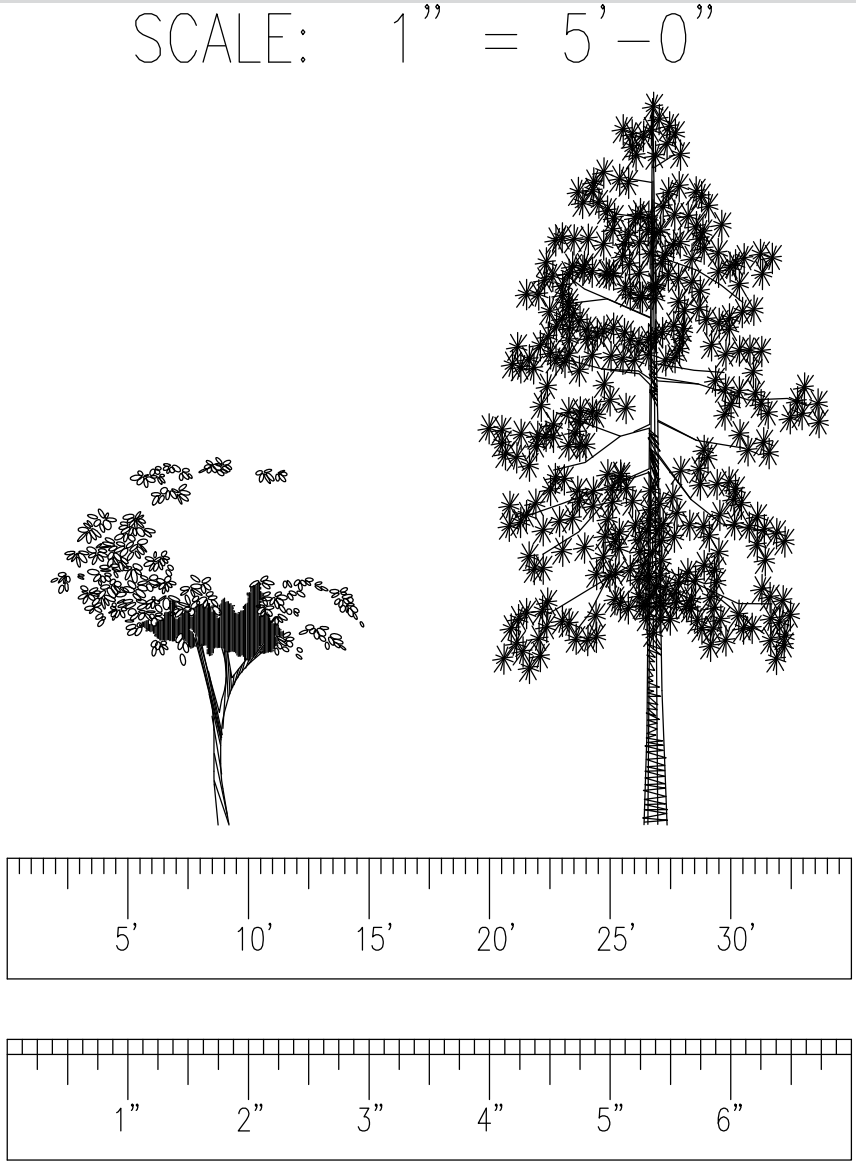
Last Time: Scale

(Representing things smaller than they really are)

