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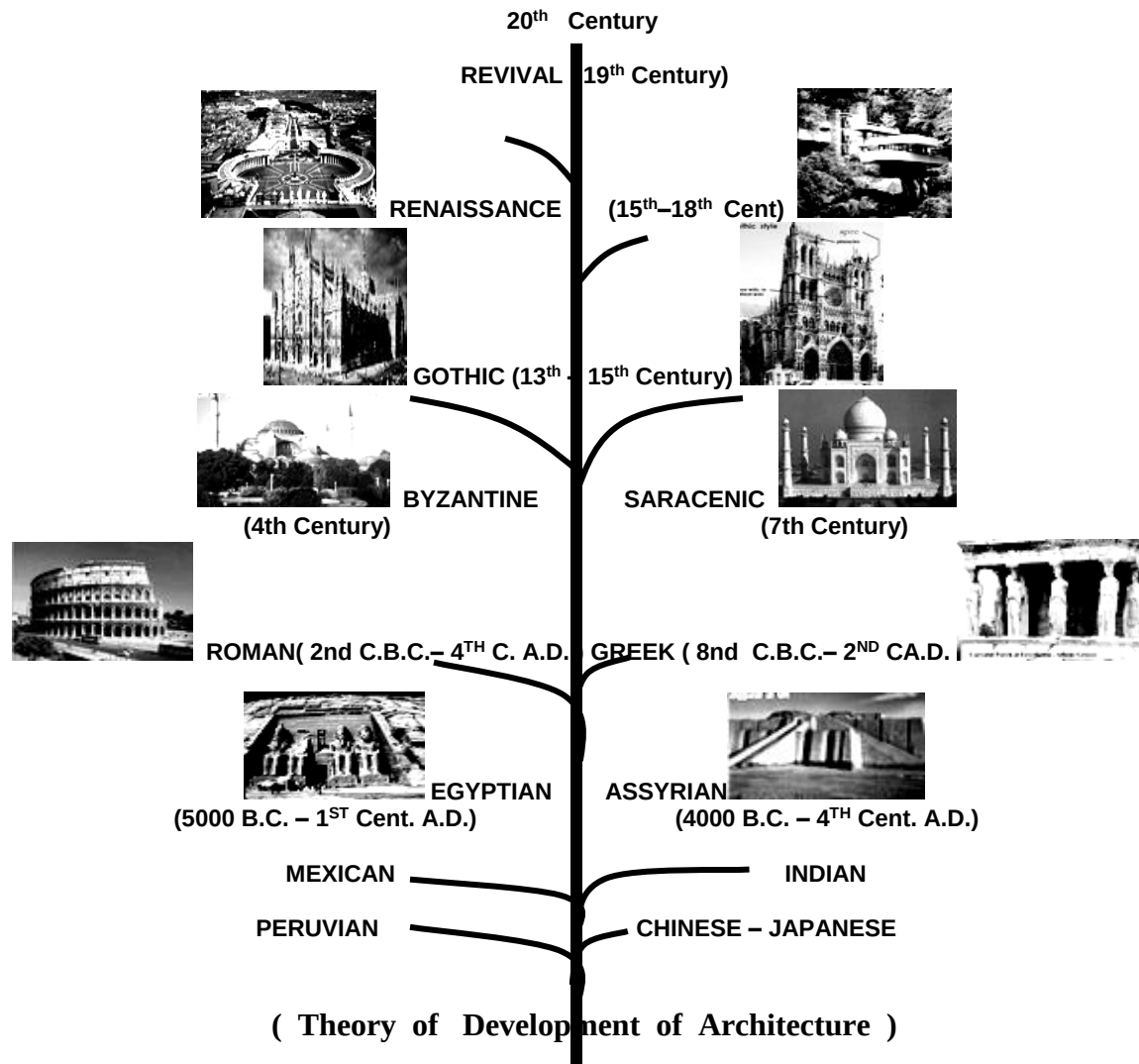
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PRE HISTORIC ARCHITECTURE



STONEHENGE





INFLUENCES OF THE DEVELOPMENT OF ARCHITECTURE

A. **Geographical** b. **Geological** c. **Climatic** d. **Religious** e. **Socialpolitical** f. **Historical**

PRE – HISTORIC STRUCTURES

CULTURAL STAGES

I STONE AGE

a.) Paleolithic (Old Stone Age) b.) Mesolithic (Middle S Age) c.) Neolithic (New S Age)

II BRONZE AGE

Covered the Minoan Period of the Crete & Greek Pd.

III IRON AGE

25 to 50 yrs. Before Julius Ceasar

4 CONSTRUCTIVE PRINCIPLES

A. POST & LINTEL (Trabeated)

B. ARCH & VAULT

C. CORBEL OR CANTILLEVERED

D. TRUSSED

3 CLASSIFICATIONS OF EARLY KNOWN TYPES OF ARCHITECTURE

1. Dwellings 2. Religious Monuments 3. Burial Grounds

FROM THE DWELLINGS STRUCTURES

A. ROCK CAVE – Earliest form of dwellings

3 STAGES OF THE EVOLUTION OF CAVE

1. NATURAL CAVE 2. ARTIFICIAL CAVE 3. CAVE Above the Ground

B. TENTS AND HUTS – Made from tree barks, Animal skins & Plant leaves.

HUTS – usually made up of reeds, brushes and wattles.

RELIGIOUS MONUMENTS

2 CLASSIFICATIONS OF RELIGIOUS STRUCTURES

A. MONOLITH – isolated single upright stone also known as “**menhir**”
Menhir - memorial of victory over one tribe. Prototypes of Egyptian pyramid.

B. MEGALITHIC – Several number of stones

1. **Dolmen** - 2 or more upright stones supporting a horizontal slab.

2. **Cromlech** – 3 or more upright stones capped by an unchain flat stone, Indicates place of religious rites, e.g. Found at LANYON Cornwall

3. Stone Circle or Stone Row - made up of 3,000 stones spaced upright e.g. “Stonehenge”, located @ Wiltshire & on Salisbury Plain

TREE OF ARCHITECTURE

STONEHENGE are made up of Concentric rings with the ff.

- A. Outer ring 106' in diameter
- B. Isolated blue stone
- C. Innermost circle
- D. Smaller blue stone

BURIAL MOUNDS

TUMULI or "**Barrows**" – earthen mounds use for burials of several to couple hundred of ordinary persons. Prototypes of pyramids in Egypt also of the "beehive huts".

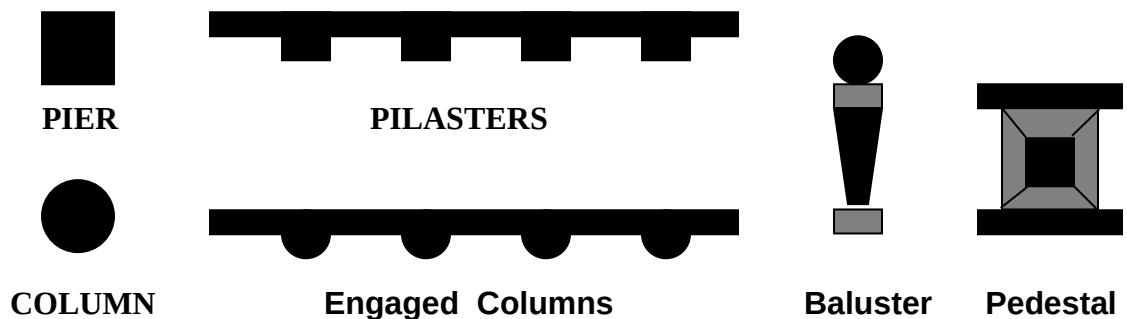
ELEMENTS OF CLASSICAL SUPPORTS

1.) BASIC FORMS

- a.) PIER
- b.) COLUMN
- c.) PILASTER
- d.) PEDESTAL
- e.) ENGAGED COLUMN
- f.) BALUSTER

2.) SPECIAL FORMS

- a.) **CARYATIDS** – draped female figure without hands & carrying nothing.
- b.) **CANEPHORAE** – same as caryatids but this time w/ basket on her head.
- c.) **ATLAS OR ATLANTES** – male figure in kneeling position supporting the world at his shoulders.
- d.) **TELAMON or TELAMONES** – male figure in standing position in place of a column.
- e.) **ANTA COLUMN** -- pier or pilaster formed by a thickening at the end of the wall.



CLASSICAL ORDERS

ORDERS – it includes the column (capital, shaft, base) with an entablature, which is following a certain rule with regards to systems of designing.

FROM GREECE

1. **DORIC ORDER** – the simplest, earliest and the most perfect among the orders, made up of wood.
2. **IONIC ORDER** -- the most sophisticated, less heavy than the Doric order.
3. **CORINTHIAN ORDER** -- the slenderest, elegant, and the most elaborated order.

FROM ROME

4. **COMPOSITE ORDER** -- roman elaboration of the Corinthian order.
5. **TUSCAN ORDER** -- the simplified version of the Roman Doric order and has no shaft flutes.

SUPERIMPOSITION or **SUPERCOLUMNATION** -- the placing of one order after another or above another.

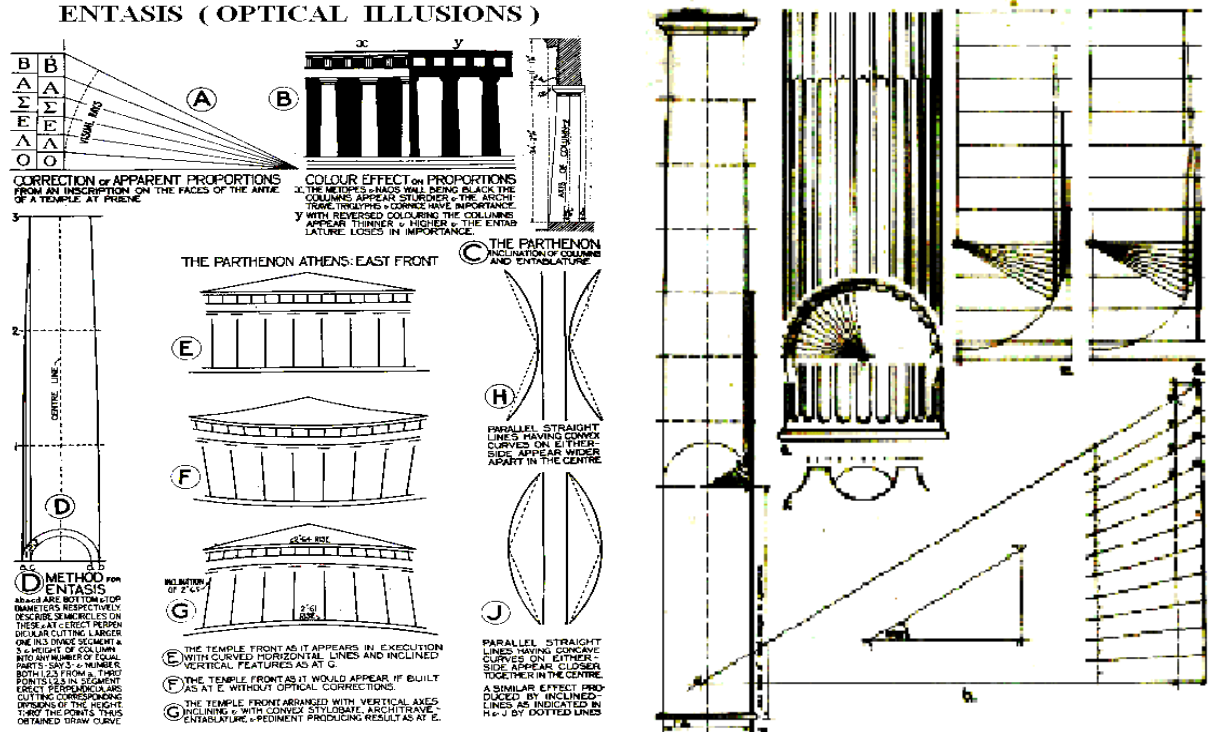
INTERCOLUMNATION -- the clear space between two adjacent columns usually measured at the lower parts of the shafts.

ARCADE – a line of counterthrusting arches raised on columns of piers.

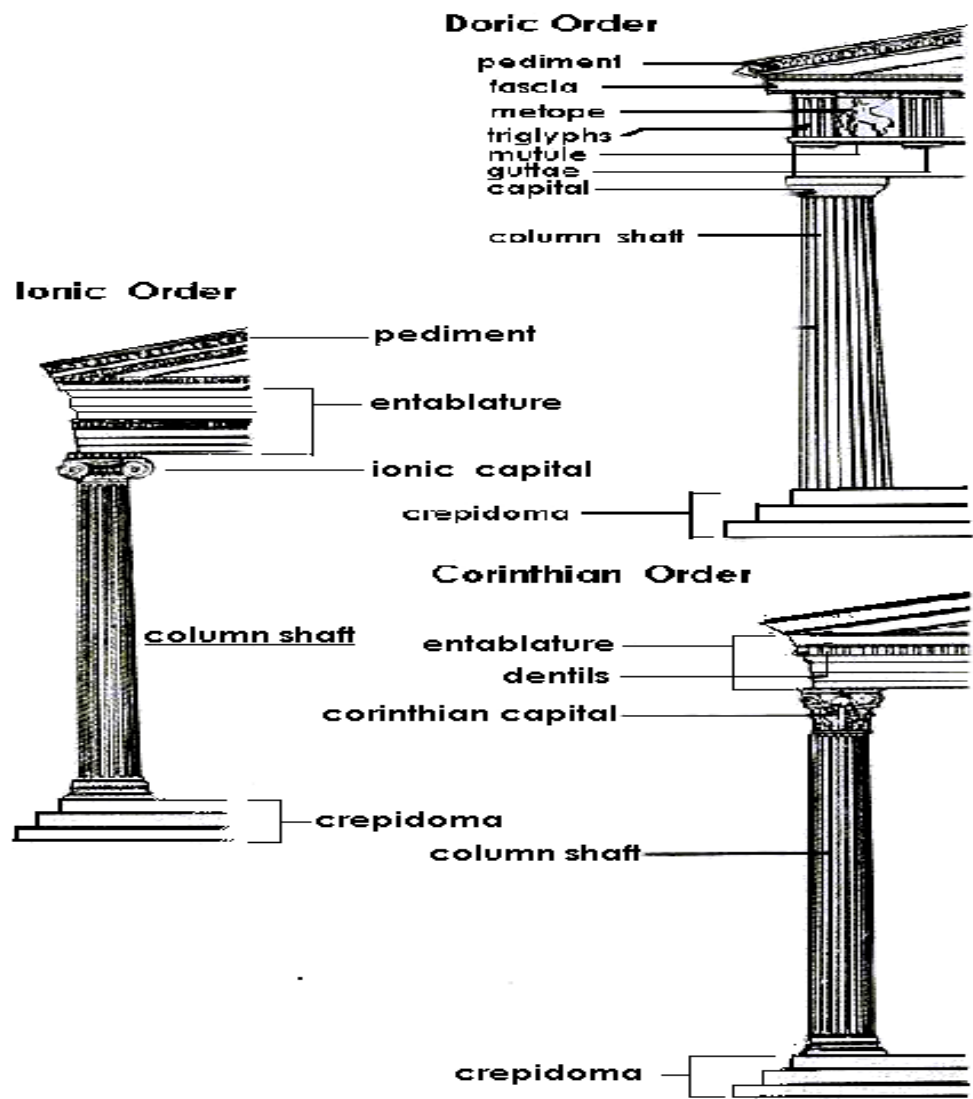
ENTASIS – a swelling or curving along the outline of a column shaft. It was designed to counter-act the "Optical illusion" which gives a shaft bounded by straight line appearance of curving inwards.

TWO KINDS OF ENTASIS

1. Single
2. Double
- ENTASIS (OPTICAL ILLUSIONS)



Classical Orders in Greece



EGYPTIAN ARCHITECTURE



AVENUE OF SPHINX

TEMPLE OF KHONS

CRIOSPHINX



ANDRO SPHINX

SETHMET

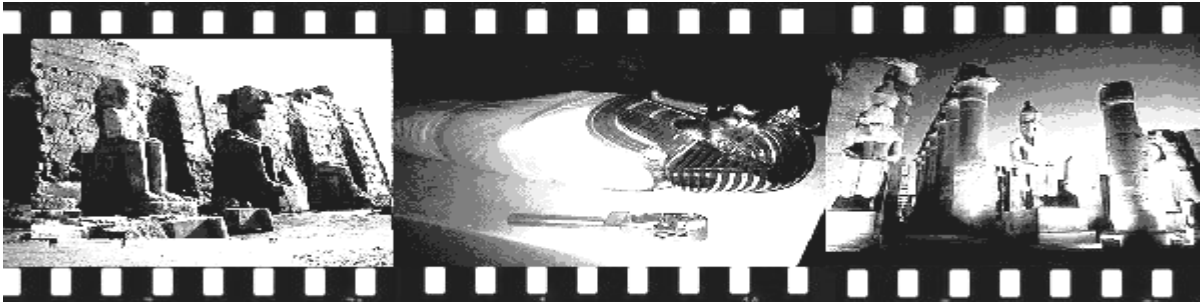
TEMPLE OF HATHOR



TEMPLE OF QUEEN HATSHEPSUT

PYLON AT EDFU

TEMPLE OF HATHOR



TEMPLE OF AMON

PHARAOH MUMMIFICATION

TEMPLE OF LUXOR

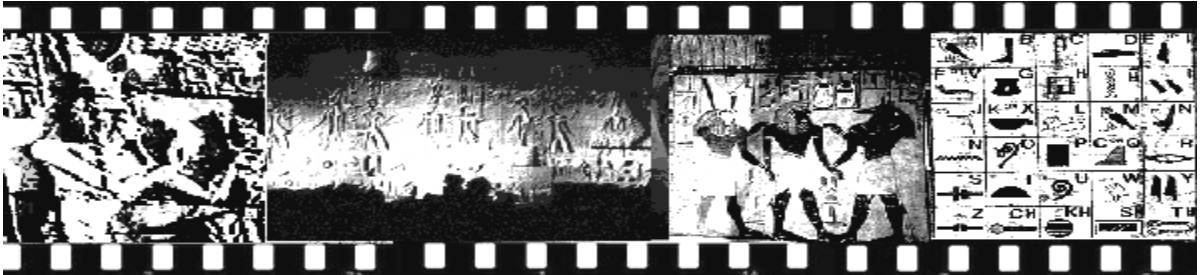


AVE. OF SPHINX

OBELISK

HYPOSTYLE HALL

M A S T A B A



H I E R O G L Y P H I C S

FROM 5000 B. C. – 1st CENTURY A. D.

A. GEOGRAPHICAL INFLUENCE

Egypt known as “ The Land of Pharaoh “ , & “desert Land “. The “ Nile River” is their means of communication , highway , & lifeline . Egypt’s greatest wealth was its fertile “soil”.

B. GEOLOGICAL INFLUENCE

STONE – abundant building material except on temples & pyramids

Soft stone – limestone , sandstone , alabaster .

Hard stone – granite , quartzite , basalt , porphyry

SAND DRIED BRICKS – made up of clay & chopped stone for pyramids & temples.

DATE PALM – for roofing’s & PALM LEAVES – for roofing materials .

ACACIA – for their boat SYCAMORE – mummy cases

C. CLIMATIC INFLUENCE

Structure have no downspout , drainage , gutters due to absence of rain . No windows to cut heat penetration and sandstorm.

D. RELIGIOUS INFLUENCE

Pyramids were built bec. they believe in “ Life after Death “ & for the preservation of the dead body. Pharaoh is not only king but also “god” both political & religious ruler, when he dies he becomes “osiris”, god of dead. They’re “monotheistic” in theory & “polytheistic” in practice.

DIFFERENT EGYPTIAN GODS:

- a.) AMUN—RA : chief god
- b.) RAH : symbol of the sun , hope for eternal life , sun god fr. Heliopolis
- c.) ATUM : world creator
- d.) OSIRIS : god of the dead
- e.) ISIS : wife of osiris
- f.) HORUS : sky god, son of osiris, also reincarnation of “ Ra” himself
- g.) SET : dread god of evil, brother of pleasure
- i.) THOT : ibis headed god of wisdom
- j.) ANUBIS : jackal headed god of death
- k.) PTAH : god of craftsmen
- l.) SERAPIS : bull god

E. HISTORICAL INFLUENCE

30 DYNASTIES – started from 3rd Millennium B.C. to Roman Period. Egypt was part of Persian Empire for 2 Centuries, before the invasion of “ALEXANDER the Great “.

1. ANCIENT KINGDOM (1ST – 10TH DYNASTY)

Development of two types of tombs

- a.) Mastaba b.) Pyramid

2. MIDDLE KINGDOM (11TH – 17TH DYNASTY)

Important Personalities

- a.) MENTUHEP II – developed the 3rd type of tomb “Rock-cut Tomb”.
- b.) SENUSRETS – erected the earliest known “Obelisk” @ Heliopolis.
- c.) AMENEMHAT I – founded “Great Temple of Ammon Kharnak” Grandest of all temples

3. NEW EMPIRE (18TH – 30TH DYNASTY)

Important Personalities

- a.) THOTMES 1- began the additions to the Temple of AMMON, Kharnak.
- b.) HATSHEPSUT – queen of Egypt, famous for her funerary temple @ Mt.Der-El-Bahari.
- c.) THOTMES 1V –the one responsible for the cleaning away of sand fr. the “Sphinx”
- d.) AMENOPHIS III – erected the “Colossi of Memnon”,one of the wonders of the world.
- e.) RAMESES I – began the construction of the “Great Hypostyle Hall”, @ Kharnak
- f.) RAMESES II – finished the construction of the “Hypostyle Hall”, & erection of the “Rock Temple @ ABU- SIMBEL ”, and the “Remission”,Thebes.

4. THE PTOLEMAIC PERIOD

Important Personalities

- a.) PTOLEMY II – built the Pharaohs or the “Light House” .
- b.) PTOLEMY III – founded the “Greatest Serapeum” at Alexandria.

F. SOCIAL AND POLITICAL INFLUENCE

MONARCHY – form of government

PHARAOH – King of Egypt, ruler , highest priest in Egypt

SON OF PHARAOH – normal successor to the throne

VIZIER – King’s most powerful official

CHANCELOR- he controls the royal treasuries, granaries ,& supervises the census

CHIEF STEWARD- in charge of the King’s personal estate & household.

