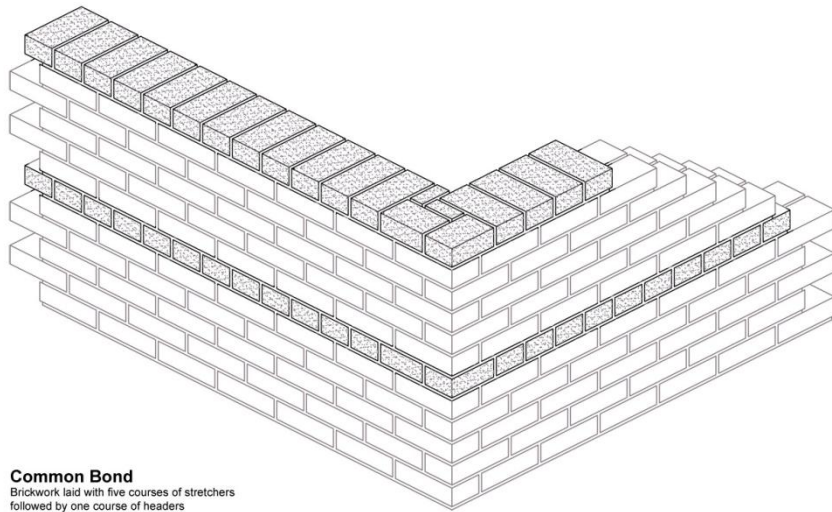
Isometric views are very useful to explain construction details.



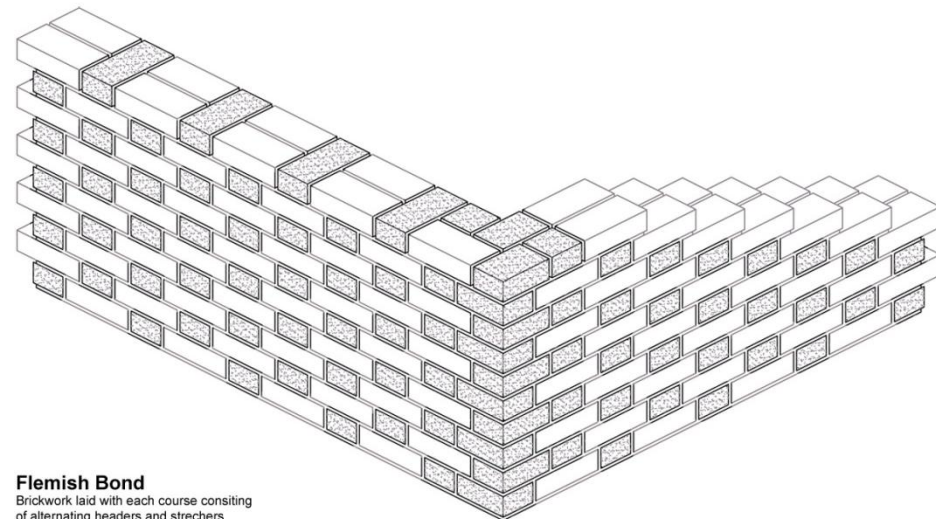
# technical drawing introduction

## Example in joinery

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**Common Bond**  
Brickwork laid with five courses of stretchers followed by one course of headers



**Flemish Bond**  
Brickwork laid with each course consisting of alternating headers and stretchers

Isometric views of different types of brick bonds.

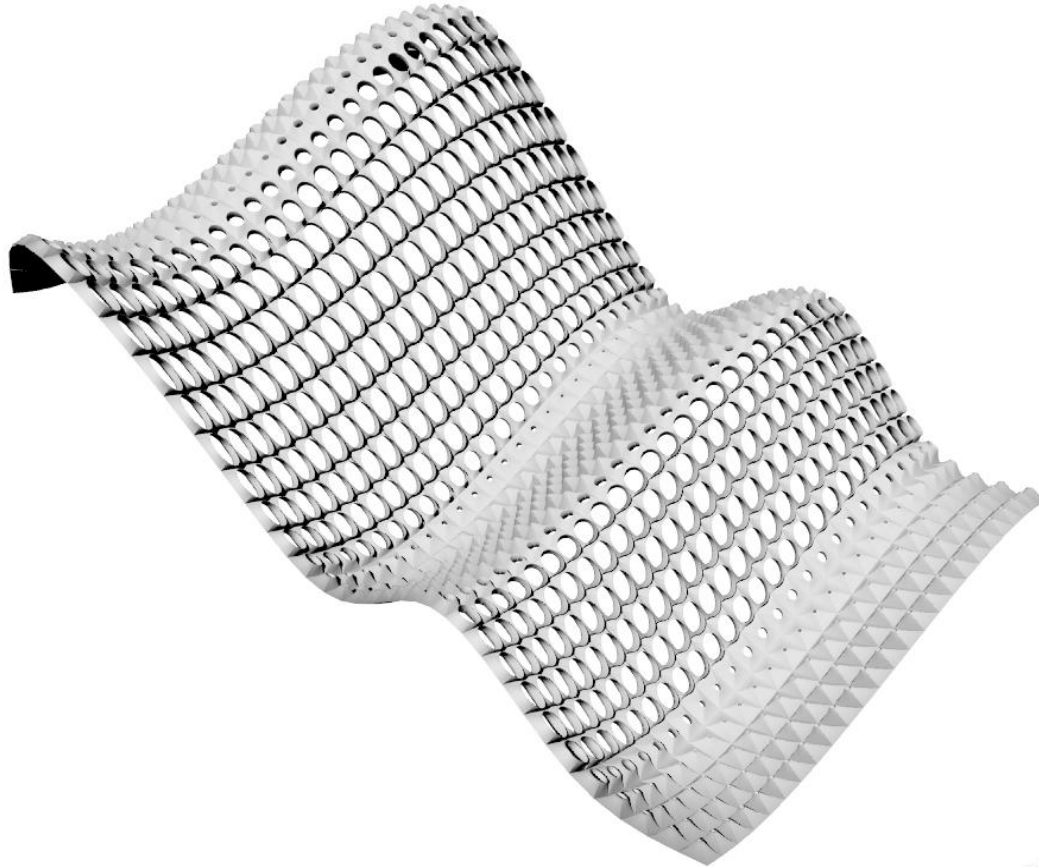


# attention – assignment 7

## Create an isometric view

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Create an isometric view of your home.



**D**

Intro to technical drawing  
isometric view

If you cannot help worrying,  
remember that worrying  
cannot help you

technical drawing introduction  
picture of the day



**D**

Intro to technical drawing  
sada, spring 2010

technical drawing introduction  
building of the day



Egg building, Mumbai



technical drawing introduction

video of the day –

DESIGN PHILOSOPHY

[can you draw? Part 7]



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sada, spring 2010

[http://www.youtube.com/watch?v=anfLSnAL\\_Sw&feature=related](http://www.youtube.com/watch?v=anfLSnAL_Sw&feature=related)





# DRAWING

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*a mean to design reasoning*