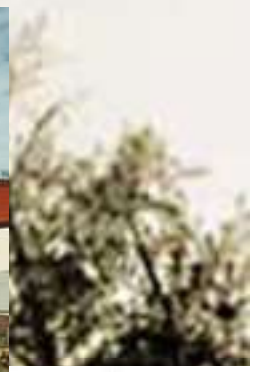


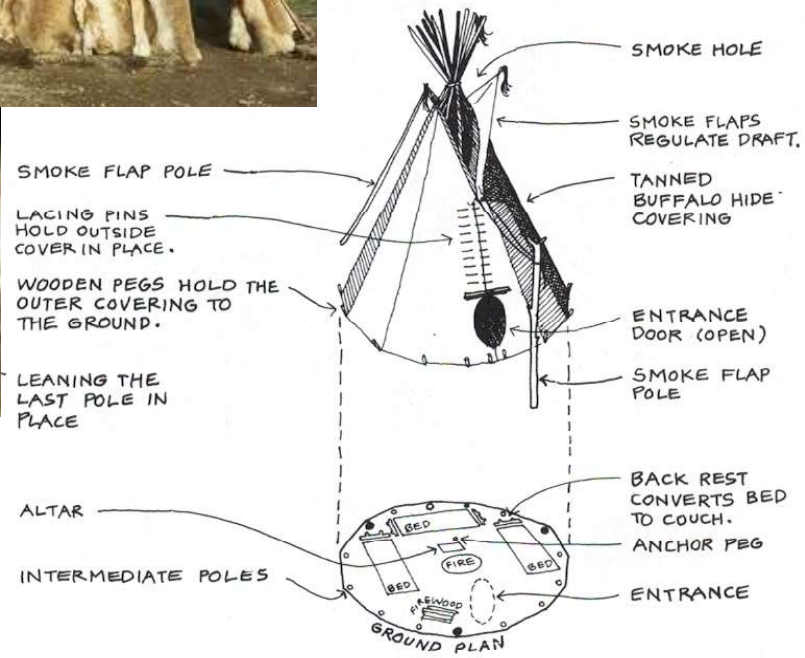
Is a MODEL built at full scale?

Are architectural drawings drawn at full SCALE?

Last Time: Native American Dwellings

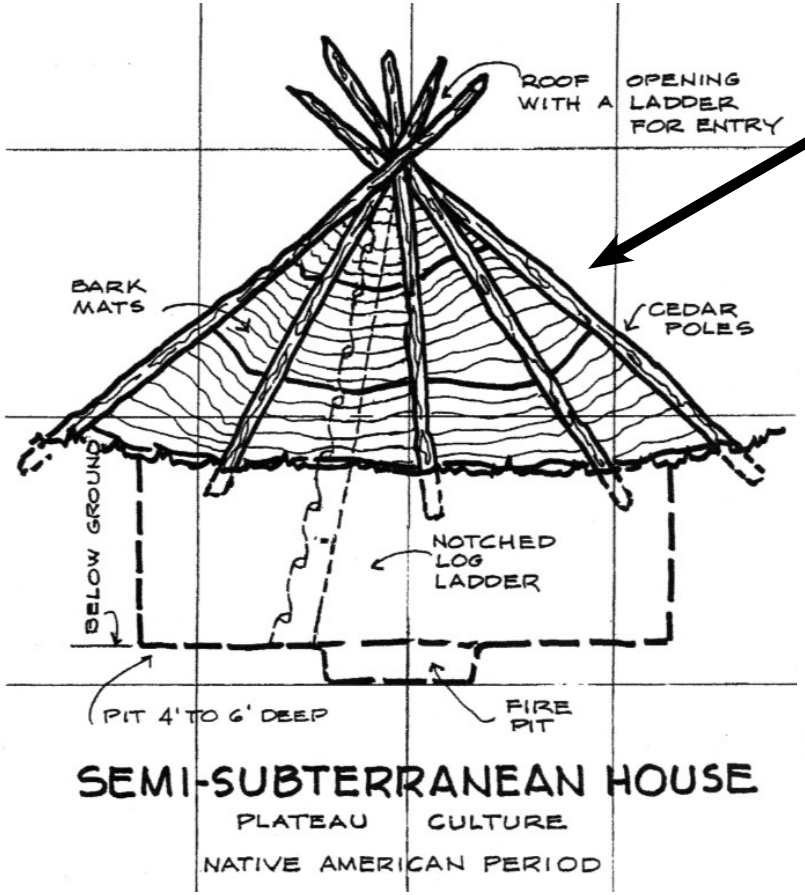
(Tipi? Or Tepee?)