SOCIAL RANKS:

- 1. NOBLE FAMILIES- royal throne with his family
- 2. SOLDIERS, VIZIERS, CHANCELLORS, CHIEF STEWARDS – next to leaders
- 3. FISHERMEN, FARMERS, CRAFTMENS, MERCHANTS - ordinary Egyptians
- 4. SLAVES- lowest form

G. ARCHITECTURAL CHARACTER

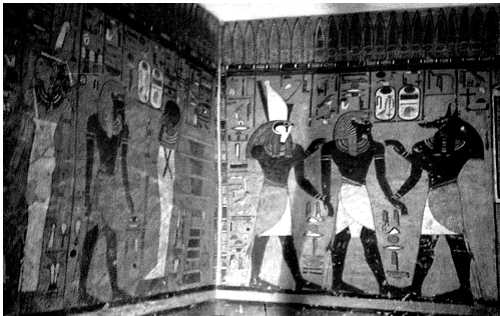
- 1.) SIMPLICITY 2.) MONUMENTALITY 3.) SOLIDITY OR MASSIVENESS

SYSTEMS OF CONSTRUCTION:

POST & LINTEL; COLUMNAR OR TRABEATED.

FEATURES OF EGYPTIAN ARCHITECTURE:

1. BATTERWALL- *inclination from base to top of the façade.*
2. HIEROGLYPHICS- *use as ornaments, pictures & writings from the walls.*



EXAMPLE OF STRUCTURES:

1. TOMBS (3 TYPES)

A. MASTABA- *flat top or tapered solid temple*

3 IMPORTANT PARTS OF MASTABA

1. OUTER CHAMBER- *where offerings were placed*
2. SERDAB – *inner chamber containing the statues of the deceased member of the family*
3. SARCOPHAGUS – *chamber containing the “coffin” reached by an under ground shaft.*

e.g. MASTABA OF THI – (THI - is a royal architect, superintendent of pyramids in Egypt)

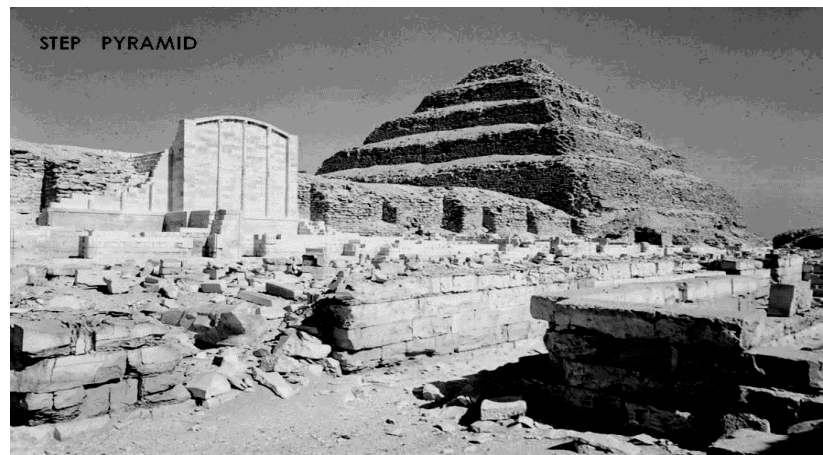
Mastaba – are Tomb-houses that were made to take the body at full length .

STELE is the upright stone slab containing the name of the dead found in the mastaba

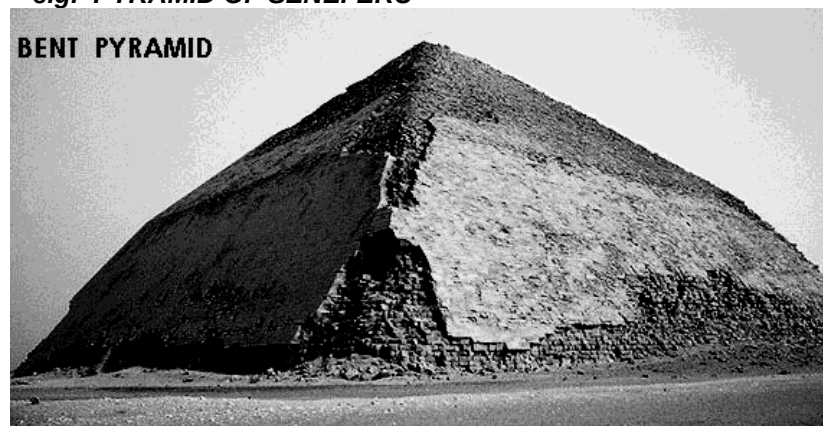
B. PYRAMIDS – *evolved from MASTABA ; w/ four sides facing the Cardinal points , they were made by 100,000 men for 100 years.*

1.) STEP PYRAMID – *evolved from Mastaba*

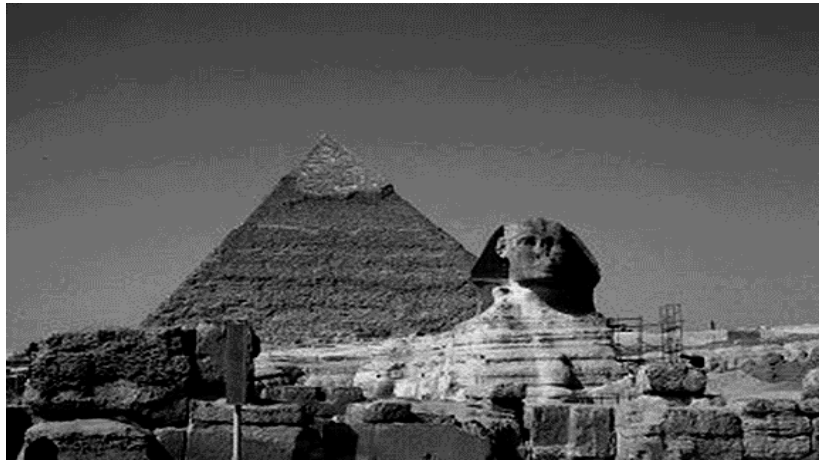
e.g. PYRAMID OF KING ZOSER or ISER – built by IMHOTEP, oldest surviving masonry bldg. structure in the world.



2.) BENT OR BLUNT PYRAMID – *2 degrees of inclination of slope* *e.g. PYRAMID OF SENEFERU*



- 3.) SLOPE PYRAMID – *parts (king's chamber , Queen's chamber , subterranean chamber, grand gallery, airshafts.*
 e.g. 3 Famous Pyramid @ GIZEH Great Pyramids of the Cheops was equated to the size of St. Peter Rome



- a) PYRAMID OF THE CHEOPS OR KHUFU (146.4 mts. High & (750 sq. ft.)
in plan two times the area of the famous " St. Peter Basilica in Rome".
- b) PYRAMID OF CHEOPS or "Khafra" (143.0 mts. high) & (705 sq. ft.) in plan.
- c) PYRAMID OF MYKERINOS or "Menkaura " (109.0 mts. high) & (218ft. high).

PARTS OF PYRAMID COMPLEX:

1. elevated causeway 2. Offering chapel 3. Mortuary 4. Valley bldg.

C. ROCK CUT TOMB OR ROCK HEWN TOMB – *cut deep into the mountain rock*
 e. g. Tombs of the kings, Thebes

2. TEMPLES (2 TYPES) *they were sanctuaries that only Kings and Priests can penetrate.*
 a.) Montuary – *built in honor of the Pharaohs*
 b.) Cult – *built for the worship of the gods, only high priest can enter in both types of temple.*

Egyptian architecture was designed principally for internal effect

PARTS OF AN EGYPTIAN TEMPLE

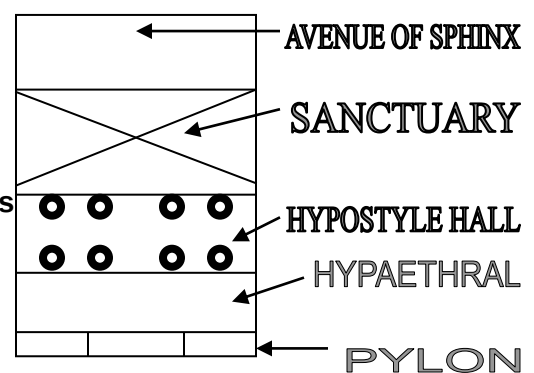
- 1) Entrance Pylon – *massive sloping towers fronted by an obelisks known as gateways in Egypt .*
- 2) Hypaethral Court – *large outer court open to the sky*
- 3) Hypostyle Hall - *a pillared hall in which the roofs rest on column.*
- 4) Sanctuary – *usually surrounded by passages & chambers used in connection w/ the temple service.*
- 5) Avenue of Sphinx – *where mystical monster were placed.*

EXAMPLE OF TEMPLES

- 1) Great Temple of Abu – Simbel – *entrance forecourt leads to an imposing façade formed by a pylon carved w/ 4 Colossal seated statues.(RAMESSES 1-1V)*
- 2) Great Temple of Ammon, Khanak – *most grandest temple in Egyptian planning & was commenced by Amenemhat 1 ; occupying an area of 1,200 ft. x 360 ft*

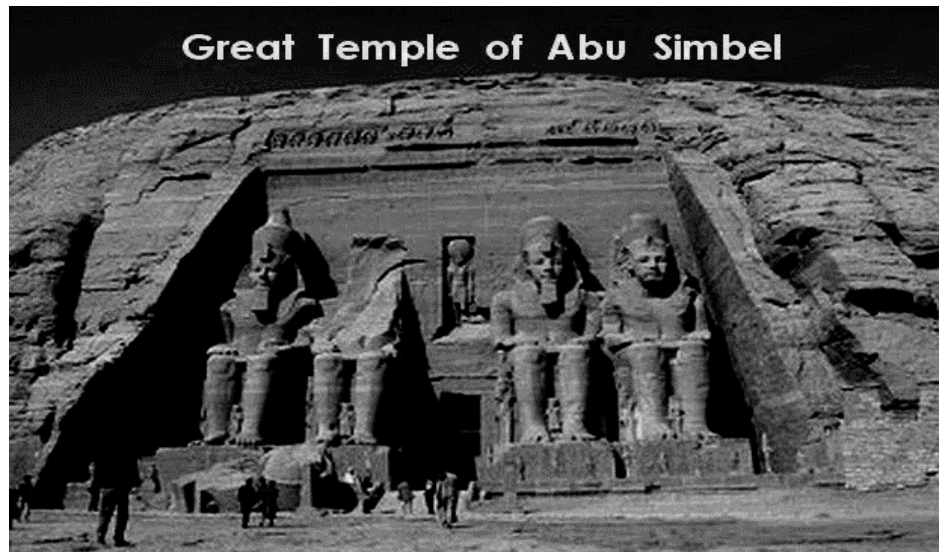
PARTS OF AN EGYPTIAN TEMPLE

- 3) Temple of Ammon, Der – El – Bahari
- 4) Temple of Queen Hatshepsut
- 5) Temple of Elephantine
- 6) Temple of Hathor, Dendera
- 7) Temple of Horus, Edfu
- 8) Temple of Isis, Philae
- 9) Temple of Khons, kharnak, by Ramesses
- 10) Temple of Luxor
- 11) Temple of Mamimisi
- 12) Temple of Mentuhetep, Thebes
- 13) Temple of Seti I, Abydos
- 14) Temple of Ramesseum, Thebes



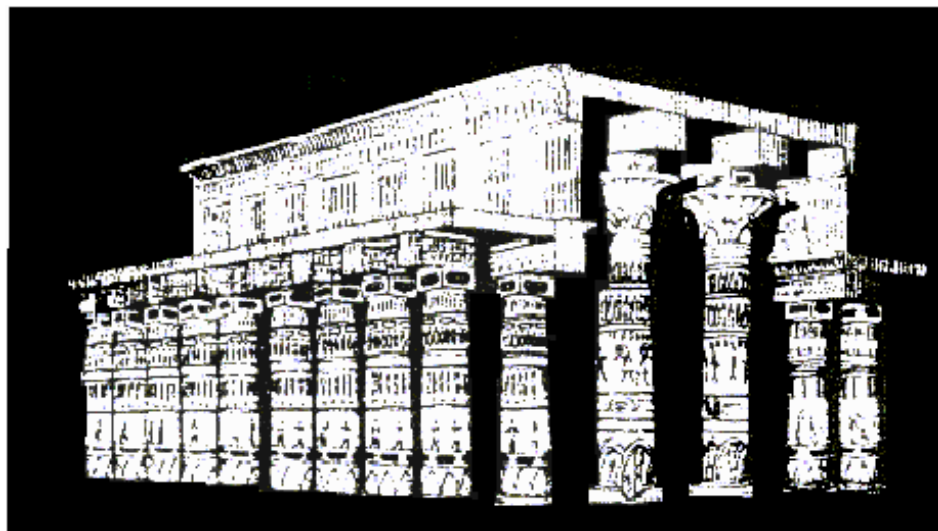
The Great Temple of Abu-Simbel

It is one of the rock-hewn temples at this place commanded by the indefatigable Rameses II. An entrance forecourt leads to the imposing façade, 36 m (119 ft.) wide and 32 m (105 ft.) high formed as pylon, immediately in front of which are four rock-cut seated colossal statues of Rameses, over 20 m (65 ft.) high.



The Great Temple of Ammon, Karnak, Thebes

The grandest of all Egyptian temples, was not built upon one complete plan but owes its size, disposition and magnificence to the work of many Kings. built from the XIIIth Dynasty to the ptolemaic period .



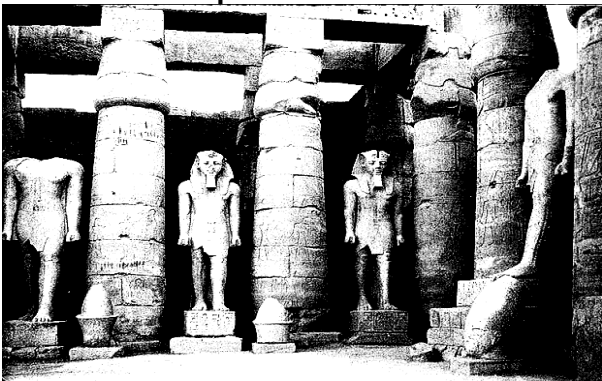
Temple of Queen HATSHEPSUT , Mt. Der – El - Bahari
Queen of Egypt, famous for her funerary temple @ Mt.Der-El-Bahari.



Temple of Hathor, Dendera



Temple of Amon Ra

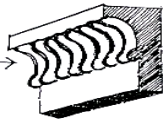


3. **OBELISKS** – are monumental pillars usually in pairs at the temple entrances considered the symbol of “Heliopolis” the sun god. They are square in plan & stands at the ht. of 9 to 10 times the diameter of the base. The four sides tapers to the top on the form of a small pyramid.
e.g. Cleopatra’s Needle, Embankment, London
Piazza of St. John Laterano, Rome.
4. **SPHINX**– a mystical monster with a body of a lion and head of a man or “androsphinx”, body of a lion & head of a hawk or “heiraosphinx”, & body lion & head of a ram or “criosphinx”.
e.g. Great Sphinx at Gizeh near the Pyramid of the Cheops.
5. **CAPITALS & COLUMNS**

- | | | |
|------------------------|-----------------------|-----------------------------|
| a.) Bud & Bell Capital | d.) Volute Capital | g.) Hathor – Headed Capital |
| b.) Polygonal Columns | e.) Palm type Capital | h.) Osiris Pillars |
| c.) Papyrus Capital | f.) Square Pillars | |

6. **MOULDINGS** – “Gorge and Hollow Moulding “ The torus mould in Egyptian temples were used to cover the angles .

Gorge and Hollow Moulding



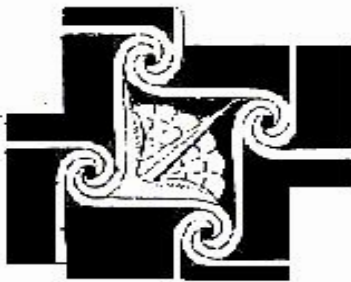
ORNAMENTS

- | | |
|-------------------------------------|---------------------|
| a) Lotus Papyrus & Palm – | for “fertility” |
| b) Solar Discs & Vutures w/ wings – | for “protection” |
| c) Spiral & feather ornament – | for “eternity” |
| d) Scarab or sacred beetle – | for “ressurrection” |

EGYPTIAN ORNAMENTS



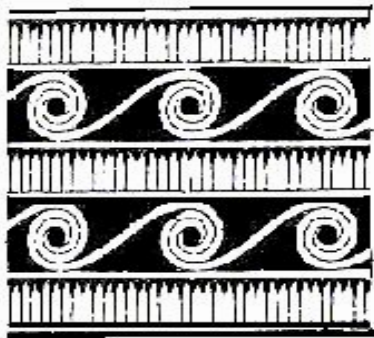
CONTINIOUS COIL
SPIRAL



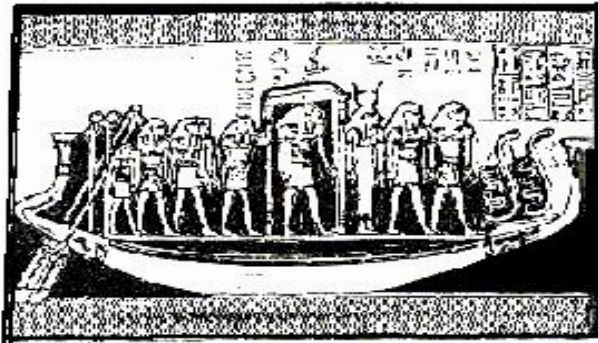
QUADRUPLE SPIRAL



LOTUS AND PAPYRUS

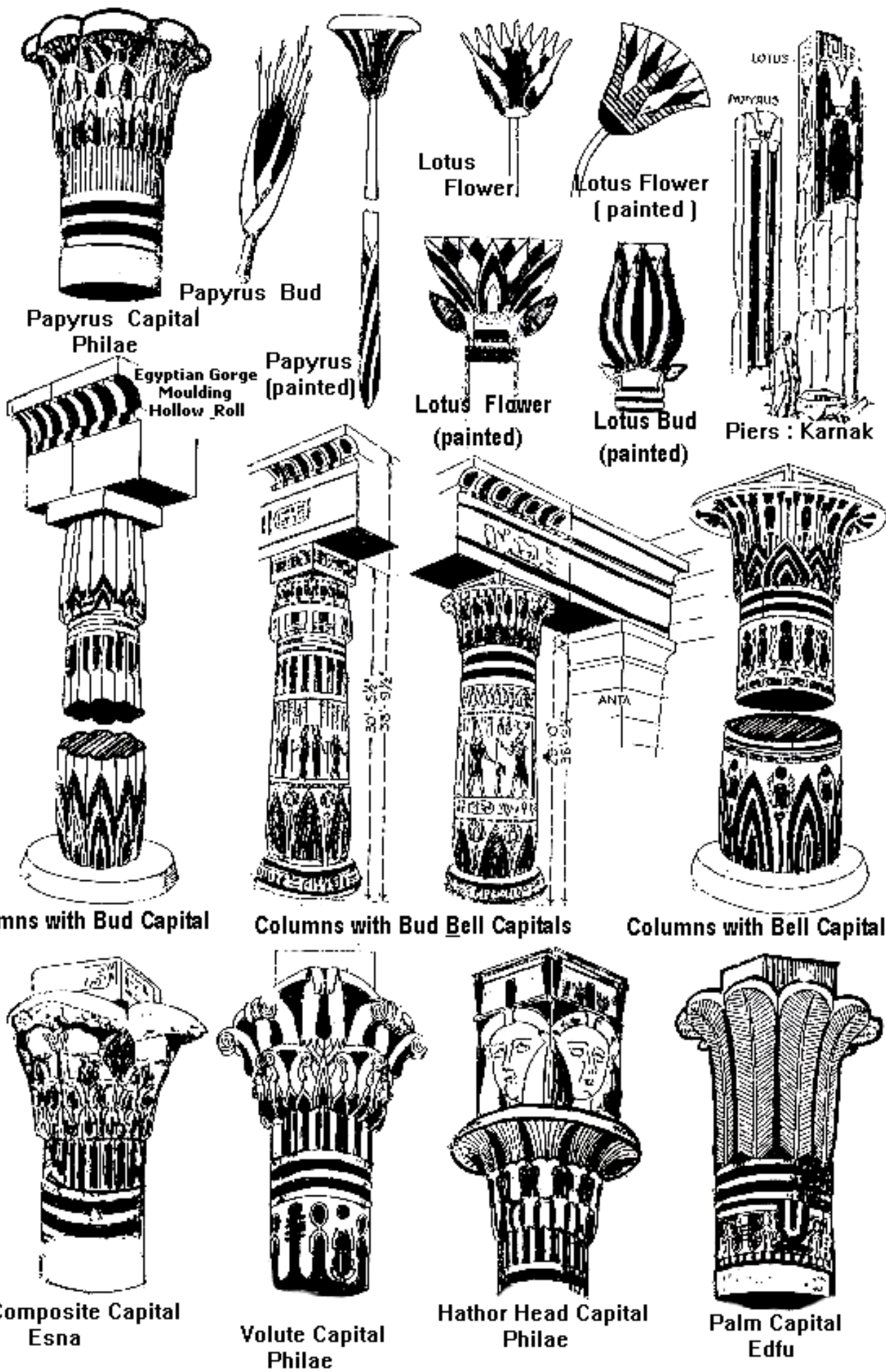


ROPE and FEATHER
ORNAMENT

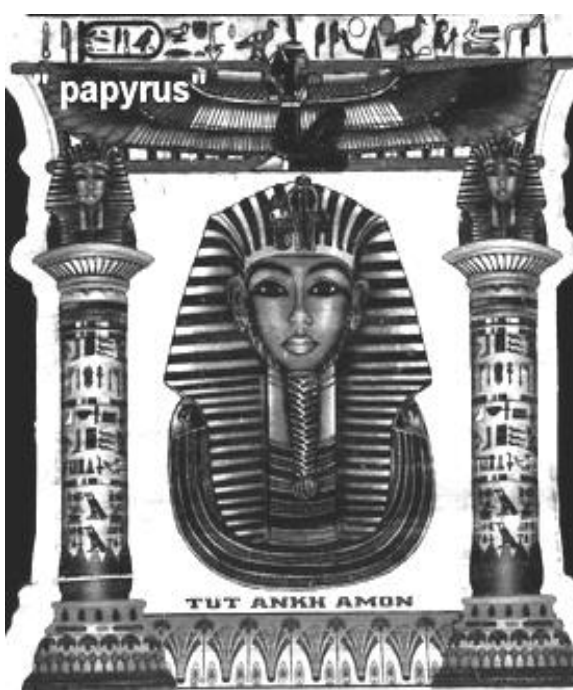


SACRED BOAT : THEBES

EGYPTIAN MOULDINGS AND ORNAMENTS

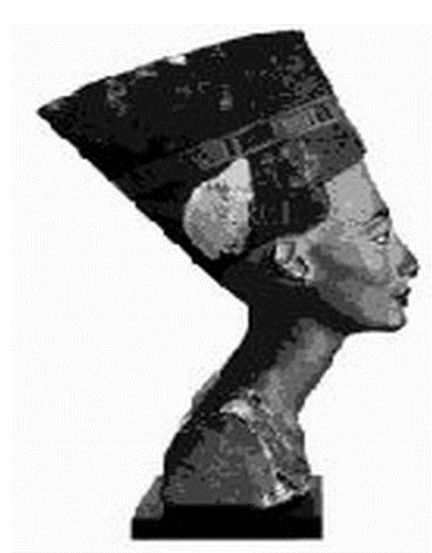


HIEROGLYPHICS WITH HATHOR COLUMNS



Queen Nefertiti

Pharaoh Tut-Ankh-Amen



Mesopotamian Architecture



TOWER OF BABEL ISHTAR GATE HANGING GARDEN



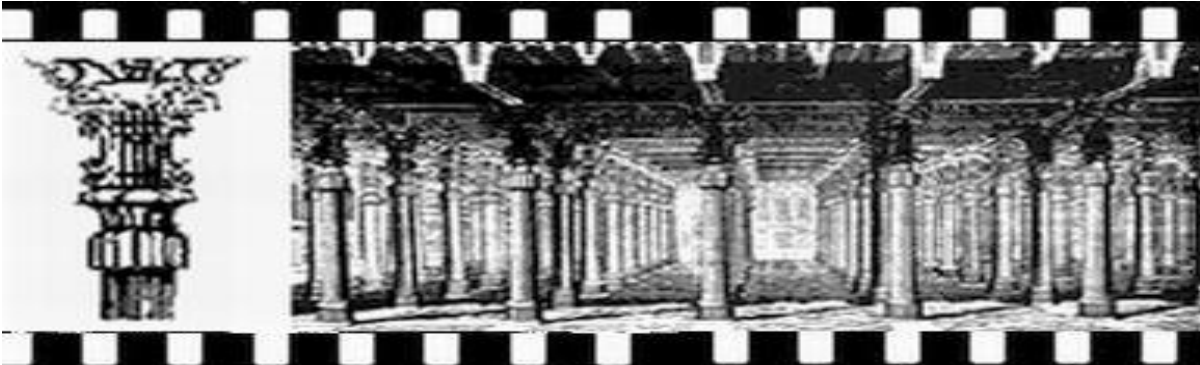
ZIGGURAT ISHTAR GATE ZIGGURAT



ZIGGURAT WINGED BULL HANGING GARDEN



ZIGGURAT ISHTAR GATE ZIGGURAT ENTRANCE



HALL OF HUNDRED COLUMNS

4000 B.C - 4th century

A. GEOGRAPHICAL INFLUENCE

West Asiatic Architecture flourished & developed in the Twin Rivers "Tigris & Euphrates" also known as "**Mesopotamia**" it refers to Persia, Assyria & Babylon.

B. GEOLOGICAL INFLUENCE

Due to floods & heavy rains, it resulted in the conversion of its earthen into clay to produce "**bricks**" in Assyria and Babylon, due to rare experience of rain in Persia, they use **timber** and **coloured limestone**.

C. CLIMATIC INFLUENCE

Mesopotamia experience floods and heavy rains which have resulted in the building of "**Ziggurats**" in Persia, they have dry & hot climate w/c resulted in bldg. **open type temples**.

D. RELIGIOUS INFLUENCE

Mesopotamians were superstitious, believers of symbolism and also believers of genies and demons. Persian were believers of good and evil. They believe that good usually triumphs in the end.

E. SOCIAL & POLITICAL INFLUENCE

Babylonians among the three were considered extraordinary because they achieved highest degree of civilization. **Assyrian and Persian believe in military superiority thus manifested in their bldgs.**

F. HISTORICAL INFLUENCE

1. Babylonian Pd.
2. Assyrian Pd.
3. Neo-Babylonian Pd.
4. Persian Pd.

G. ARCHITECTURAL CHARACTER

1. MASSIVENESS
2. MONUMENTALITY
3. GRANDEUR

CHARACTERISTIC FEATURES

PERSIAN ARCH. – **Columnar and Trabeated** with flat timber roof sometimes domed.
 ASSYRIAN & BABYLONIAN ARCH – **Arcuated** type of construction; Arch, vault and flat strips, buttresses w/ glazed tile adornment.

EXAMPLE OF STRUCTURES

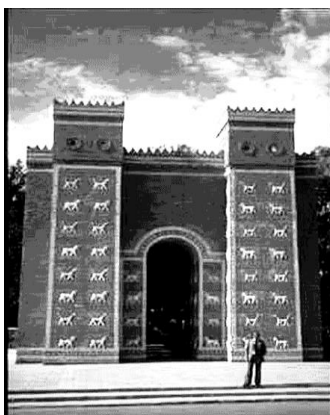
A. BABYLON

1. **ZIGGURATS** or "**Holy Mountains**" – chief bldg. structure, square or rectangle in plan w/ steeply battered sides & an open platform on top containing the "Fire Altar".

THREE TYPES OF ZIGGURATS:

- a.) **Archaic ziggurat** – usually have one flat top rectangular mound carrying the upper temple. e.g White Temple at Warka
- b.) **Two or more stages Ziggurat** – rectangular in plan, design w/ several tiers or stages.
 e.g The ziggurat, Nimrod, Tower of Babel Ziggurat at Bursippa, seven stage pyramid dedicated to seven heavenly planets.
- c.) **Seven stages square base ziggurat**
 e.g Palace of Nebuchadnezzar, it has the "Hanging Garden of Babylon".

2. **CITY OF BABYLON** – with towers & 100 Bronze Gates.



ISHTAR GATE 575 B.C.



General view of the 'Hall of a Hundred Columns'.

B. ASSYRIA

PALACE OF SARGON, KHORBAD – entrance portals flanked with statues of headed winged bulls & lions. It contains 700 rooms.

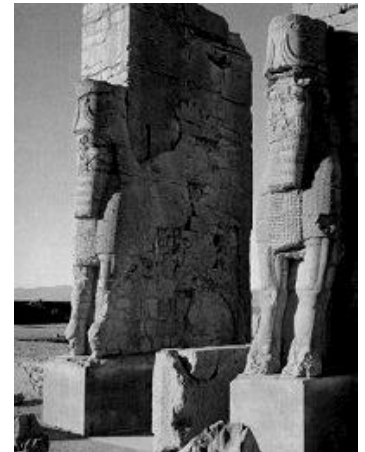
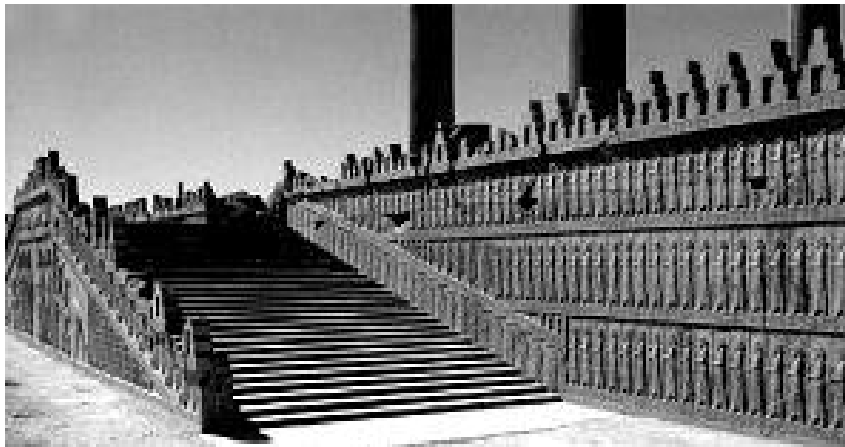
IMPORTANT PARTS OF PALACE

- a). **SERAGLIO** – palace proper w/c includes the king's residence, men's apartment & reception courts.
- b). **HAREM** - usually designed w/ a private family apartments or women's quarter.
- c). **KHAN** - or service chambers, Khan is a Moslem "inn", for travelers prototype

C. PERSIA

PALACE PLATFORM PERSOPOLIS- occupies 1500 and 1000 ft. & is elevated 40 ft. It contains the following:

- a.) Palace of Darius
- b.) Palace of Xerxes
- c.) Hypostyle Hall of Xerxes
- d.) Halls of Hundreds columns
- e.) Propylaea – entrance to hall design by Xerxes



Steps leading to the eastern portico of the Apadana of Persepolis Winged bulls with human faces.

COMPARATIVE ANALYSIS :**PLAN:**

Babylonian palaces and temples were built on artificial platforms 30' above the plain. Ziggurat which grows in several tiers had their angles to the cardinal points, same with the Assyrians & Persians.

WALLS:

Babylonian walls are normally made-up of sun-dried bricks faced w/ kiln-burnt. Assyrian walls are also made-up of sun-dried bricks finished w/ polychrome. Persian walls are also made of bricks & followed the Assyrian style.

OPENINGS:

Babylonian and Assyrian doors are usually spanned by semi-circular arches. Persian doors are spanned by lintels, and used of monolith prior to doorways.

WINDOWS:

Babylonian and Assyrian windows are not in use. Persian windows are also spanned by lintels.

ROOFS :

Generally, roofs are flat externally & also in some cases, tunnel vaults and domes are used.

COLUMNS :

Babylonians & Assyrians have no columns. Persian column features, high moulded base, fluted shafts, bracket form of topmost capitals were of "twin bulls", "dragons", or sometimes "human heads".

MOULDINGS:

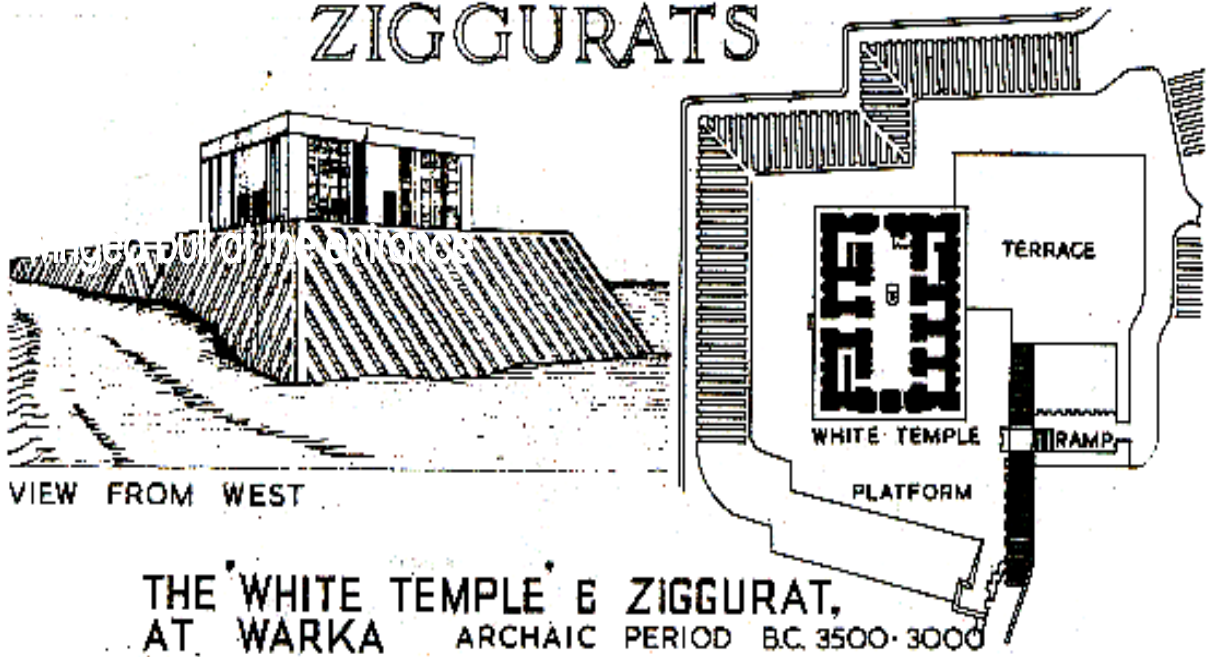
Babylonian & Assyrian mouldings were of little use. **Persian adopted mldngs. from the Egyptians.**

ORNAMENTS:

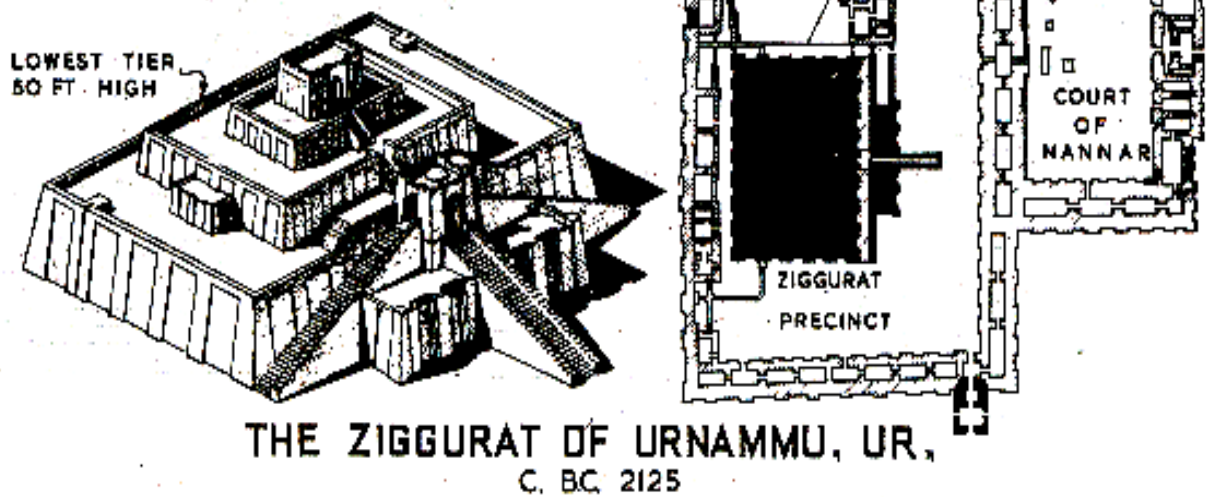
In Assyrian & Persian ornaments they have the monster planking entrance portals mural decoration by polychrome bricks of blue, yellow & green with low relief stabs.

ZIGGURAT AT UR (IRAQ) 2100 B.C.

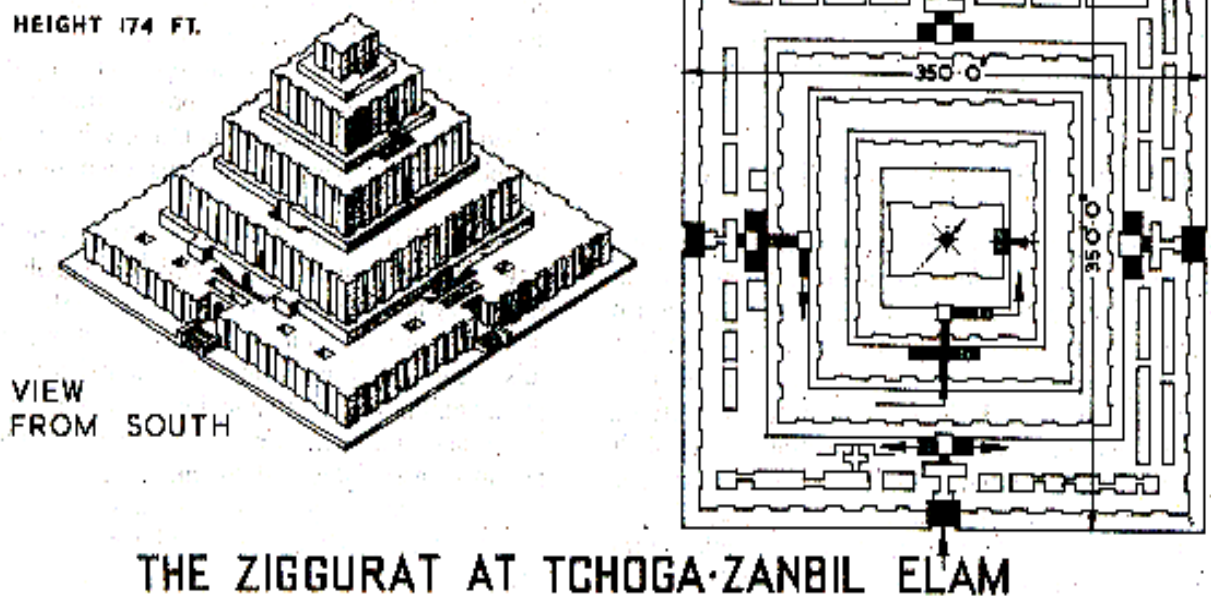
ZIGGURATS



VIEW FROM EAST



HEIGHT 174 FT.



Greek Architecture



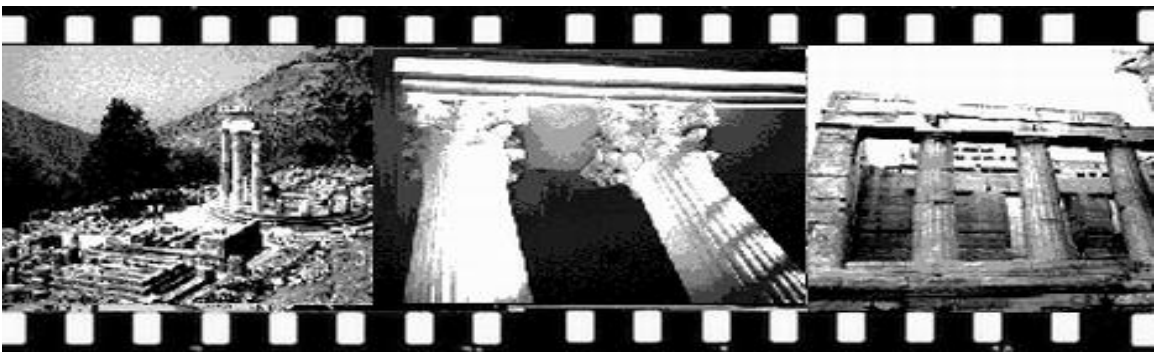
PARTHENON IONIC CAPITAL CORINTHIAN CAP.



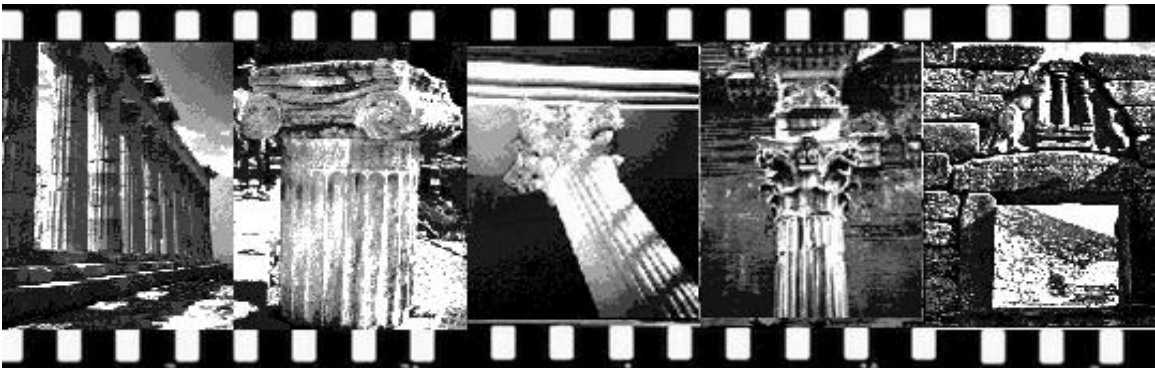
PEDIMENT PARTHENON TRIGLYPHS



OPEN THEATER TEMPLE OF ATHENA CARYATIDS GATE OF LION



AGORA CORINTHIAN COLUMN PROPYLAEA



DORIC COL. IONIC COL. CORINTHIAN COL CORINTHIAN COL LION GATE

8th CENTURY B.C. – 2nd CENTURY

A. GEOGRAPHICAL INFLUENCE

The rugged nature of the Greek Peninsula & its widespread islands, made communication difficult. It was bounded on two sides by "Black Sea and the Mediterranean Sea", Athens as its center kingdom contains the upper city known as "Citadel".

A. GEOLOGICAL INFLUENCE

Marble – chief bldg. materials, they also had ample supplies of bldg. stones.

B. CLIMACTIC INFLUENCE

Climate was intermediate between "Cold & hot", which favored an outdoor life dramatic presentations, most of public ceremonies took place in an open air, even in religious rites, due to limited public buildings other than temples.

D. RELIGIOUS INFLUENCE

AEGEANS : worship "nature", Priestesses rather than priest conducted the religious rites.

GREEKS: Represents their deities by large statues. They worship natural phenomena.

GREEK DEITIES	:	ROMAN DEITIES
Aphrodite	:	Venus - goddess of commerce, love and beauty
Apollo	:	Apollo - god of law and reason, art music & poetry
Ares	:	Mars - god of war
Artemis	:	Diana - goddess of chastity
Athena	:	Minerva - goddess of learning & wisdom
Demeter	:	Ceres - goddess of earth & agriculture
Dionysus	:	Bacchus - god of wine & feasting
Hephaestus	:	Vulcan - god of fire, flame & forgery
Hera	:	Juno - wife of Zeus, goddess of marriage
Heracles	:	Hercules - son of Zeus, mythical half god & man
Hermes	:	Mercury - messenger of the gods
Hestia	:	Vesta - goddess of hearth & home
Nike	:	Victoria - goddess of victory
Pan	:	Pan - god of flock
Poseidon	:	Neptune - god of the sea
Zeus	:	Jupiter - supreme god, ruler of the sky, chief god

E. SOCIAL & POLITICAL INFLUENCE

Chief diversion were music, dancing, wrestling, boxing, gymnastic, and bull-fighting often w/ religious connection. Women took part in hunting and more strenuous games, as well as in craftwork. Tyrannic, aristocratic, & democratic were the forms of gov't. Pericles one of leaders in Athens.