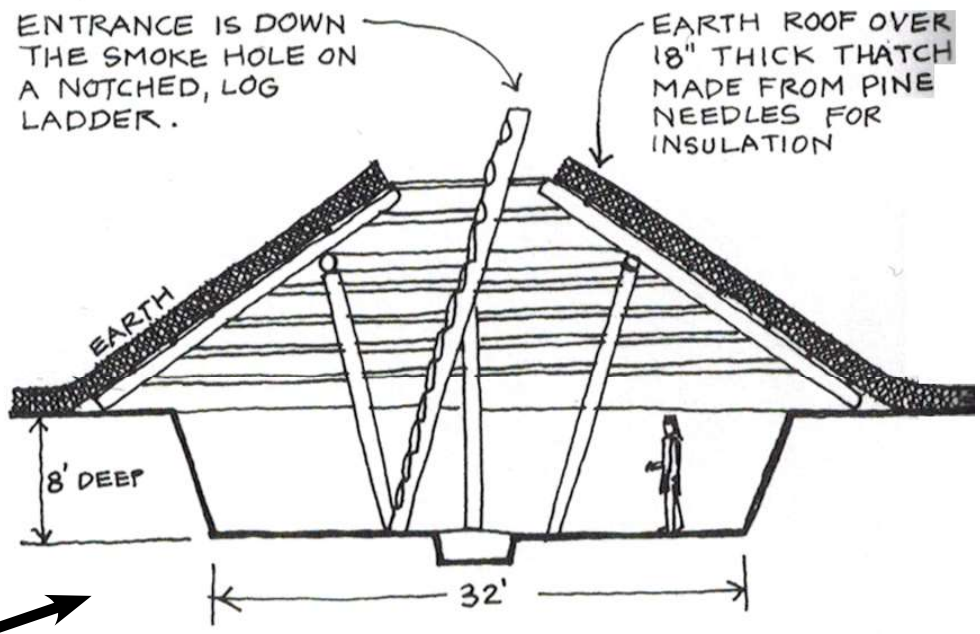
TIPIS AND THE SEMI-UNDERGROUND HOUSES WERE TYPICAL OF PLATEAU CULTURES.

Last Time: Native American Dwellings
(The Semi-Underground House)



THIS DRAWING TYPE IS CALLED AN ELEVATION.

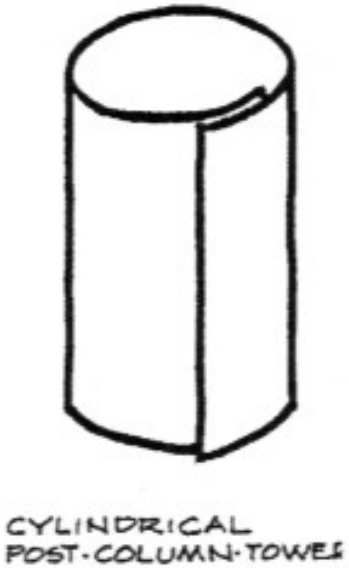
WHY WERE THESE HOUSES GENERALLY OCCUPIED IN THE WINTER MONTHS?

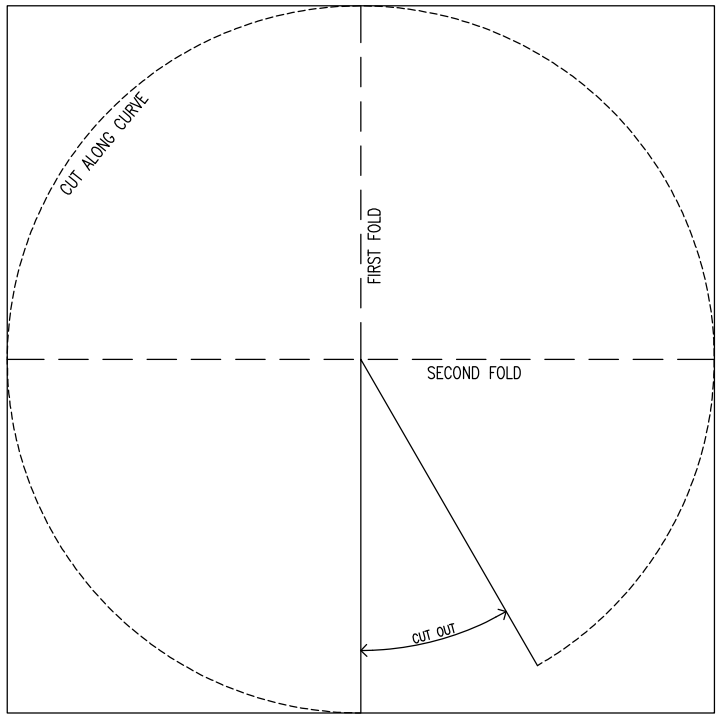


1850 SEMI-UNDERGROUND PLATEAU HOUSE, KALAPOYA TRIBE, NORTHWEST

THIS DRAWING TYPE IS CALLED A SECTION.