F. HISTORICAL INFLUENCE

PERIODS OF DEVELOPMENT:

1. **Early Period** (3000 B.C – 700 B.C.) – Aegeans, Minoans & Myceneans were the only people in Greece.
2. **Hellenic Period** – essentially columnar & trabeated in Acropolis which was Crowned by "Parthenon". By the 16th Cent. parthenon was converted into a Christian church.

ARCHITECTURAL CHARACTER

1. AEGEAN ARCHITECTURE OR EARLY PERIOD

Characteristic Features

- a). Low pitch or flat roof on multi-storey structure.
- b). Stairway was developed for vertical circulation.
- c). Houses termed as "Megaron" & palaces were principal bldg. types

Megaron Areas:

- 1). *Enclosed porch*
- 2). *Living apartment or megaron proper*
- 3). *“ Thalamus “ or sleeping room*

d). 4 Methods of walling surface finishes:

- 1). *Cyclopean – a masonry made-up of huge stone blocks laid mortar*
- 2). *Polygonal – a masonry w/c is constructed w/ stones having polygonal faces.*
- 3). *Rectangular – block of stone cut into rectangular shapes.*
- 4). *Inclined blocks – stones with inclined blocks.*

2. GREEK ARCHITECTURE or HELLENIC PERIOD**CHARACTERISTICS OF GREEK ARCHITECTURE**

- a). *Simplicity & Harmony*
- b). *Purity of Lines*
- c). *Perfection of Proportions*
- d). *Refinement of Details*

This “ Hellenic Period “ chief bldg. type were temples w/c were built towards the rising sun (east).

CHARACTERISTIC FEATURES:

1. *They use rectangular plan.*
2. *Temples gateways “propylaea “*
3. *Collonade surrounds the temple.*
4. *Ceiling were omitted & treated w/ timber panelled coffers “ lacunaria”*
5. *Walls were made up of stones.*
6. *Marble sculptures completed the buildings.*
7. *Mural paintings on the walls of temples were highly developed.*
8. *Optical Illusions were corrected from horizontal lines not to appear dropping or sagging from the center, a slight covex outlines were formed for stylobates , cornices & architraves fr. the temple “ Parthenon “ , the same w/ the vertical lines for columns.*

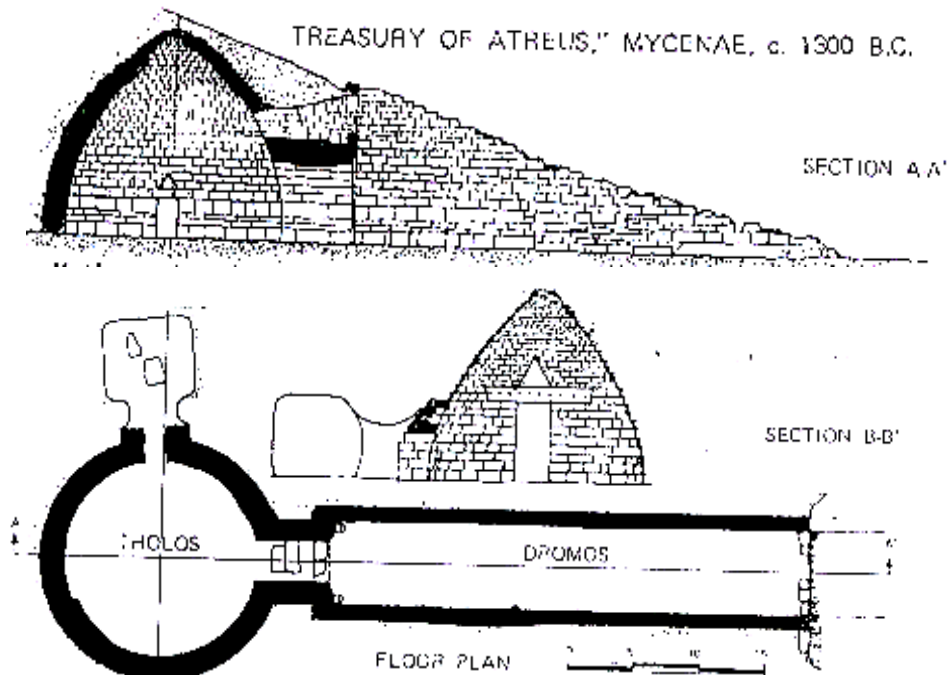
EXAMPLES OF ARCHITECHTURAL STRUCTURES**A. AEGEAN ARCHITECTURE or EARLY PERIOD**

- 1). *Gate of Lions, Mycenae – most ancient stone sculpture in Europe.*
- 2). *Palaces – used by kings or local chieftain.*

e.g *Palace of King Minos, Knossos*
 The Palace, Tyrins
 The Palace, Mycenea

The Lion Gate, Mycenae (c. 1250 B.C.)

3). Tombs



2 Types of Aegean Tomb:

- a). **Tholos** – a stone- vaulted construction, shaped like an old fashion beehive . It consist of a long passage known as “Dromos ”leading to domed chamber.
- b). **Rock** – cut or chamber tomb – rectangular chamber, cut w/ in the slope hill -side approach by Dromos.

B. GREEK ARCHITECTURE OR HELLENIC PERIOD

- 1). “ Temenos “ or sacred enclosure, also known as “ citadel “ or “ acropolis ” or upper city.

IMPORTANT STRUCTURES FOUND IN ACROPOLIS

- a). Principal Temple
- b). Pinacotheca (picture gallery)
- c). Glypthotheca (sculpture gallery)
- d). Statue of Athena
- e). The Erecthelon
- f). Old Temple of Athena
- g). The Parthenon
- h). Theater of Dionysos
- i). Stoa of Eumenes
- j). Odeion of Herodes Atticus
- k). Temple of Nike Apteros

- 2). **Civic Square** “ square city or market place, the greek’s political business & economic life

Greek : Agora	Italian : Piazza	English : Market
Roman : Forum	French: Place	

e.g **Civic Square @ Miletus**
Civic Square @ Ephesus
Civic Square @ Priene

- 3). **Temples** – were the chief building. Usually the plan is rectangular in shape.

PARTS OF A GREEK TEMPLE

- a). **Naos** – principal chamber containing the statue of the god or goddess, w/ porticoes & collonades.
- b). **Pronaos** – the inner portico in front of naos, or “ cella” of the naos
- c). **Epinaos or “ Opisthodomus “** – posticum which serves as the treasury chamber.

PARTHENON , GREECE



CARYATIDS PORCH , ERECHTHEION , ATHENS



OPEN THEATER

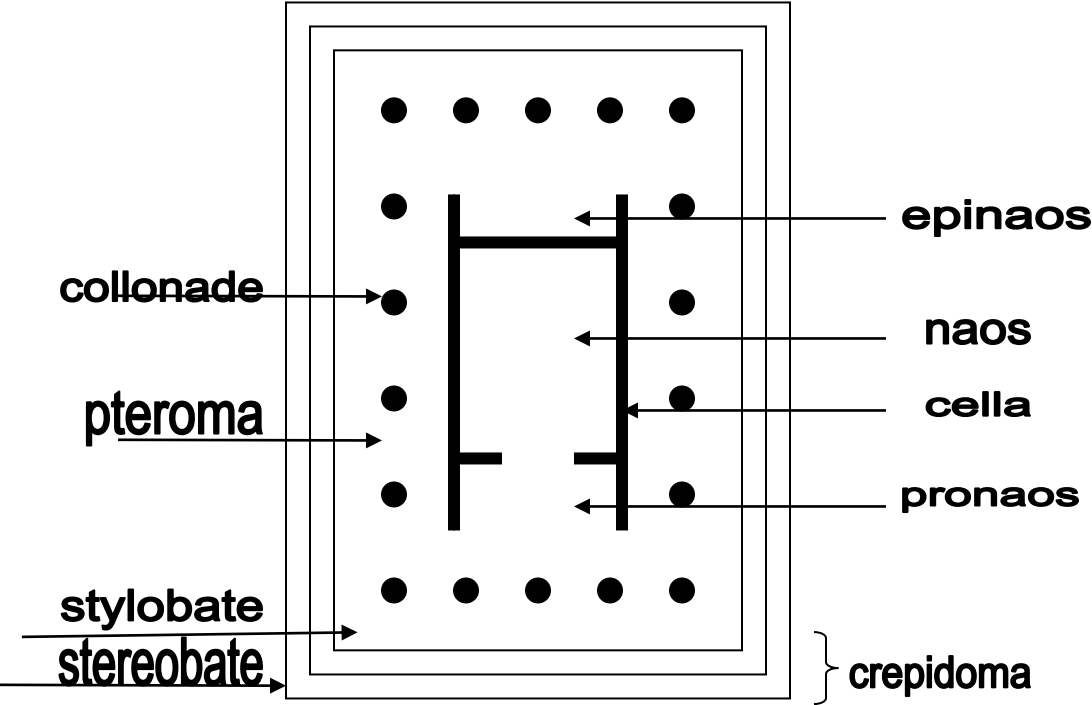


TWO WAYS OF DESCRIBING TEMPLES: (rectangular)

- a). According to the number of columns on the entrance front.
- b). By the arrangement of the exterior columns of the temple in relation to naos as below:

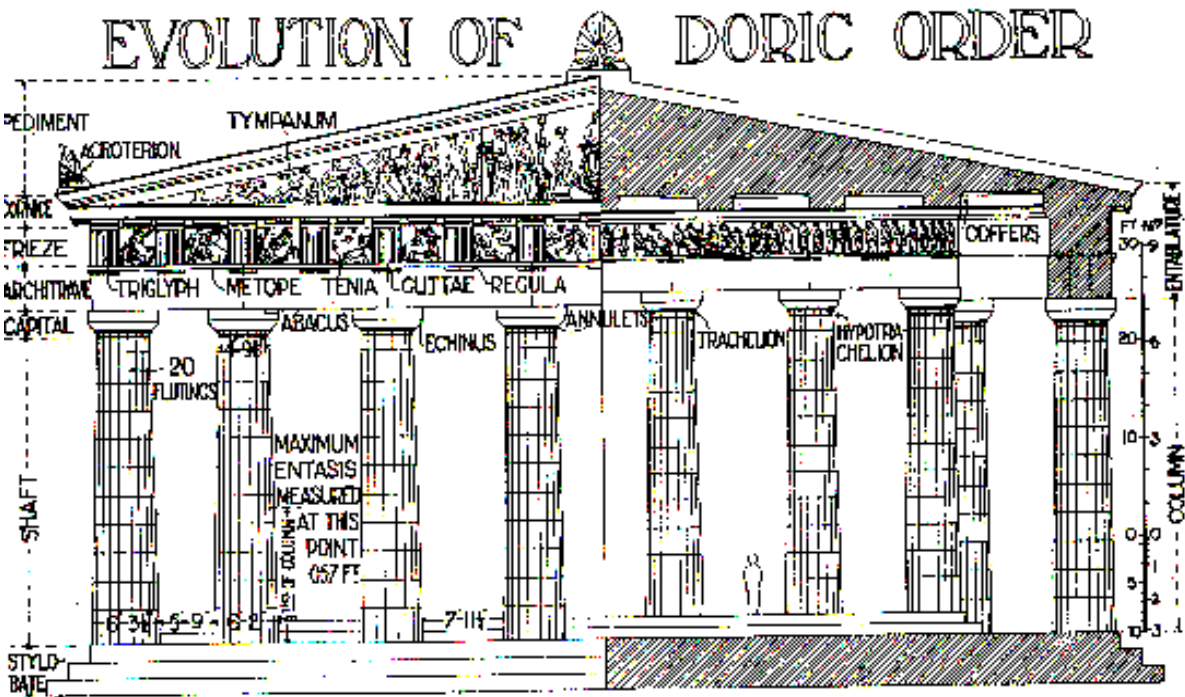
- | | |
|-------------------|----------------|
| a). Henostyle - | one column |
| b). Distyle - | two columns |
| c). Tristyle - | three columns |
| d). TetraStyle - | four columns |
| e). Pentastyle - | five columns |
| f). Hexastyle - | six columns |
| g). Heptastyle - | seven columns |
| h). Octastyle - | eight columns |
| i). Enneastyle - | nine columns |
| j). Decastyle - | ten columns |
| k). Dodecastyle - | twelve columns |

PARTS OF A GREEK TEMPLE

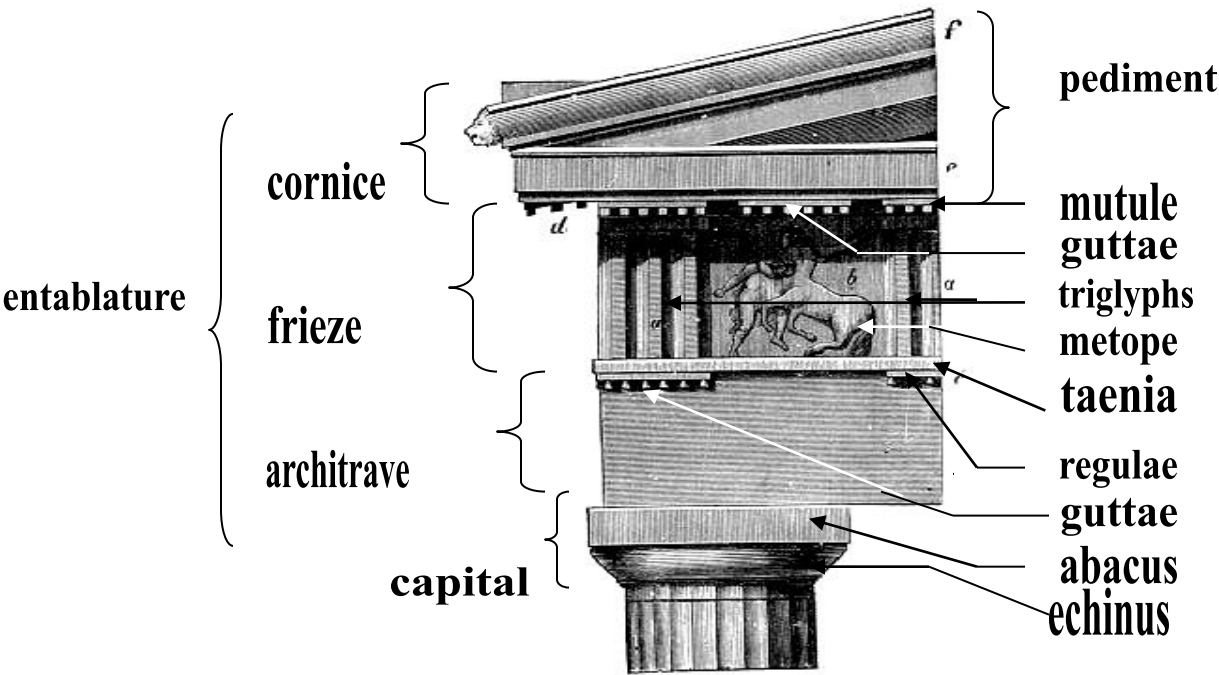


GREEKS

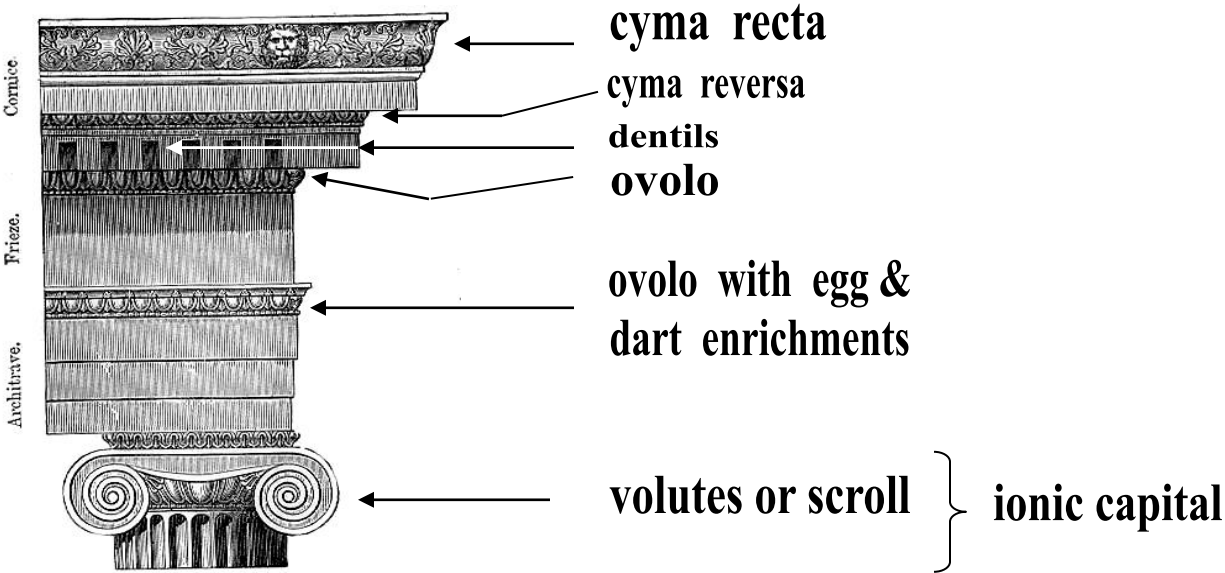
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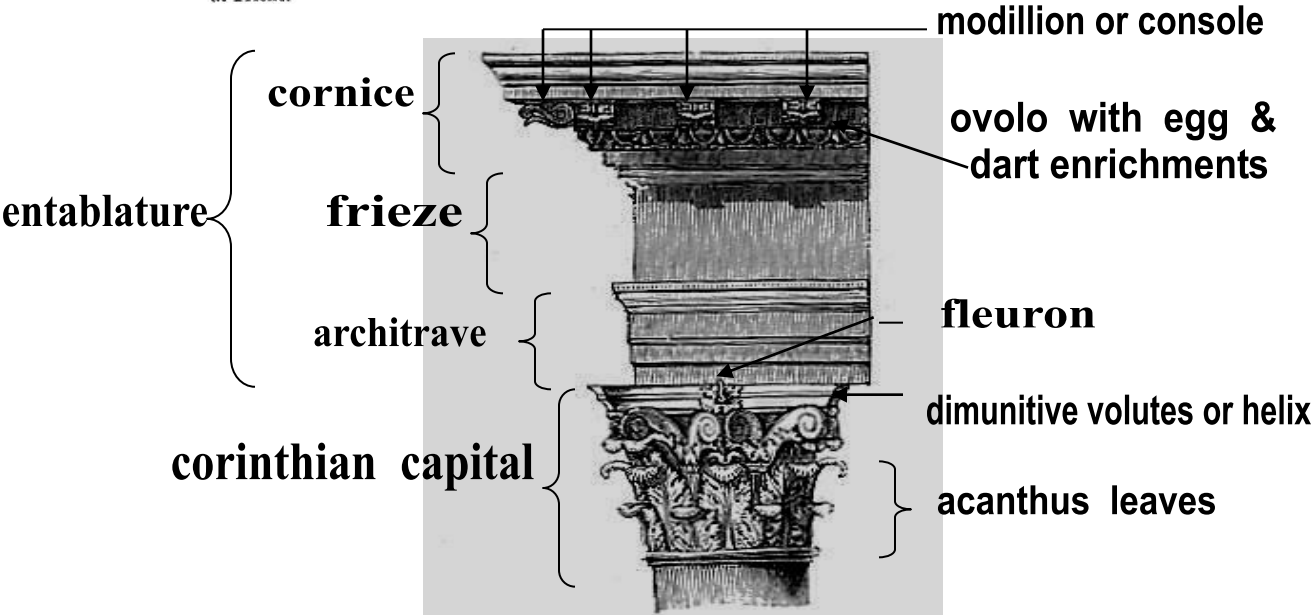
Orders of the Greek Architecture



The Doric Order in the Parthenon at Athens.



Ionic Entablature from the Temple of Minerva Polias at Priene.

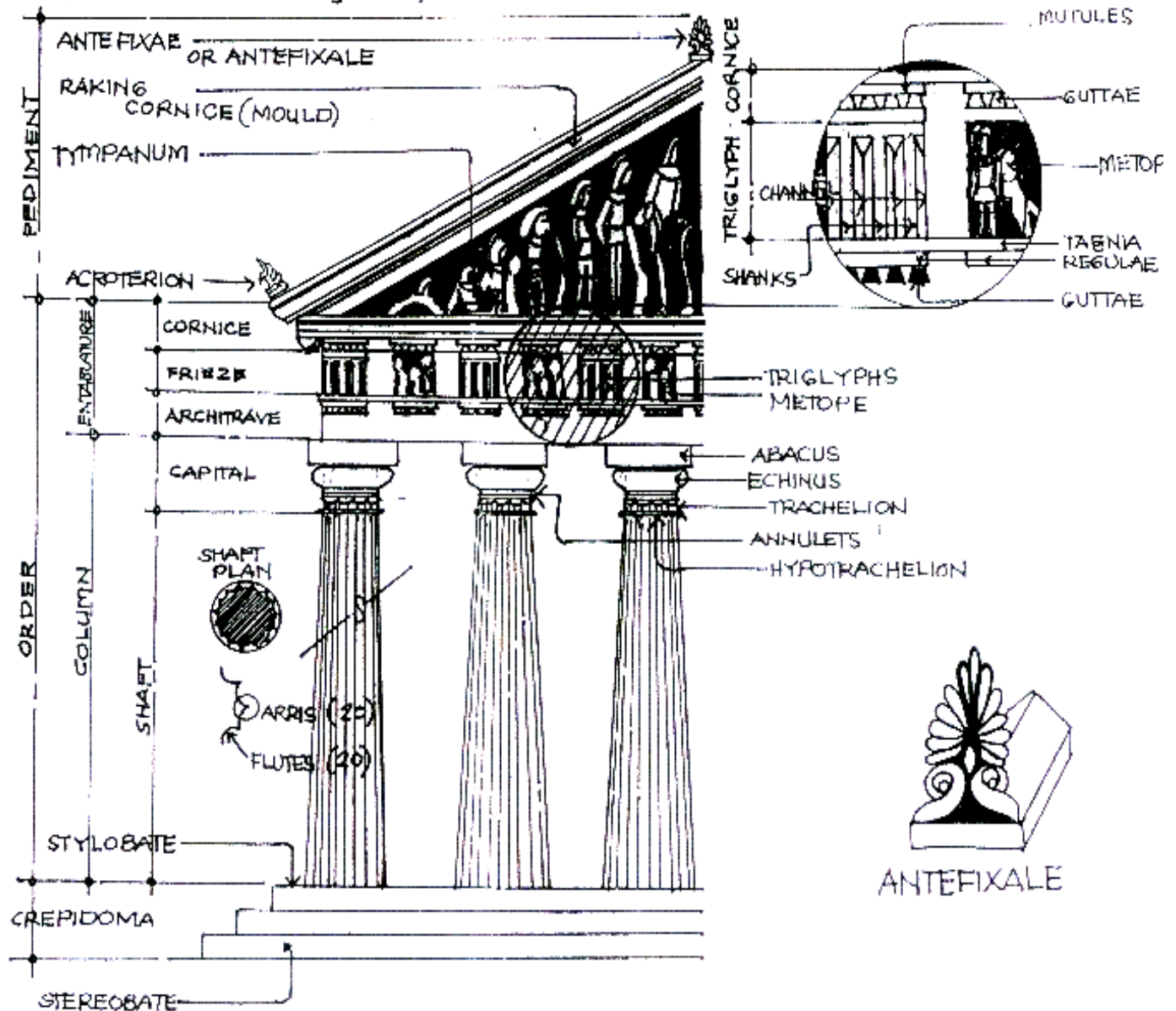


Corinthian Capital with Entablature from the Pantheon at Rome.

DORIC ORDER (1st Order of the Greek Architecture)

The simplest & the earliest among the 5 orders. "Parthenon Temple", where

the Doric Order was being used, & it was built out of wood.

**FORMS OF GREEK TEMPLE****PARTS OF DORIC ORDER:****A). DORIC PARTS:**

1. Pediment
2. Entablature
3. Crepidoma

B). PEDIMENT PARTS:

1. Antefixae
2. Tymphanum
3. Acroterion

C). ENTABLATURE PARTS

1. Cornice
2. Frieze
3. Architrave

J). SHAFT PARTS:

1. Annulets
2. Tracheleum/ Trachelion
3. Hypotracheleum or Hypotrachelion

D). CORNICE PART:

1. Mutule
2. Guttiae

E). FRIEZE PARTS:

1. Triglyphs
2. Metope

F). ARCHITRAVE PARTS:

1. Taenia
2. Regulae
3. Guttiae

K). CREPIDOMA PARTS:

1. Stylobate
2. Stereobate

G). TRIGLYPH

1. 2 whole & 2 ½ Channels
2. Shank

H). COLUMN PARTS:

1. Capital
2. Shaft
3. Base

I). CAPITAL PARTS:

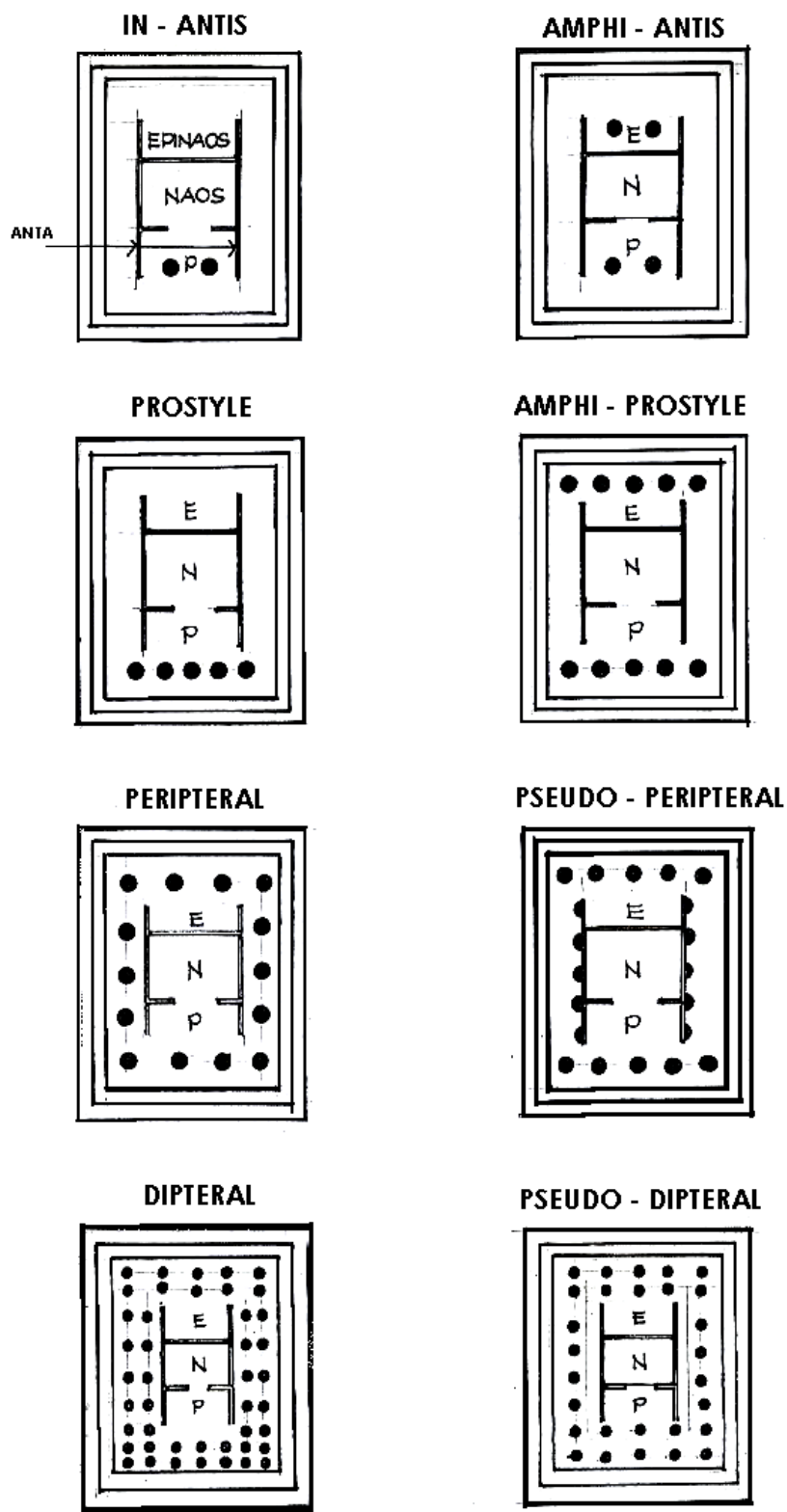
1. Abacus
2. Echinus

L). SHAFT'S PLAN

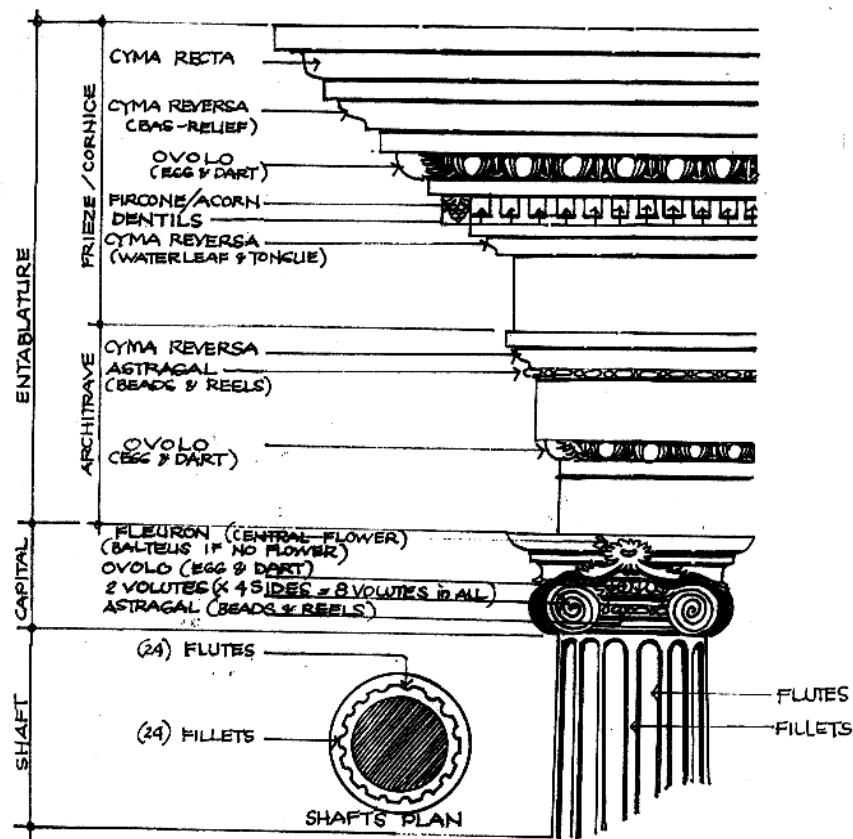
1. Flutes (20)
2. Arris (20)

FORMS OF GREEK TEMPLES

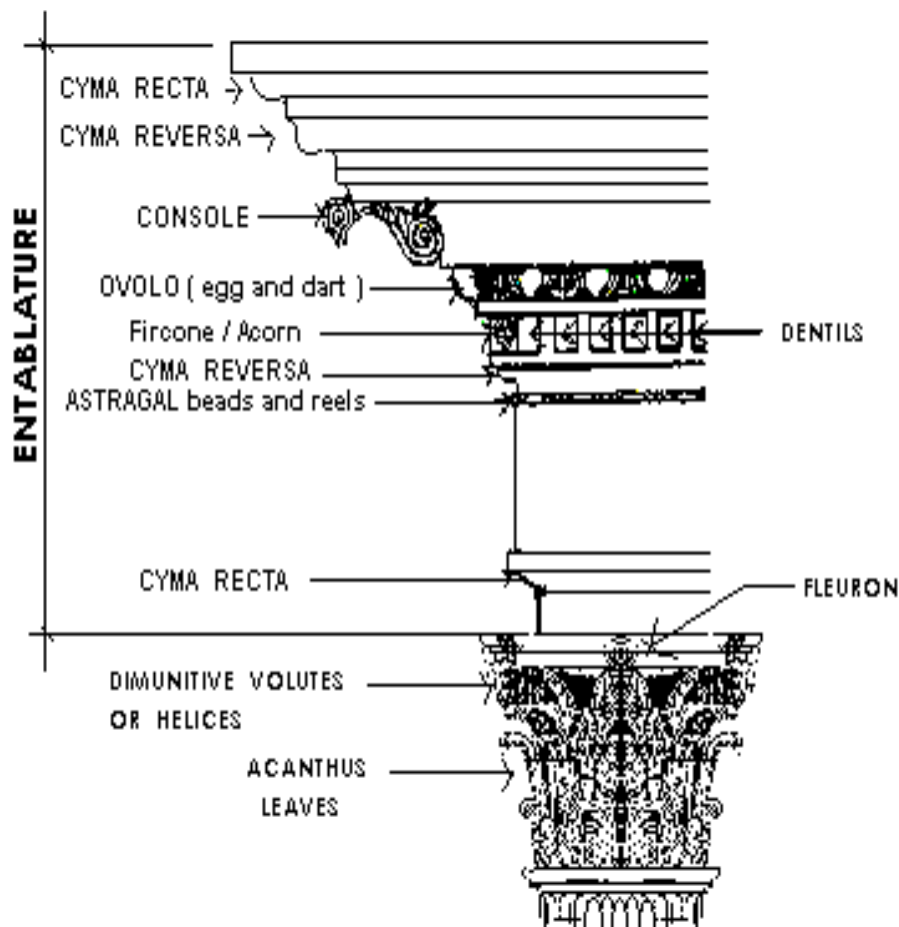
- 1. "IN ANTIS" – temples that have one to four columns between antae at the front. Two is the usual no.
- 2. "AMPHI- ANTIS" – temples that have one to four columns between antae at the front and rear. Two is the usual no.
- 3. "PROSTYLE" – temples that have a portico of columns at front.
- 4. "AMPHI - PROSTYLE" – temples that have a portico of columns at the front & rear.
- 5. "PERIPTERAL" – temples that have single line of columns surrounding the naos.
- 6. "PSEUDO – PERIPTERAL" – temples that have flanked of cols. Attached to the naos wall.
- 6. "DIPTERAL" – temples that have a double line of columns surrounding the naos.
- 8. "PSEUDO – DIPTERAL" – temples are like the last, but the inner range of columns is omitted on the flanks of the naos.

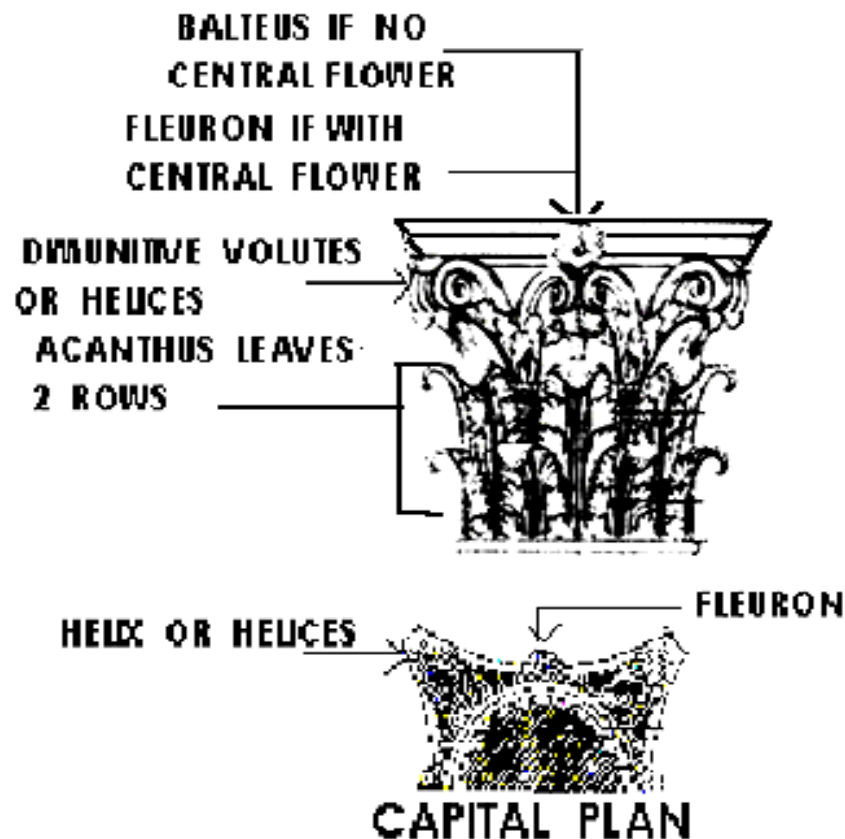


2nd CAPITAL Introduced by GREEK ARCHITECTURE
IONIC ORDER – More Sophisticated order. Less heavy than the Doric, less elaborated than the Corinthian Order. It was used in “ Erechtheion, Athens, also of Artemis, Ephesus.



3rd CAPITAL Introduced by the GREEK ARCHITETURE
CORINTHIAN ORDER – Most elaborated & most elegant of all the 3 capitals introduced by the Greeks. It looks like an “ Inverted Bell “.





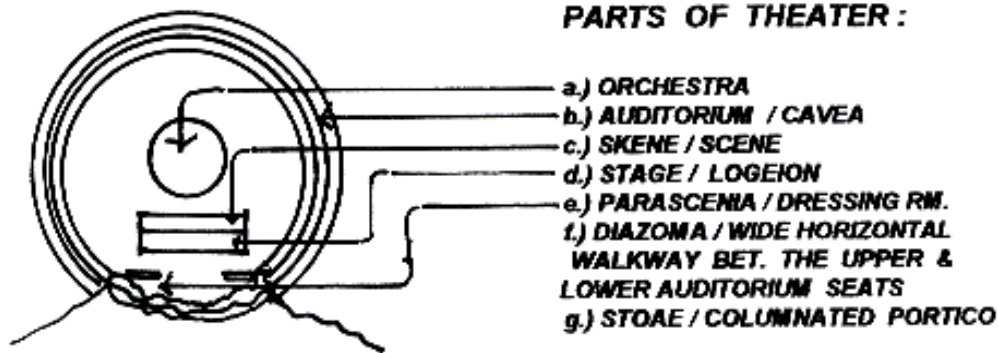
ARCHITECTURAL STRUCTURES (TEMPLES)

- a). **The Parthenon, Athens (Doric, Peripteral, Octastyle)** dedicated to the goddess Athena, largest Greek Temple.
Architect: Ictinus & Callicrates
Master Sculptor: Phedias
- b). **The Temple of Zeus Olympus, Agrigento (Doric, Pseudo – Peripteral, Heptastyle).**
 2nd largest Greek temple, uses “Atlantes”, carved male figure.
 Atlas – male figure support carrying the world in kneeling position.
 Telamones – male figure support in standing position.
Architect: Theron
- c). **Temple of Apollo Epicurius, Bassae (Doric, Ionic, Corinthian, Peripteral, Hexastyle).**
Architect: Ictinus
- d). **Temple of Nike Apteros, Athens (Ionic, Amphi – Prostyle, Tetrastyle)** dedicated to the “wingless victory”.
Architect: Callicrates
- e). **The Erechtheion, Athens (Ionic, Apteral, Irregular Plan, No side colonnades.)**
 Forms the imposing entrance to the Acropolis. Uses “caryatid porch”.
 Caryatids – female figure support w/out a basket on her head.
 Canephorae – female figure support carrying a basket on her head.
 Uses “Egg & tongue” or “Egg & Dart” ornament.
- f). **The Temple of Artemis, Ephesus (Hellenistic temple, Ionic, Dipteral, Octastyle).**
 One of the seven wonders of the world, Center of Pan – Ionic festival of the Asiatic Colonies.
Architect: Deinocrates, under the time of Alexander the Great.
Master Sculptor: Scopas
- g). **The Choragic Monument of Lysicrates, Athens (Corinthian)** – a type of monument erected to support a Tripoid, as a prize for athletic exercises or musical competitions in Greek festival.
- h). **The Olympion, Athens (Corinthian, Dipteral, Octastyle)**
Architect: Cossutius
Builder: Antiochus Epiphanes
- i). **Tower of the Winds, Athens (Octagonal structure) known as the Horologium of Andronikos Cyrrhestes,** Clepsydra or water-clock internally, sundial externally.
- j). **The theater of Dionysos, Athens** – where famous Choragic competitions took place during the Panathenaic festivals, prototype of all Greek temples.
- k). **The Theater, Epidauros** – most beautiful & preserved Greek Temple.

4. **Propylaea** – entrance gateways w/c marked the approach to the sacred enclosure in many cities in Greece .

e.g. **Propylaea of Athens** – forms the imposing entrance to Acropolis.
 Erected by: Pericles / Architect by: Mnesicles
 Propylaea, Epidauros
 Propylaea, Priene
 Propylaea, Eleusis

5. **Theater** – an open air structure, which consisted of orchestra, auditorium or cavea out of the slope of hillside, in or near city.



e.g. Greek Theater:

1. Theater, Epidauros – most beautiful example & well preserved bldg.
Architect: Polycleitus
2. Theater of Dionysos, Athens – considered to be the prototype of all Greek theaters & accommodating almost 18,000 spectators.

6. **Public Bldg.** – restoration of Athens, Olympia, Delphi, & Epidauros gave an idea of the distribution of bldgs. on this famous sites.

- a). **Agora** or Town Square – an open air, meeting place for the transaction of business & also market place.
- b). **Stoa** – a long colonnaded bldg. w/c serves to connect public monuments & for shelter.

e.g. **Stoas of Eumenes, Athens**
 Echo Collonade or Stoa Poikile, Olympia
 Stoa of Attalos 11, Athens

- c). **Prytaneion** – a senate house for the chief dignitaries of the city.

e.g. **Prytaneion, Olympia**
 Prytaneion, Athens
 Prytaneion, Priene

- d). **Bouleuterion** – or council house, covered meeting place of the democratically elected councils.

e. g. **Bouleuterion, Miletus** – largest accommodation of 1,200 people.

- e). **Assembly Halls** – used by citizens in general assembly.

e. g. **Thersillion, Megapolis**
 Ecclesiasterion, Priene

- f). **Odeion** – a theater bldg. used mainly by musicians in the presentation of their works for competition & for public approval.

e. g. **Odeion of Pericles, Athens**
 Odeion of Herodes Atticus, Athens

- g). **Stadium / Stadion** – foot race course & also used for other athletic performances.

e. g. **The Stadium, Athens** – up to 50,000 spectators.

Architect: Herodes Atticus

Largest Stadium: Louisiana Superdome

- h). **Hippodrome** – plan similar to stadium but longer, for horse & chariot racing

- i). **Palaestra** – a wrestling school.

- j). **Gymnasium** – a place for physical exercise, both Palaestra & Gymnasium were prototype of Roman "Thermae".