Last Time: Paper Shapes
(Tubes & Cones)





CONE OR TURRET ROOF

1. FOLD PAPER IN HALF
2. FOLD PAPER IN HALF AGAIN
3. DRAW A QUARTER CIRCLE WITH THE CENTER OF THE CIRCLE AT THE INTERSECTION OF THE FOLDS
4. CUT OUT THE QUARTER CIRCLE & UNFOLD
5. CUT OUT A PIE-SHAPED WEDGE
6. OVERLAP CUT ENDS & TAPE OR GLUE

The Heirarchy of Architecture

(Who's involved and what do they do?)

CLIENT (OWNER)

ARCHITECT

MECHANICAL ENGINEER

ELECTRICAL ENGINEER

STRUCTURAL ENGINEER

GENERAL CONTRACTOR

PLUMBER

ROOFER

ELECTRICIAN

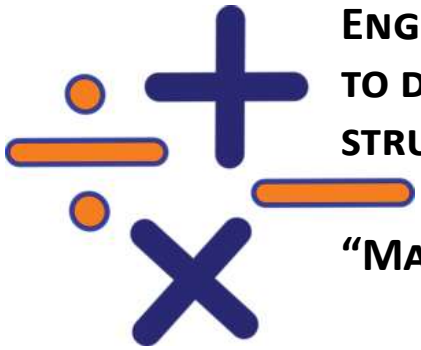
FRAMER

BLUEPRINTS

The Structural Engineer

(They make sure everything stands up and is safe !!!)

Often the STRUCTURE of the building is hidden from view behind drywall and other finishes...



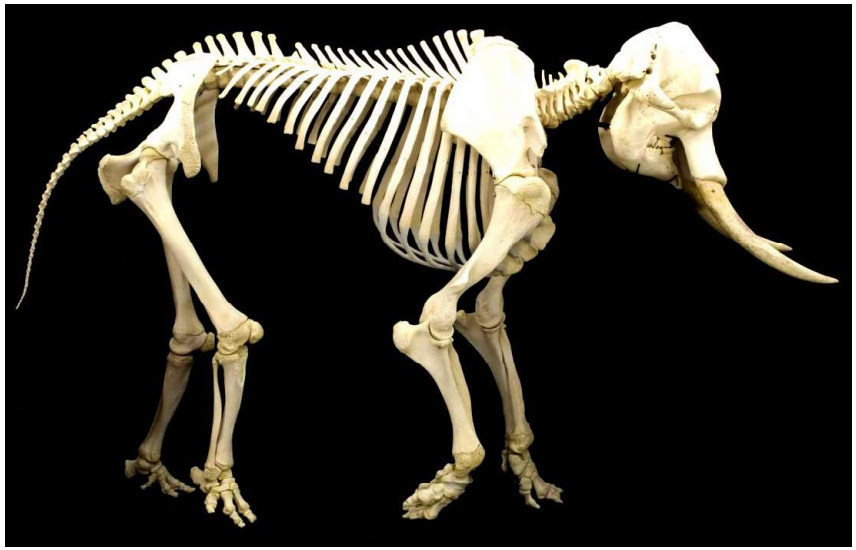
Engineers use math to design safe structures....

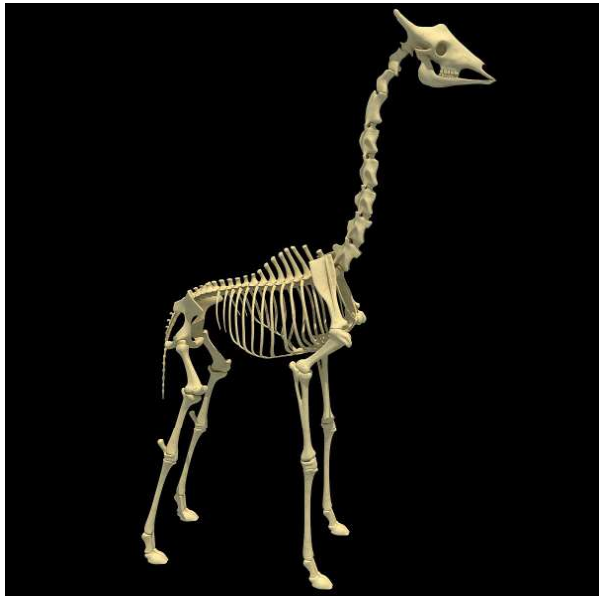
"Math Saves Lives"

But sometimes the beauty of structure is exposed for everyone to see and enjoy !!!