Parts of Gymnasium :

1. Courts for athletes
2. Tanks for bathers
3. Dressing rooms & toilets
4. Exedrae & other seats for expectators
5. Stores, places for rest & conversation
6. Ephebeum or club – for lectures

e. g. *Gymnasia, Olympia*
Gymnasia, Ephesus
Gymnasia, Pergamon

- k). *Naval bldgs . – includes ship – sheds and stores*
 e. g. *Sanctuary of the Bulls, Delos*

- l). *Tombs – “mausoleum “ or monumental tombs, one of the most famous of all tombs & one of the 7 wonders of the world was erected to “ King Mausolos by his widow, Artemesia & from it derived the term “mausoleum” applied to monumental tombs.*

e. g. *The Mausoeum, Halicarnassos (Architect : Pythius & Satyrus)*
Master Sculptor: Scopas

The Lion Tomb
Sarchophagus, Cnidos
Tomb of the Weepers , Sidon
Nereid Monument , Xanthos

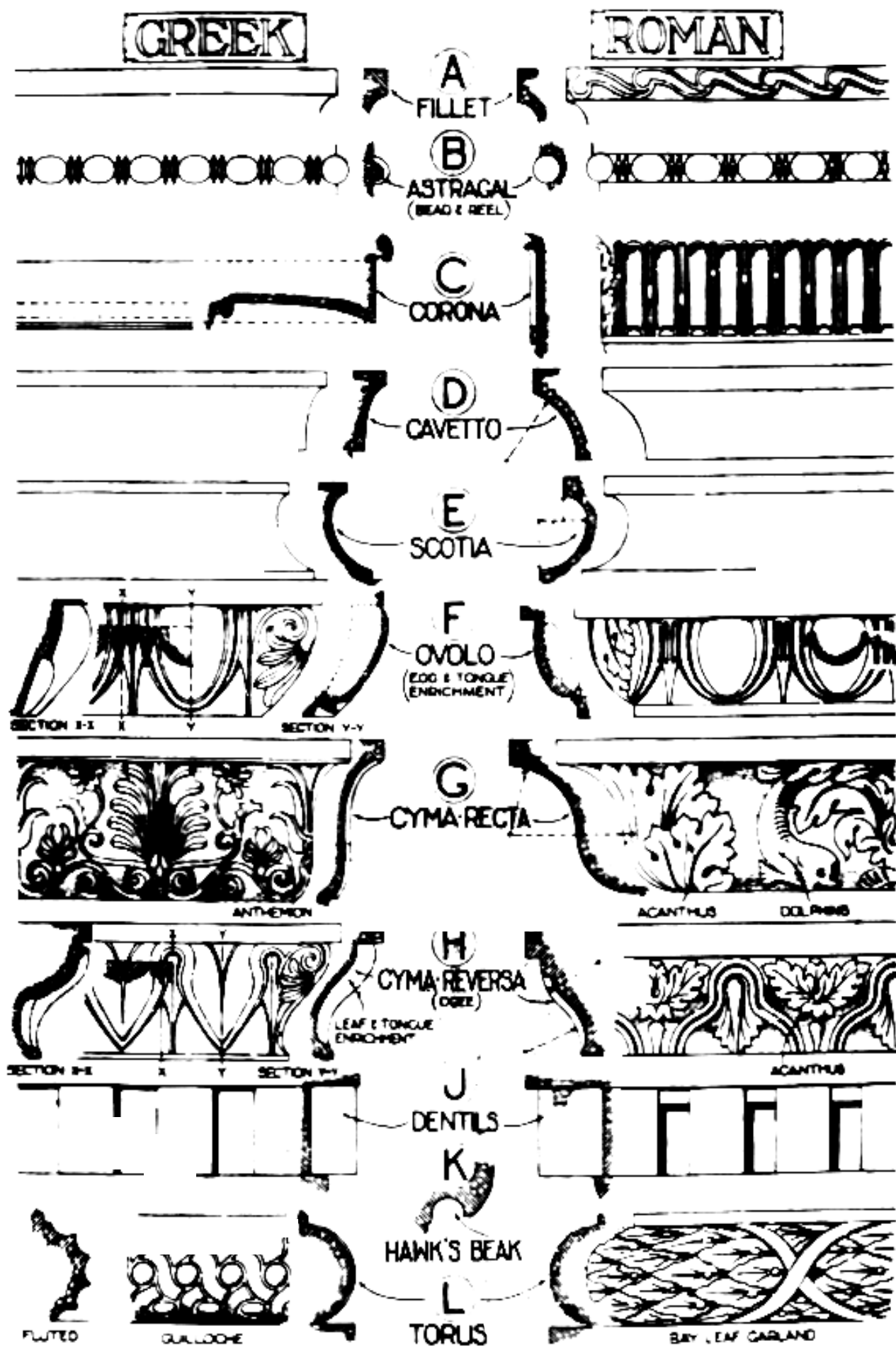
- m.) *Domestic Bldg. or Greek Houses – usually one storey with rooms built around an internal court w/ porticoes on three sides & Chambers grouped around.*

e.g. *House No., Priene – planned similar to Aegean Megaron & the best example of a Greekhouse. Maison De la Coline .*

GREEK TERMS

1. **ABACUS** – the flat square on top of a capital ; uppermost member of a capital.
2. **ANCON or Console** – a scrolled bracket w/c supports a cornice or entablature over a door or a window.
3. **ANDRON / ANDRONITIS** – the part of a bldg. used by men espily at the banquet rm.
4. **APOTHECA** – store room , wine storage.
5. **CYCLOSTYLE** – a circular projecting collonade.
7. **CYRTOSTYLE** – a circular projecting portico.
8. **DENTILS** – a small square block used in series in Ionic , Corinthian , Composite and rarely in Doric Cornices.
9. **DROMOS** – the long deep passage way to an ancient Egyptian tomb.
10. **ENTASIS** – a slight convex curve used on Greek columns (vertical & Horizontal)
11. **to correct the optical illusion of concavity w/c result to dropping & sagging.**
12. **FLUTING** – a shallow , concave grooves running vertically on the shaft of a column , pilaster or other surfaces.
12. **GLYPTOTHECA**- a sculpture gallery.
13. **HECATOMPEDON**- a bldg. 100ft. in length or width ; esp. the cella of Parthenon.
14. **KONISTRA** – in ancient Greek theater , it was the orchestra.
15. **LOGGIA** – an arcaded or collonaded porch or gallery attached to a larger structure
16. **MODILLION** – a console on the other side of a doorway supporting a cornice.
17. **PLINTH** – the lowest square member of the base treasury house.
18. **QUADRIGA** – a chariot drawn by 4 horses.
19. **THESAURUS** – in ancient Greece it is the treasury house.
20. **TRIGA** – a chariot drawn by 3 horses.
21. **VOLUTE** – a spiral scroll in an Ionic capital; smaller versions appear on Corinthian and Composite capitals.

GREEK MOULDINGS & ORNAMENTS



ROMAN ARCHITECTURE



C O L O

S S

E U M



TRUIMPHAL ARCHES

AQUEDUCTS

TRAJAN MARKET



P A N T H E O N

T E M

P L E



ROMAN

HADRIAN

BATH

VILLAS



ROMAN FORUMS

TRAJAN

PILLARS

2ND CENTURY– 4TH CENTURY A. D.

A. GEOGRAPHICAL INFLUENCE

Rome has a commanding position in the Mediterranean sea w/c enabled to act as an intermediary in spreading art and civilization over Europe Western Asia & North Africa. There is marked geographical differences bet. Greeks and the Romans w/ regards to national character, Romans were very close.

B. GEOLOGICAL INFLUENCE

Chief bldg. material was concrete w/c rendered finest example of Roman Architecture. They also have ample supply of marbles, terra-cotta, stone, bricks, sand, gravel & timber. Concrete was made up of stone or brick rubble & a mortar of w/c the important ingredient was "pozzolana".

C. CLIMATIC INFLUENCE

Rome was divided into 3 Regions; North; Central & South Italy Because of this variety of climatic conditions, there was a diversity of arch'l. features & treatment in the peninsula itself.

D. RELIGIOUS INFLUENCE

Religion became a part of the constitution of the state. They venerated more their emperors than their gods and because of this attitude, there were less temples for worship.

E. SOCIAL & POLITICAL INFLUENCE

Important Emperors who patronizes architecture in Rome;

- | | | |
|--------------|---------------------|---------------|
| 1. NERO | 4. HADRIAN | 7. DIOCLETIAN |
| 2. VESPASIAN | 5. SEPTIMUS SEVERUS | |
| 3. TROJAN | 6. CARACALLA | |

F. HISTORICAL INFLUENCE

Periods of development:

1. **ETRUSCAN** - notable for the use of the true & "radiating arch", they were the earliest civilization & great builders, invented the "tuscan capital", their temple were oriented at the south.
2. **ROMAN** – adopted the columnar & trabeated style of the Greeks and developed the Arch., vault, & dome of the Etruscans.

ARCHITECTURAL CHARACTER

1. VASTNESS & MAGNIFICENCE.
2. OSTENTATION & ORNATENESS.

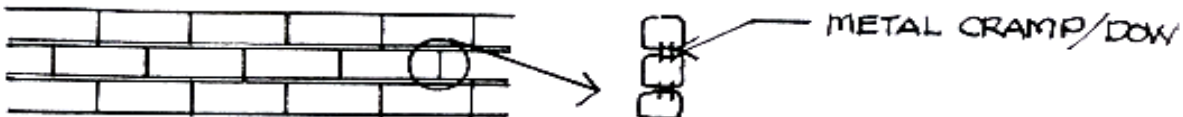
Romans use arch in structural innovation.

DIFFERENT TYPES OF VAULTS DEVELOPMENT BY THE ROMANS:

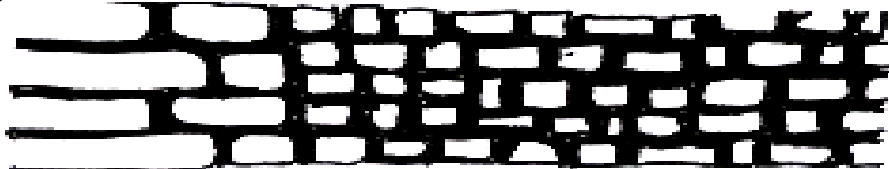
1. Semi-circular / wagon –headed / Barrel vault
2. Cross vault
3. Hemispherical Dome

ROMAN CONCRETE WALLS :

1. **Opus Quadratum** – made up of rectangular blocks of stone with or w/ out mortar joints but frequently secured with dowels and cramps.



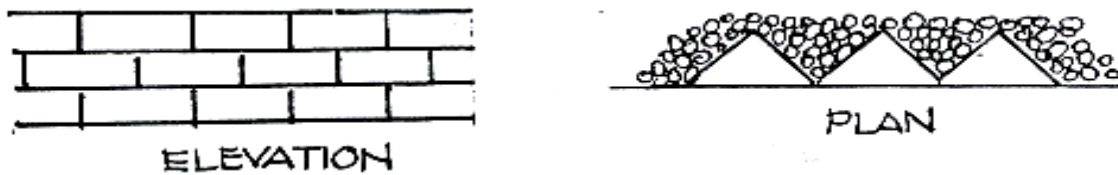
2. **Opus Incertum** – made up of small stones laid in a loose pattern roughly assembling the polygonal work.



3. **Opus Recticulatum** – fine joints were in diagonal lines like the meshes of a net.



4. **Opus Testaceum** – triangular bricks (plan) specially made for facing the walls.

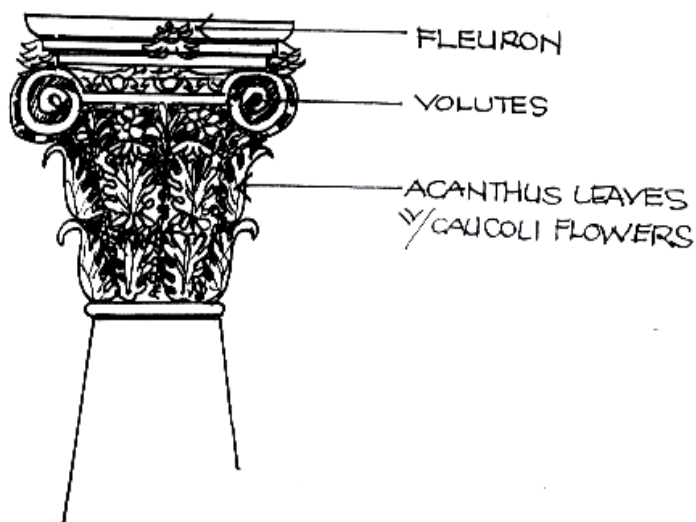


5. **Opus Mixtum** – consisted of bands of "tufa" introduced at intervals in the ordinary brick facing or alteration of rectangular blocks with small squared stone blocks.

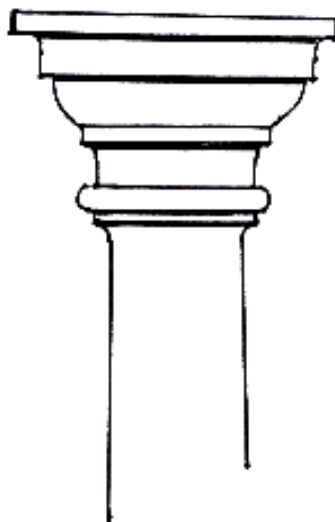


TWO COLUMN CAPITALS DEVELOPED

1. **COMPOSITE** – combination of Ionic & corinthian



2. **TUSCAN** - counterpart of Doric capital



ROMAN ARCHITECTURE EXAMPLE :

A. **FORUM** – open space used as a meeting place , market or rendezvous for political demonstrations.

e. g. Forum Romanum, Rome – oldest & most imp't., used as Hippodrome.
Forum of Trajan, Rome – largest.

B. **RECTANGULAR TEMPLES** – used Pseudo – Peripteral (half col. Attached to the naos wall, raised in a "podium", oriented towards the south.

- e. g. Temple of Fortuna Virilis, Rome
 Temple of Mars Ultor, Rome
 Temple of Diana, Nimes
 Temple of Vespasian, Rome
 Temple of Jupiter, Spalato
 Temple of Saturn, Rome
 Temple of Venus & Rome
 Maison Carree, Nimes

C. CIRCULAR & POLYGONAL TEMPLES – derived from the temples of the Greeks & the Etruscans w/c became the prototype of the Christian baptistery.

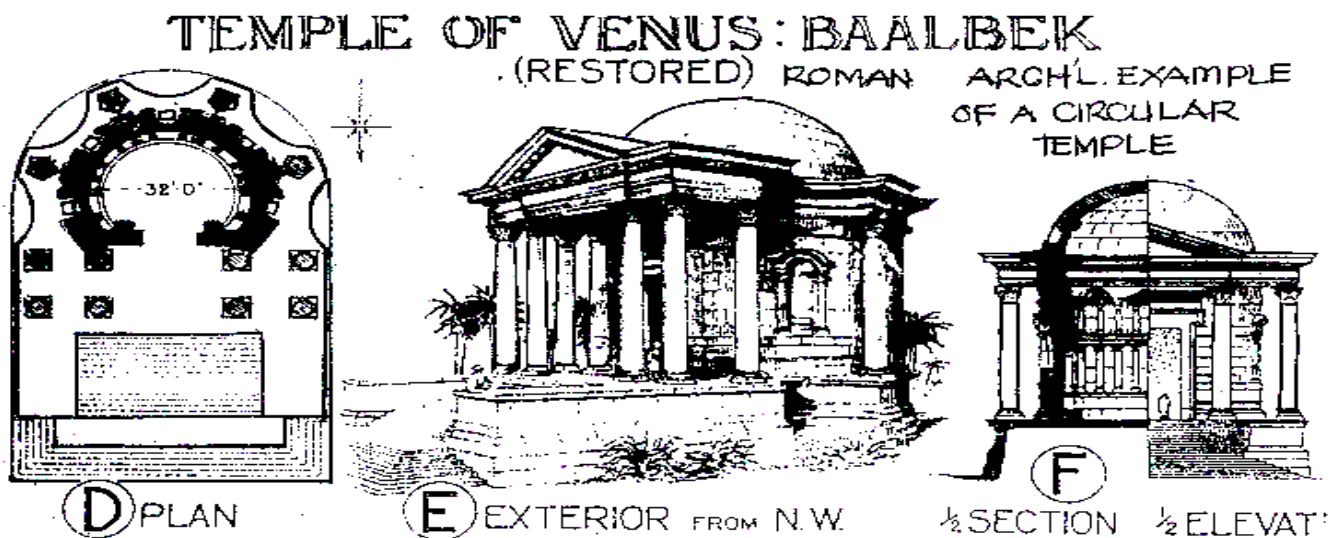
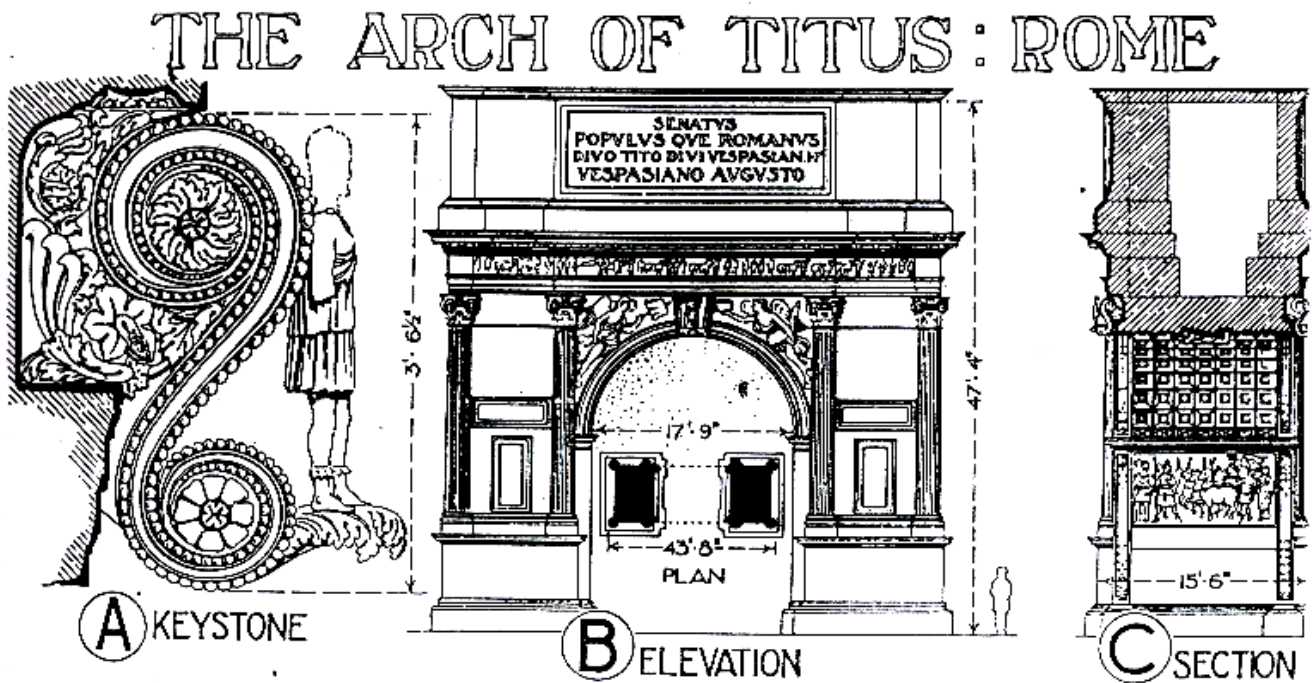
- e. g. Temple of Vesta, Rome – the most sacred shrine & source of Roman life & power.

Temple of Venus, Baalbek

The Pantheon, Rome – most famous & perfect preservation of all ancient bldgs. in Rome. It was now converted into a Christian church named Sta. Maria Rotonda.

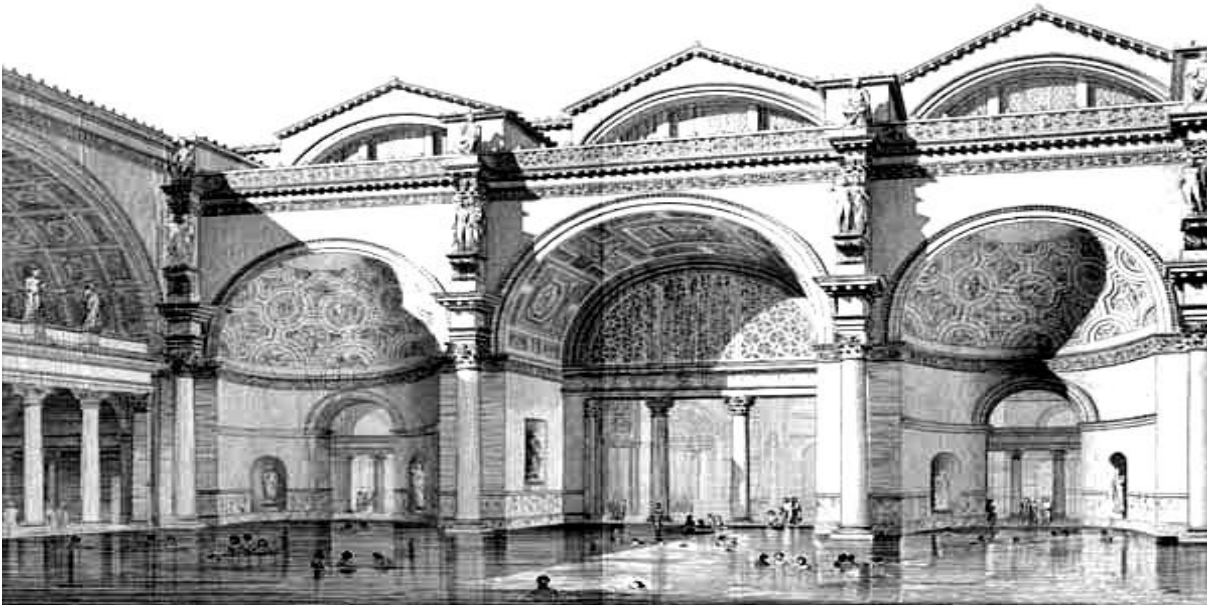
D. BASILICAS – halls of justice or Assembly hall.

- e. g. Trajan's Basilica, Rome – built by Apollodorus of Damascus
 Basilica of Constantine, Rome – also known as Basilica of Maxentius or Basilica Nova.



E. THERMAE –a palatial public bath with three main parts :

1. Main bldg. Central Structure w/ chief apartments
 - a) Tepidarium – warm room
 - b) Calidarium – hot room, or with hot water bath
 - c) Frigidarium – cooling room
 - d) Sudarium – dry sweating room
 - e) Apodyteria – dressing room
 - f) Palaestra - for physical exercise
 - g) Unctuarium or unctoria – place for oils & perfumes
 - h) Spaeresterium– game room



2. **XYSTUS OR PUBLIC PARK W/ AVENUES OF TREES** – a large open space with trees, statues & fountains, part of it was used as a stadium for foot-racing & where athletic sports took place.