Structure Determines Form

(Not just buildings....other things have “structure” too !!)





Building Structure Too

(Buildings resemble their structure)

The Parthenon
Athens, Greece
447 B.C.

Wood framed house

The Empire State Building

Pioneer Architecture

(1625-1800 A.D.)

How many styles/shapes of roof are there?

This cabin looks small compared to where I live. Why would that be?

Why so many panes of glass?

WHAT KINDS OF MATERIALS DO YOU SEE?

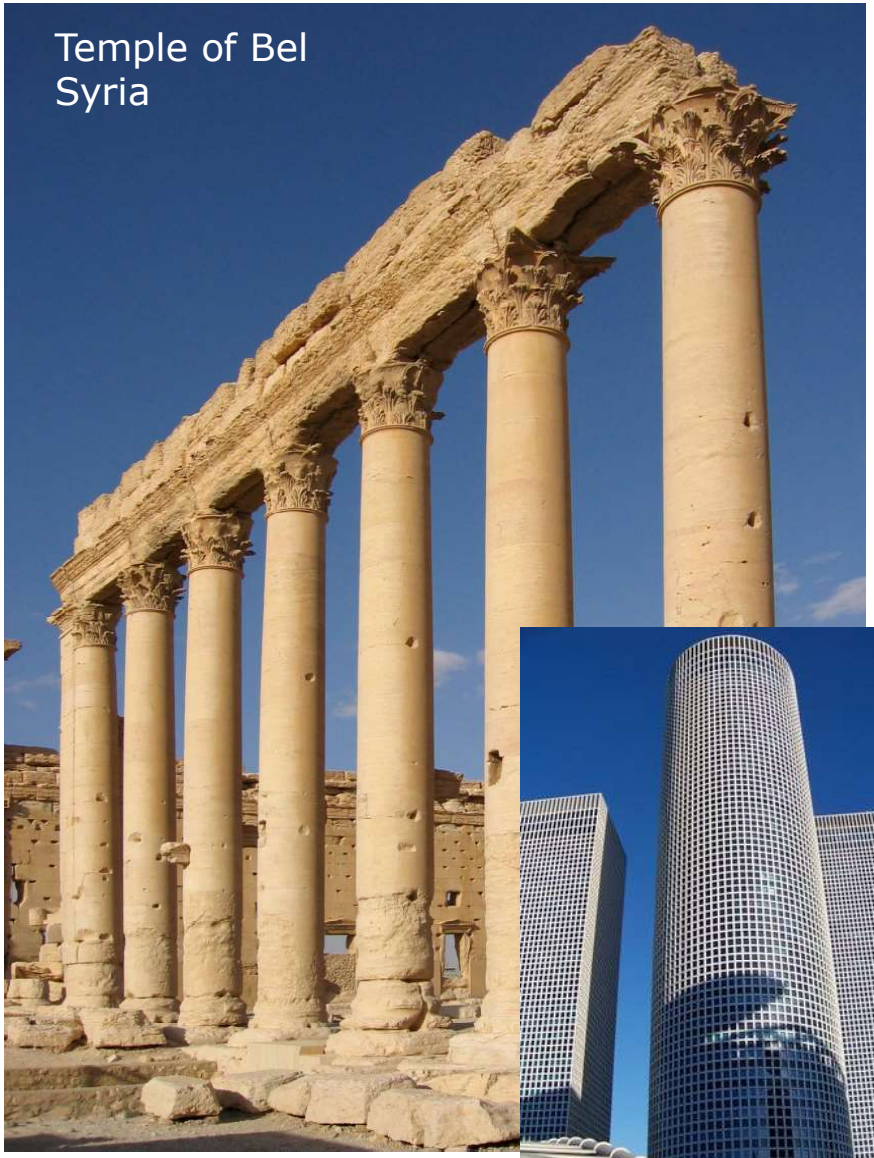
CAN YOU IDENTIFY SOME OF THIS BUILDING'S STRUCTURE....IT'S SKELETON?

What is this?

HOW DO YOU THINK TECHNOLOGY (OR THE LACK THEREOF) INFLUENCED THIS ARCHITECTURE?

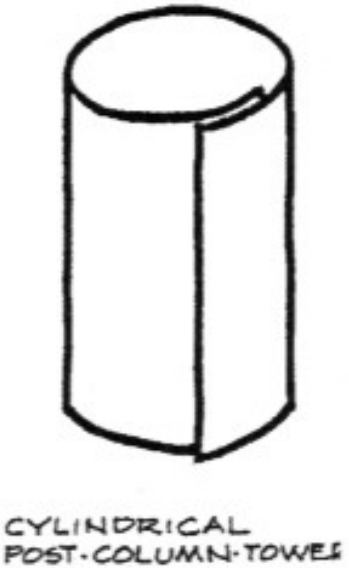
Why Buildings Stand Up?

(The pieces and parts: COLUMNS)



STEPS FOR MAKING A POST / COLUMN / TOWER:

1. Grab a square piece of paper
2. Bend into a circle
3. Overlap by 1/2 inch (1/2”)
4. Tape or glue the two sides together



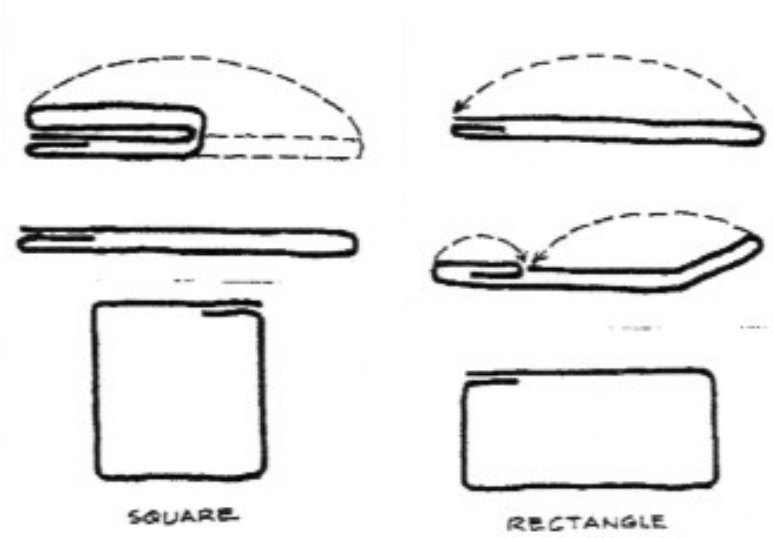
Why Buildings Stand Up?

(The pieces and parts: COLUMNS)

HOW CAN A COLUMN BECOME A BEAM (OR LINTEL)?

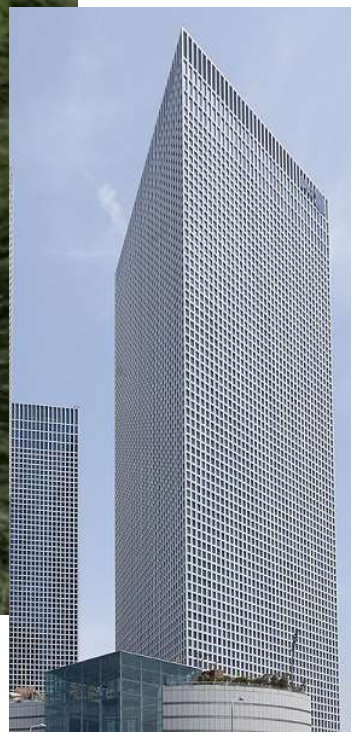
STEPS FOR MAKING A SQUARE ONE:

1. Grab a piece of paper
2. Fold over one edge by 1/2 inch (1/2”)
3. While holding the first fold down, fold the entire thing in half
4. Fold the whole thing in half once more
5. Reverse the last fold
6. Tape or glue together



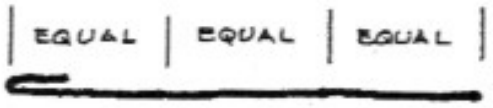
Why Buildings Stand Up?

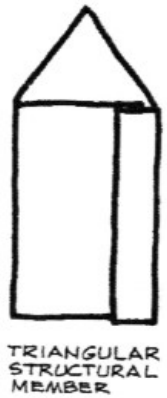
(The pieces and parts: COLUMNS)

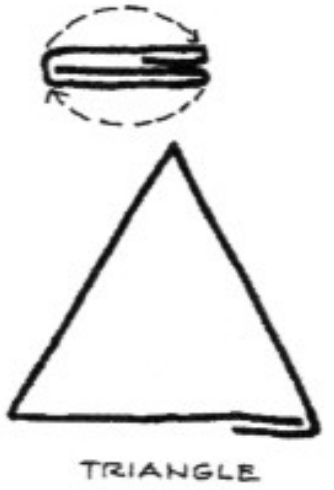


STEPS FOR MAKING A TRIANGULAR ONE:

1. Grab a piece of paper
2. Fold over one edge by 1/2 inch (1/2”)
3. Divide what’s left into 3 equal parts by measuring
4. Make the two necessary folds
5. Tape or glue together







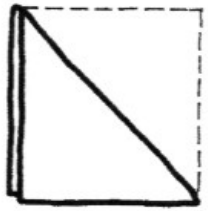
Why Buildings Stand Up?