3. OUTER RING OF APARTMENTS

Lecture rooms

Exedrae

Collonade

Large Reservoir

e.g. Thermae Caracalla, Rome – with a capacity of 1,600 bathers

Thermae of Diocletian Rome – largest w/ capacity of 3,000 bathers

Thermae of Titus , Rome

Thermae of Grippa, Rome

F. BALNEUM private bath in Roman palaces & houses containing the ff :

1. Tepidarium
2. Calidarium
3. Frigidarium

e.g Hadrian Villa summer bath



Hadrian Villa - summer bath

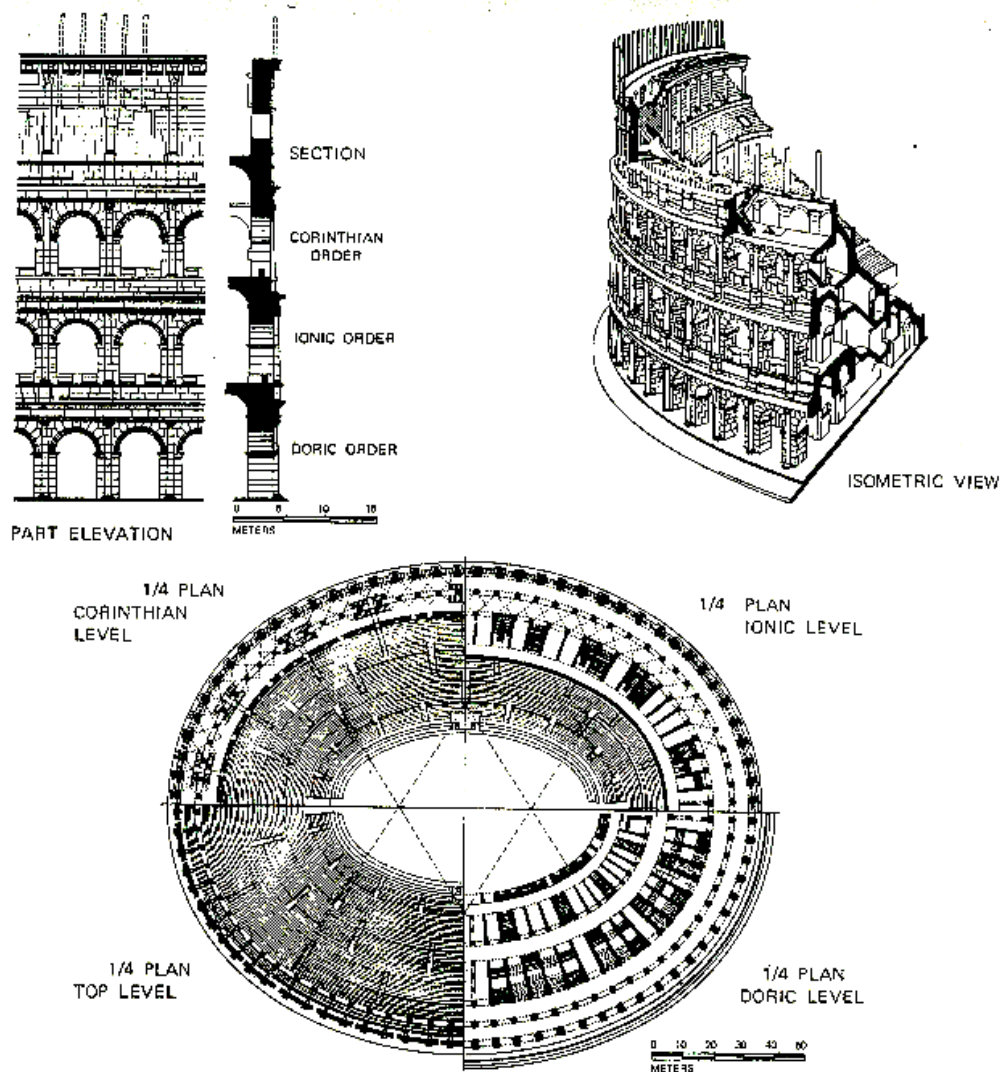


G. THEATERS OR ODEION –Roman theaters were built up by means of concrete vaulting, supporting tiers of seats, it was restricted to a semi- circle.

e. g. Theater of Marcellus, Rome
Theater Orange

H. AMPHI THEATERS OR COLOSSEUM –use for gladiatorial combats, elliptical in plan.

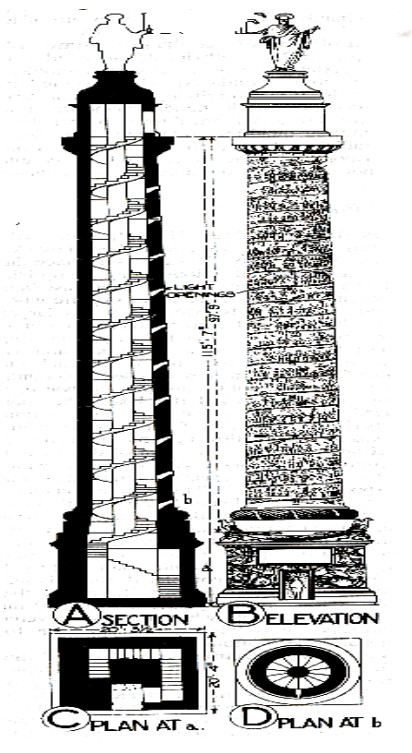
e. g. The Colosseum, Rome – known as “Flavian Amphitheater”, commenced by Vespasian & completed by Domitian.



ROMAN PANTHEON



K. TRIUMPHAL ARCHES – erected to commemorate victorious campaign of emperors and Generals.
e. g. Arch of Tiberius, Orange
Arch of Titus, Rome
Arch of Septimius Severus, Rome
Arch of Constantine, Rome



TRAJAN COLUMN - this are pillars of victory

L. TOWN GATEWAYS AND ARCHWAYS

(3) Main Types

- a.) As a protective wall & commemorative monument.
- b.) As a ornamental portals to forum or market places.
- c.) Arch built at main street intersection w/c were collonaded.
- e. g. *Porte S. Andre, & the Porte d' Arroux, Autun*
Porte De Mars, Rheims
Portico of Octavia, Rome by Augustus

M. PILLARS OF VICTORY OR MONUMENTAL COLUMNS –

were erected to record triumphs of victorious Generals
(conquered by land).

- e. g. *Trajan's Column, Rome*

It is a Roman Doric Column, entirely of marble, w/ a total ht. of 115 ft. 7 inches & a shaft 12 in. diameter w/ a spiral staircase.

Rostral Columns, Rome

Frequently erected in the time of the Emperors to celebrate naval victories, and took their name from the rostra, or rows of captured ships.

N. PALACES – use to house the Emperors.

- e. g. *Palaces of the Emperors, Rome*
Golden House of Nero, Rome

Palace of Diocletian, Spalato largest palace & often called “a city in a house” covered a total of 8 acres, almost the size of Escorial, Spain.

O. ROMAN HOUSES

(3) Types of Roman Dwellings :

- a.) *The Domus or private house – center of family apartments.*

Typical Parts of a Domus :

- 1.) *Prothyrum or Entrance passage*
- 2.) *Atrium or Entrance court, open to the sky & at the center is a “Impluvium” a water cistern collector*
- 3.) *Tablinum or open living room*
- 4.) *Peristyle – an inner collonated court w/ garden*
- 5.) *Cubicula or bedroom*
- 6.) *Oecus or reception room*
- 7.) *Alae or recesses for conversation*
- 8.) *Kitchen & Pantry*
- e. g. *House of Livia, Rome*
House of Surgeon, Pompeii

- b.) **Villa or Country House** – a luxurious country house with surrounding terraces and gardens, colonnades, palasestae, theaters, & thermae.

- e. g. *Hadrian's Villa, Tivoli*

- c.) **Insula or Apartment Block** – many storeyed tenement also called “Werkmen's Dwelling”.

P. AQUEDUCTS use for water supply, w/ smooth channels or “specus” lined w/ hard cement & carried on arches, in several tiers.

- e. g. *Aqua Marcia, Rome*
Aqua Claudia, Rome built w/ Emperors Caligula & Claudia.

Q. BRIDGES OR “ PONS” – simple, solid & practical construction designed to resist the rush of water.

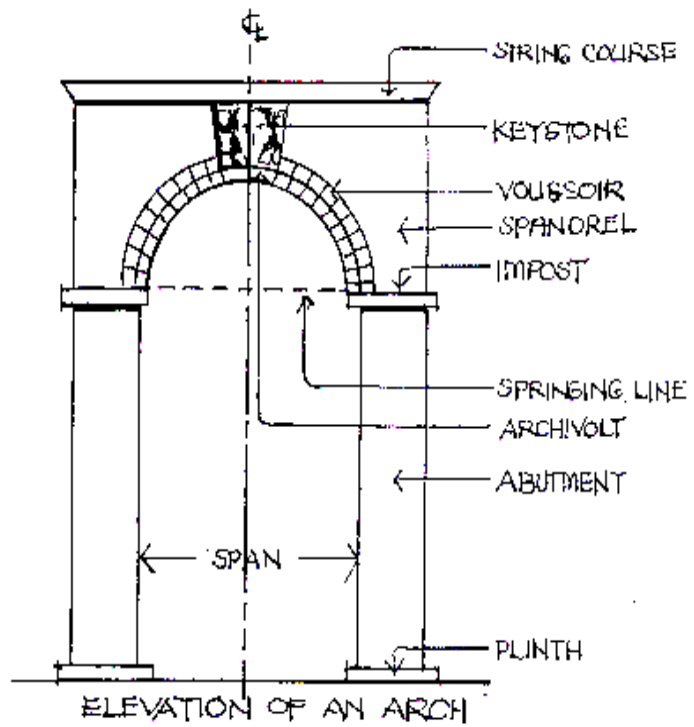
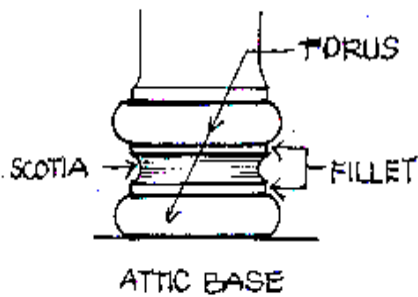
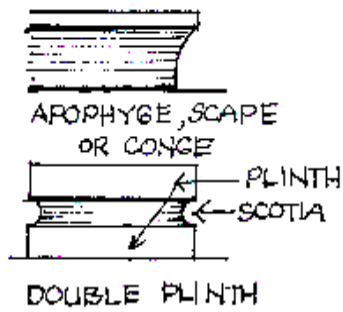
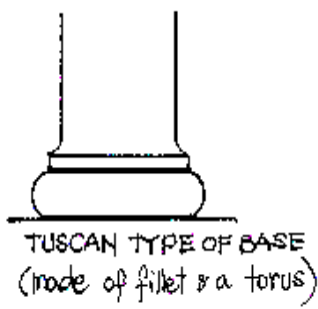
- e. g. *Pons Sublicius, Rome*
Pons Mulvius, Rome
Bridge of Augustus, Rimini

R. FOUNTAINS – striking features of ancient & modern Rome

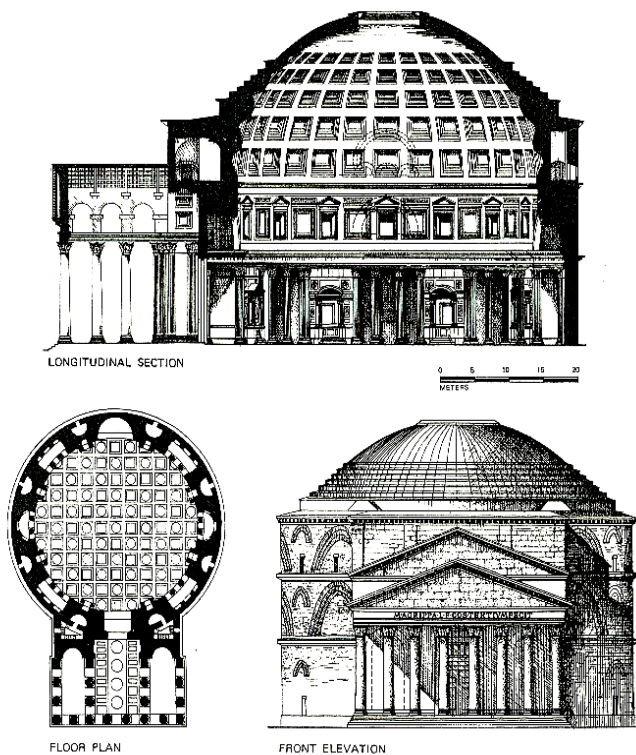
(2) Types :

- 1.) *“Lacus” or Locus – designed similar to a large basin of water.*
- 2.) *“Salientes” – similar to a large basin of water w/ spouting jets.*

PLINTHS/BASE



RECONSTRUCTION



Pantheon Temple Interior

Early Christian Architecture



Early Christian Architecture 4th Century A.D.

A. GEOGRAPHICAL INFLUENCE

Christianity had its birth in Judea, Eastern provinces of the Roman Empire. Early Christian Architecture was influenced by the existing Roman art.

B. GEOLOGICAL INFLUENCE

The ruins of the Roman buildings provided quarry where materials were obtained. This influence of the style for construction, decoration for columns, & other architectural features as well as fine sculpture and mosaic from older building w/c were turn into basilican churches of the new faith.

C. CLIMACTIC INFLUENCE

The climactic condition of Roman provinces where Christianity was established naturally modified the style. The fiercer the sun & hotter climate necessitated small windows & other Eastern features.

D. RELIGIOUS INFLUENCE

Christianity spread out rapidly and was an important factor in the development of early Christian architecture & inspired the building of some of the greatest architectural monuments. Constantine & Licinus issued their celebrated edict of Milan giving Christianity equal rights with other religions & Constantine made it the official religion.

E. SOCIAL AND POLITICAL INFLUENCE

Constantine was the prime character but was not proclaimed Emperor; he removed his empire from Rome to Byzantium and developed a new style of Architecture.

F. HISTORICAL INFLUENCE

The final phase of Roman Architecture fr. 4th to 6th Century, primarily in church bldg.

ARCHITECTURAL CHARACTER

Early Christian Architecture is basically Roman in character but executed it through:

1. SIMPLICITY IN DESIGN
2. COARSENESS IN EXECUTION

IMPORTANT FEATURES OF THE EARLY CHRISTIAN ARCHITECTURE

1. They contributed in the development of "ribbed vaulting & arcades & timber trussed roof".
2. They used bell tower or "campanile" in their exterior.
3. They had either closely spaced columns carrying the entablature (trabeated) or more widely spaced columns carrying semi-circular arches known as "archivolt".
4. They were usually with 3-5 aisles covered by a simple trussed roof.
Uses long rows of "off-repeated" columns fr. entry to sanctuary for a long Church appearance.
5. An "arch of triumph" (transaction thru death to life eternal) gave entrance to Sanctuary with the high altar at the corner.

EXAMPLE OF EARLY CHRISTIAN STRUCTURES

A. CHIEF CHURCHES

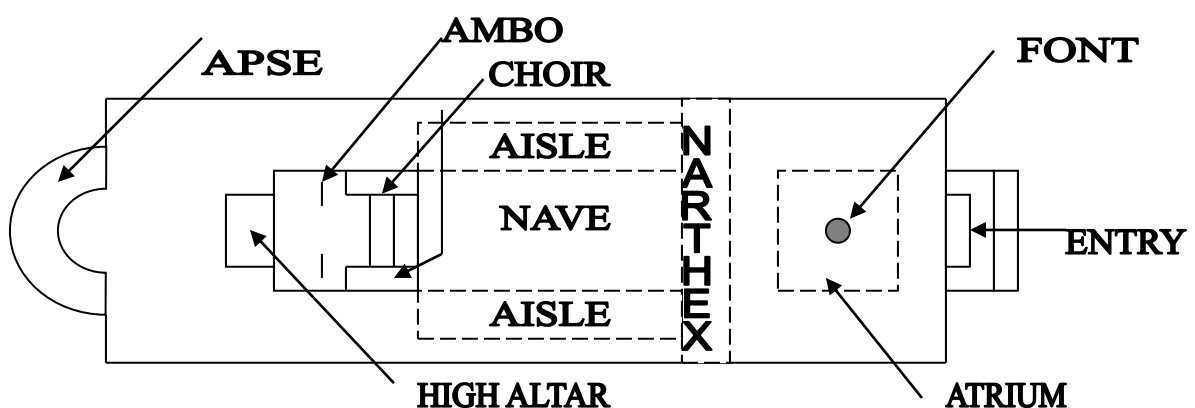
BASILICAN CHURCHES

In the construction of a basilican church, there is a rule that it should be built right over the burial place of the saint to whom the church was dedicated. And over this burial place, "crypt" or confessio was the high altar covered by a "ciborium" also known as tabernacle or "baldachino".

PARTS OF BASILICAN CHURCH

1. **ATRIUM** – open rectangular forecourt, surrounded by arcades which formed as the approach to the church w/ a fountain at the center, containing water used for "ablution" (a form of cleansing).
2. **NARTHEX** – covered area between the atrium & the church and which was assigned to the penitents.
3. **NAVE and THE AISLE** – the nave is the central aisle usually lighted by a clear storey of small windows, w/ an aisle on either side usually half the width of the nave.
4. **SANCTUARY** – preceded by the "arch of triumph" with a high altar in the center standing free under its "baldachino" upheld by marble columns.
5. **CHOIR** – placed in front of the & was enclosed by a low screen walls known as "cancelli" (hence chancel) & was provided w/ a pulpit or "ambo" on either side use for reading the epistle and gospel.
6. **APSE** – terminal of the church, where "sanctuary" is located and the bishop took the central space. Apse orientation at the east, while the entrance, at the west.

EARLY CHRISTIAN BASILICAN PLAN



EARLY CHRISTIAN BASILICAN (interior)



BASILICAN CHURCHES

- modeled from Roman Halls of Justice
- evolved from Roman dwelling houses
- erected over the burial place of a Saint to whom the church was dedicated.

- e. g. **The Basilican Church of St. Peter**, – dedicated to the martyrdom of St. Peter .
St. Paolo fuori Le Mura, Rome – largest & most impressive among all basilican churches.
Church of nativity, Bethlehem – founded by Constantine , built over the traditional birth of Christ.
Church of the Holy Sepulchre, Jerusalem – founded by Constantine, built over the reputed tomb of Christ.

FOR BAPTISTERIES

- e.g. The Baptistry of Constantine, Rome – by Sixtus III, dedicated to Constantine, oldest among the Italian Baptisteries.

FOR TOMBS

- e.g. Tomb of Galla Placidia, Ravenna – earliest bldg. of “ cruciform” plan.

TERMINOLOGIES:

- AMBULATORY** – a passageway around the apse of church.
ANTEPODIUM – a seat behind the choir reserved for the clergy.
BEMA – a stage reserved for the clergy.
CHEVET – the apse, ambulatory, & radiating terminal of a church.
CLERESTOREY – an upper stage in the church w/ wdos. above the adjacent roof
CLERGY – priest with the religious elders.
DAIS – a raised platform reserved for the seating of speakers or dignitaries.
ORATORY – a small private chapel furnished w/ an altar and a crucifix.
REREDOS – an ornamental screen or wall at the back of an altar.
TRANSEPT – the portion of a church crossing the main axis at the right angle & forming a cruciform plan.
TRIBUNE – a slightly elevated platform or Dais for the speaker.
TRIFORIUM – roof over the aisles below the clerestorey
SEPULCHER – a tomb or a receptacles for relics especially in a Christian altar.



Byzantine Architecture

Byzantine Architecture 4th Century – 6th Century

A. GEOGRAPHICAL INFLUENCE

From Byzantine, Constantine renamed it to Constantinople, now as “Istanbul” and also called “New Rome”. It was the Architecture of the Eastern Roman Empire w/c was dev. from Early Christian & Late Roman antecedent in the 4th century.

B. GEOLOGICAL INFLUENCE

No good building stones, & local materials such as clay for bricks & rubble for concrete were used. Marble was also used but mostly imported materials.

C. CLIMATIC INFLUENCE

Semi-tropical, thus flat roofs were used & combined w/ domes, to counter-act the New Empire.

D. RELIGIOUS INFLUENCE

Political Division between East and West, followed by the division of Churches, due to “**ICONOCLASTIC MOVEMENT**” (decree to ban the use of statues as means of representations either of human or animal forms), & this made painting figures in decoration a substitute. Early Christian Basilica was merged w/ the domical system of the Byzantine.

E. SOCIAL & POLITICAL INFLUENCE

Ways of life and corrupt conditions contributed greatly to the fall of Roman Empire.

Prominent Figures considered movers of this Architecture:

1. **THEODOSIUS II** - built several military gates and towers (defense against the Goths & Huns) but cannot avoid the Moslem or the Islamic people.
2. **JUSTINIAN** - responsible for rebuilding of St. Sophia “Divine Wisdom” w/c now turned to a Moslem Mosque.

F. HISTORICAL INFLUENCE

From 5th to 11th Century was one of the fluctuating & gradually declining fortunes. The spirit of the Byzantine Empire persisted even after the Empire had fallen, Constantine had continued up to the present day to the seat of Patriarch of the Orthodox Church.

ARCHITECTURAL CHARACTER

1. Simplicity – in external design w/c resulted in the use of clay & rubble.
2. Richness – in internal treatment importing “marble”.

CHARACTERISTIC FEATURES

1. Characterized by large pendentives supported domes to cover polygonal & square
2. Plans for churches & baptisteries; rounded arches, elaborated cols. & colors.
3. Features the grouping of small domes or semi-domes around a large central dome.
4. Extensive use of “mosaic decoration”.
5. They don't use campanile and atrium in their churches.

EXAMPLES OF BLDGS.

e. g. **S. Sophia, Constantinople** (Istanbul) also known as “Hagia Sophia”

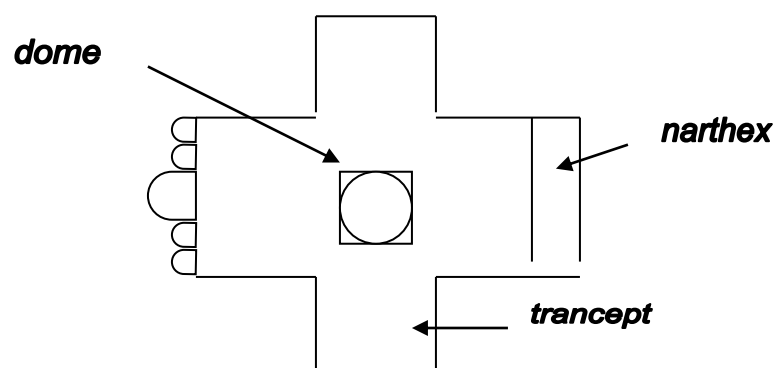
(Divine Wisdom) this is the most imp. mosque in Constantinople with 107 Multi-colored columns Arch't. : Anthemius of Tralles & Isidorus of Miletus.

S. Vitale, Ravenna – founded by Justinian and for the commemoration of the recovery of Ravenna.

S. Mark, Venice – Greek cross in plan, with “Ogee Arch”, by Archt. Cancelli

The Little Metropole, Athens – smallest bldg. in the world called “cathedral”.