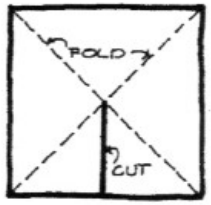
(The pieces and parts: PYRAMIDS)

Pyramid Arena
Mephis, TN

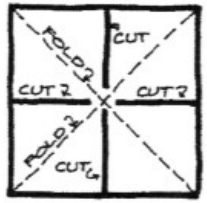
STEPS FOR MAKING A RECTANGULAR PYRAMID:

1. Grab a square piece of paper
2. Fold corner-to-corner
3. Open up and fold corner-to-corner the other way
4. At the midoints of the sides, make cuts, ALMOST to the center
5. Tape or glue together

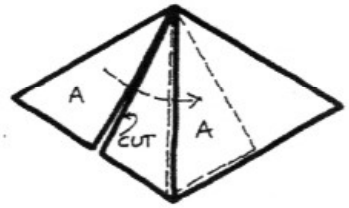

DIAGONAL FOLD



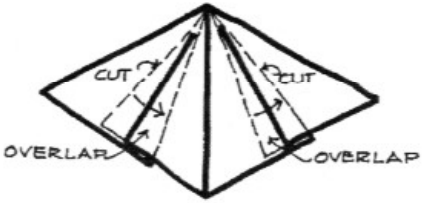
TRIANGULAR PYRAMID



SQUARE PYRAMID



TRIANGULAR PYRAMID



SQUARE PYRAMID

Put a Lid on It

(The pieces and parts: ROOFS.....or is it ROOVES ??)

Hip Roof over Rectangular Garage

Gable Roof

Barrel Vault

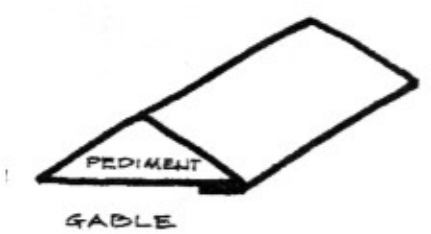
Gothic Arch Roof

Put a Lid on It

(The pieces and parts: Gables & Arches)

STEPS FOR MAKING A BARREL VAULT ROOF:

1. Grab a piece of paper
2. Fold over one edge by 1/2 inch (1/2”)
3. Divide the now folded sheet into thirds (1/3)
4. Fold at the third furthest from your original fold
5. Tape or glue together

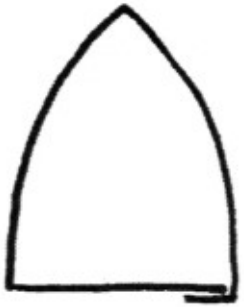


GABLE

ARCH

STEPS FOR MAKING A GOOTHIC ARCH ROOF:

1. Grab a piece of paper
2. Fold over one edge by 1/2 inch (1/2”)
3. Divide the now folded sheet into thirds (1/3)
4. Fold at each of the 1/3 points
5. Tape or glue together

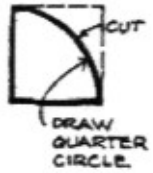

GOTHIC ARCH

BARREL VAULT

Put a Lid on It

(The pieces and parts: Cones)

Tacoma Glass Museum



<u>STEPS FOR MAKING A CONE:</u>

1. Grab a <u>square</u> piece of paper
2. Fold in half (1/2)
3. Fold in half (1/2) once more
4. Draw a quarter circle with the center at the double-folded corner. Cut at the line.
5. Unfold and cut out a pie-shaped wedge
6. Tape or glue together

Putting it All Together

(Assembling multiple pieces into “architecture”)

Putting it All Together

(Assembling multiple pieces into "architecture")

Habitat by Moshe Safdie
Montreal, Quebec, Canada

Inuksuk Residence

Sydney Opera House