PLAN OF A BYZANTINE MOSQUE

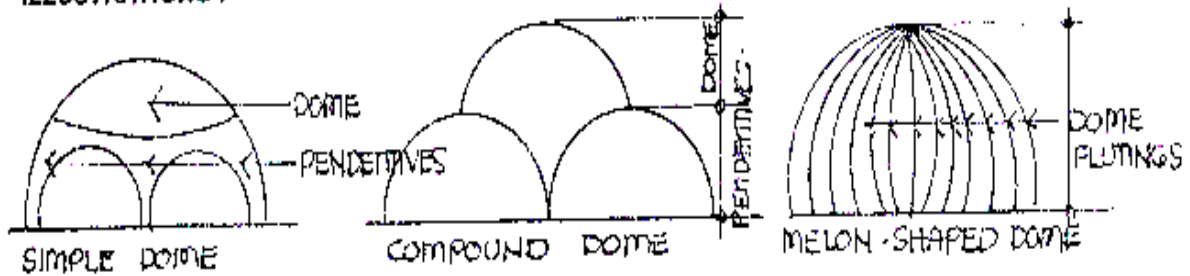


(3) Three types of Dome developed in this Architecture :

1. **SIMPLE DOME** – dome & pendentives were part of the same sphere.
2. **COMPOUND DOME** – dome is not a part but rises independently above them.
3. **MELON-SHAPED DOME** – consist of curved flutings w/c avoid the necessity of pendentives.

DOMES AND CAPITALS

ILLUSTRATIONS :



EXAMPLE OF COLUMNS

1. Cushion Capital



2. Bird & Basket



3. Wind Swept Acanthus



EXAMPLE OF ORNAMENTS

Their ornaments were religious in character.

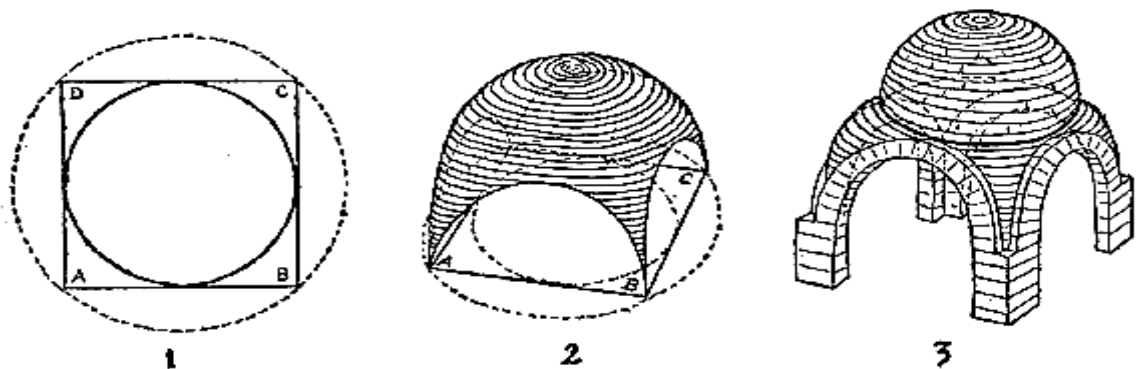
The most popular forms of ornaments used are the ff ;

1. Symbolic Figures
2. Groups of Saints
3. Peacock – symbol of eternal life
4. Endless Knot – symbol of eternity
5. Sacred Monograms of "Christ"

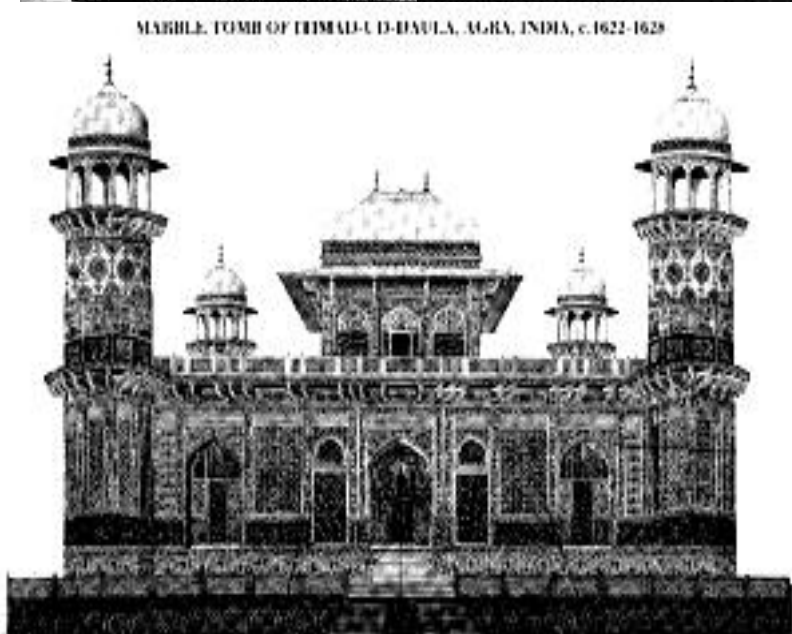
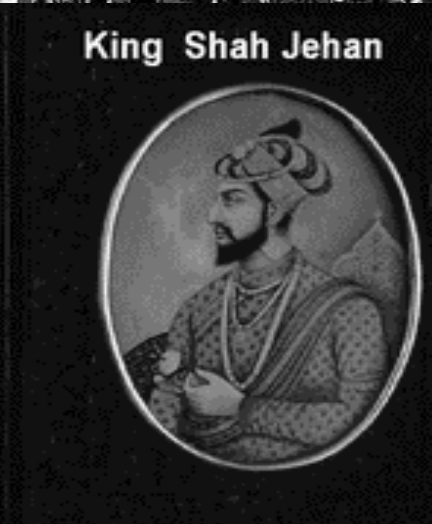
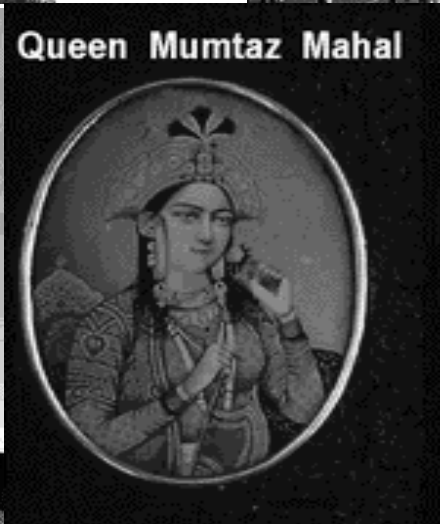
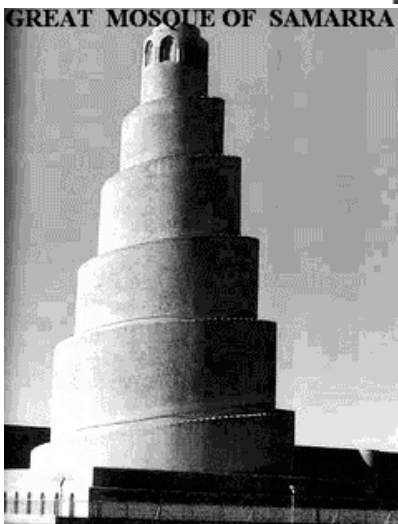
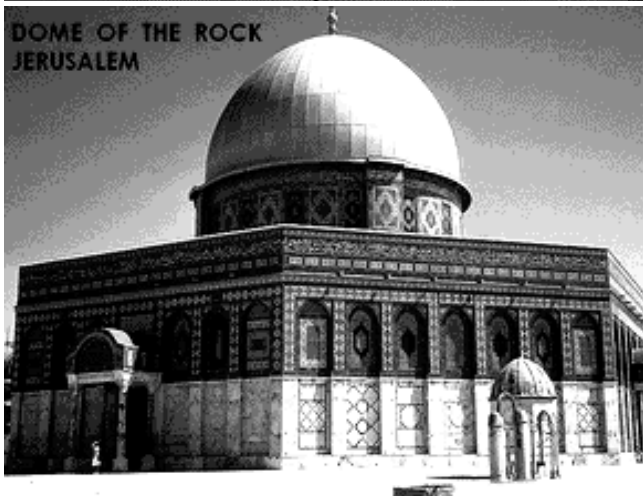
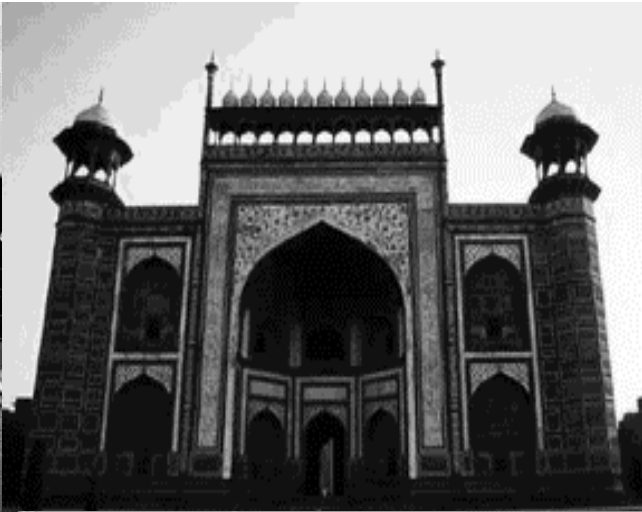
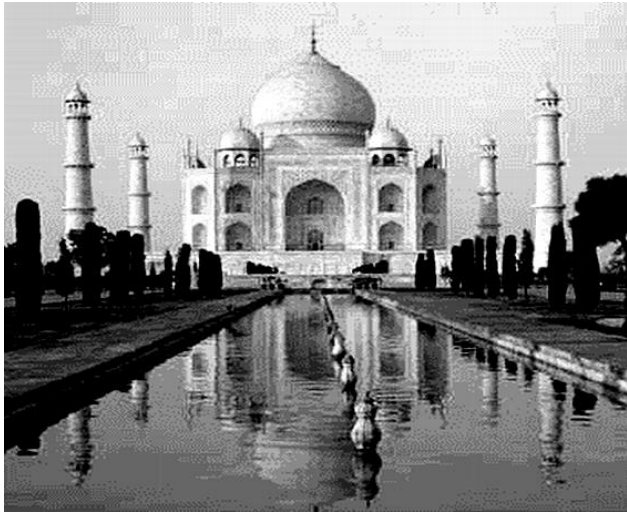
Most popular mosaic patterns for pavements

- a. Opus Sectile
- b. Opus Alexandria

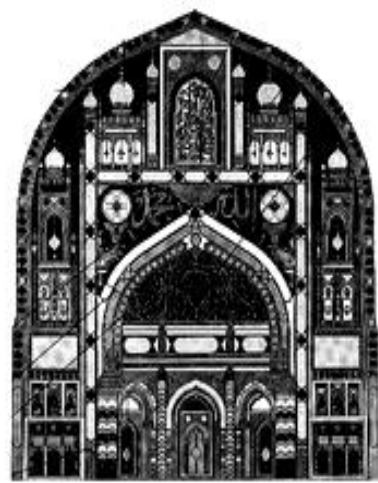
DOMES ON PENDENTIVES



A Dome on Pendentives. ABCD is the square area over which a dome is to be erected. If the diameter of the dome is equal to one side of the square, the area will not be covered; if it is equal to the diagonal of the square, the dome will project beyond the sides (1). The latter diameter was sometimes used and the sides of the dome cut off vertically so that the square was exactly covered; but the result was an imperfect dome (2). To secure a perfect dome the Byzantine builders conceived the idea of slicing this imperfect dome off horizontally just above the arches made by the vertical cutting, thus securing a circular base upon which to erect a true dome (3). The triangular segments of the original dome are the pendentives.



MARBLE TOMB OF IMDAD-UL-DAULA, AGRA, INDIA, c.1622-1628



MIHRAB, JAMI MASJID (PRINCIPAL OR CONGREGATIONAL MOSQUE), BELAPUR, INDIA, c.1656

Saracenic Architecture

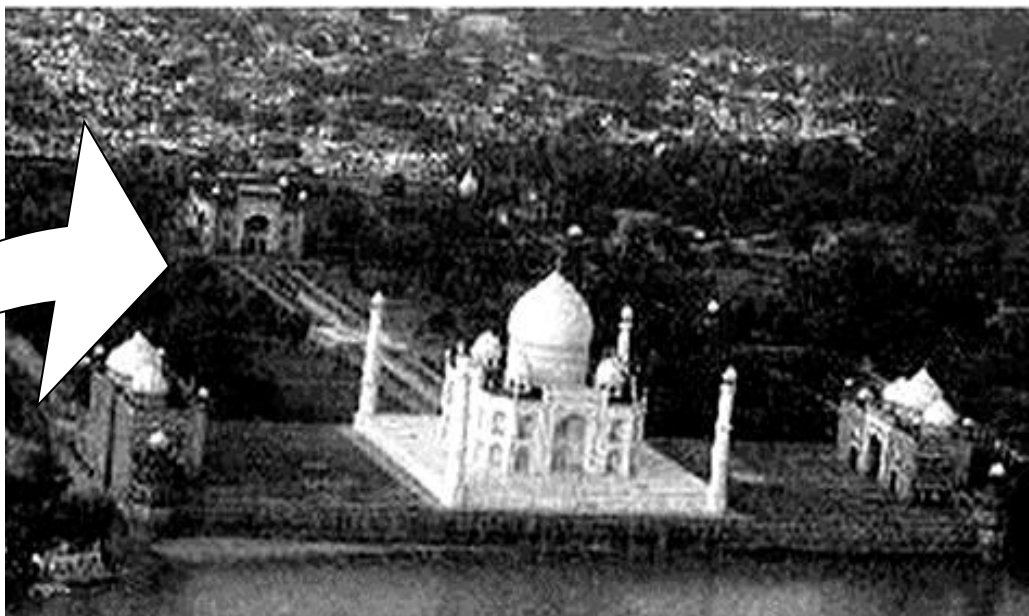
Saracenic Architecture

7TH CENTURY

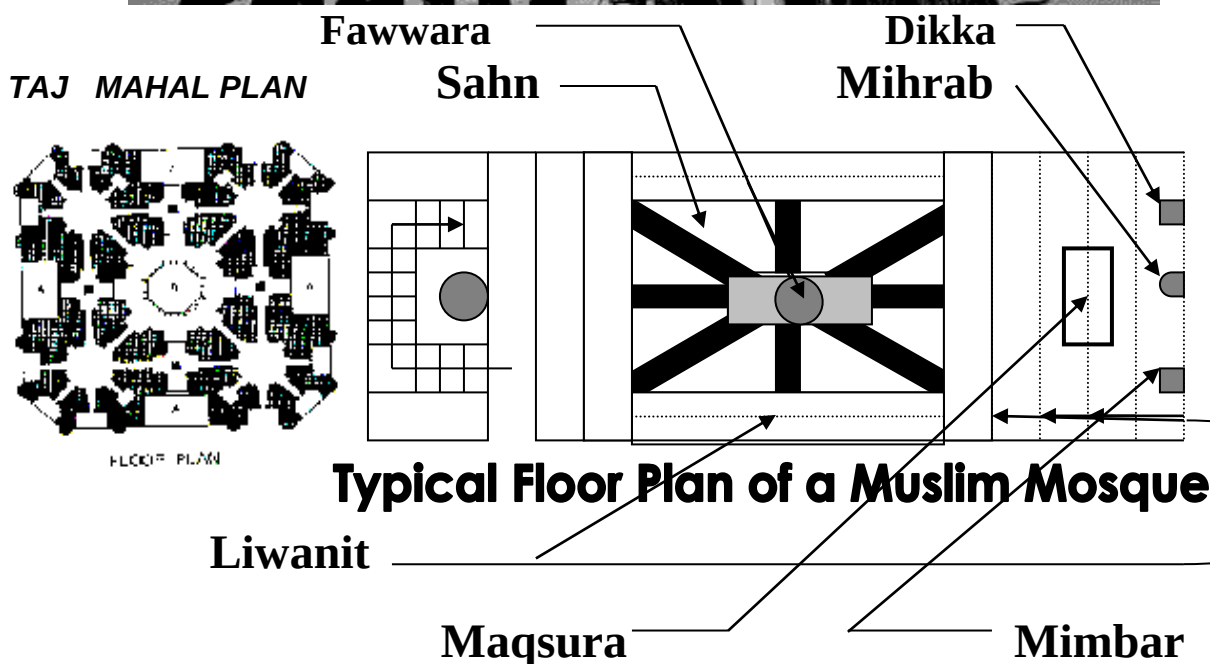
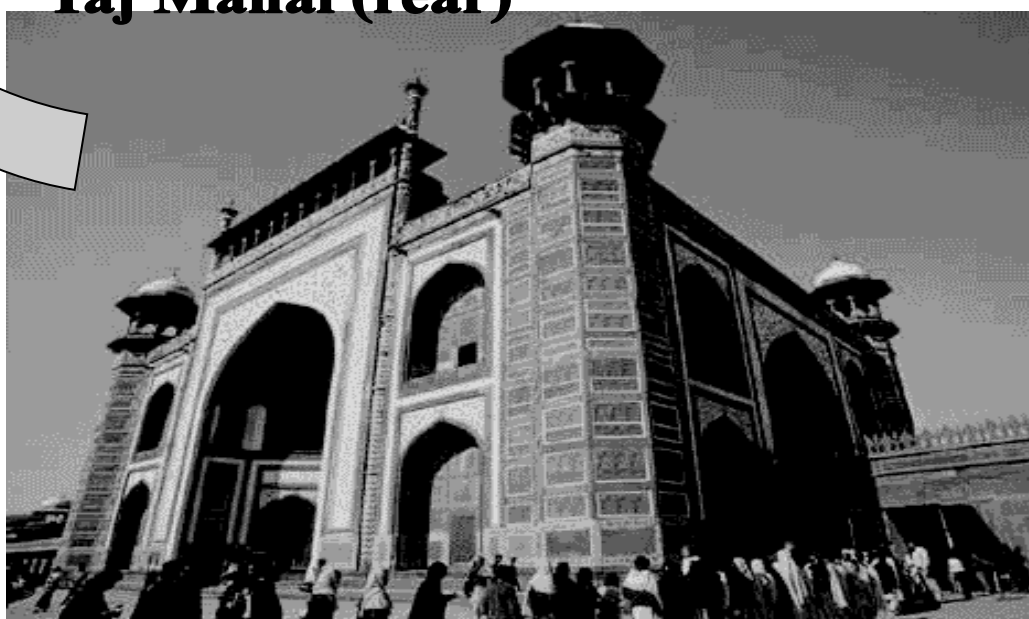
ARCHITECTURAL CHARACTER "Sober and Grotesque"

Distinguishing Features :

- A. The use of "Horseshoe Arch"
- B. Tunnel of stones & bricks
- C. Rich surface of decoration in carved stone, mosaic & painting



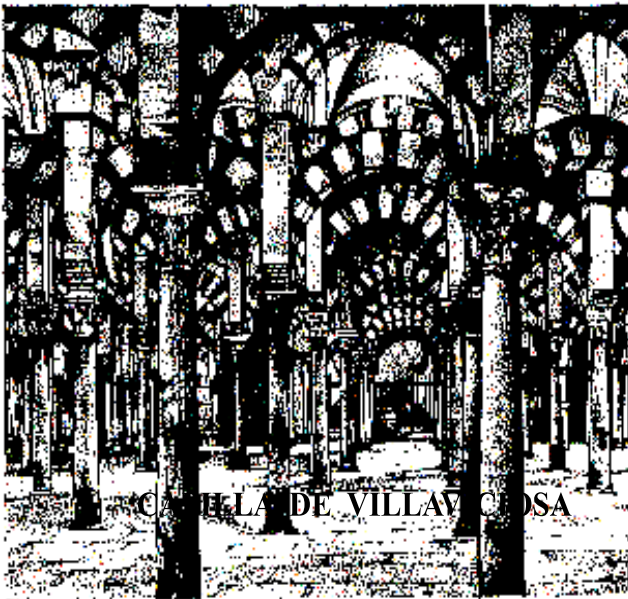
Taj Mahal (rear)



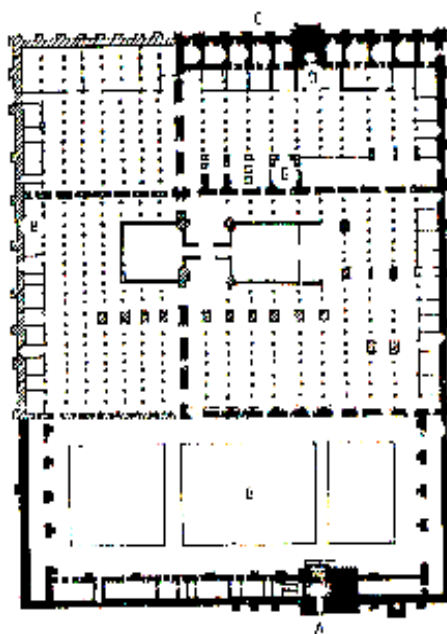
Terminologies

1. **CHATRI** – kiosk
2. **DAR** – mens apartment
3. **DIWAN** – palaces
4. **HAREM** – womens apartment
5. **MIHRAB** –a prayer niche facing Mecca in a Mosque.
6. **MIMBER** –a raised platform for ceremonial announcement
7. **MINARET** –a tall, slender tower connected to the Mosque. (prayer tower)
8. **MIMBAR** –the high pulpit or ambo
9. **MUHAJAR** –baluster
10. **SELAMUK** –men's quest quarter

HORSESHOE ARCH



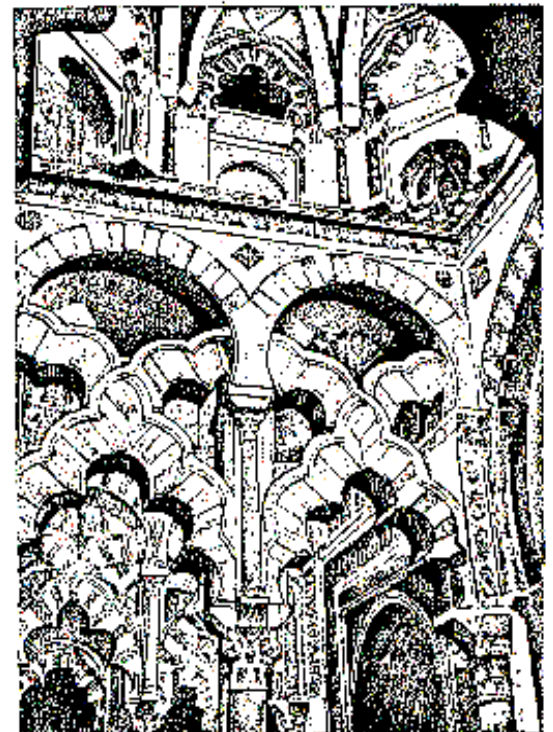
CEILING DOME



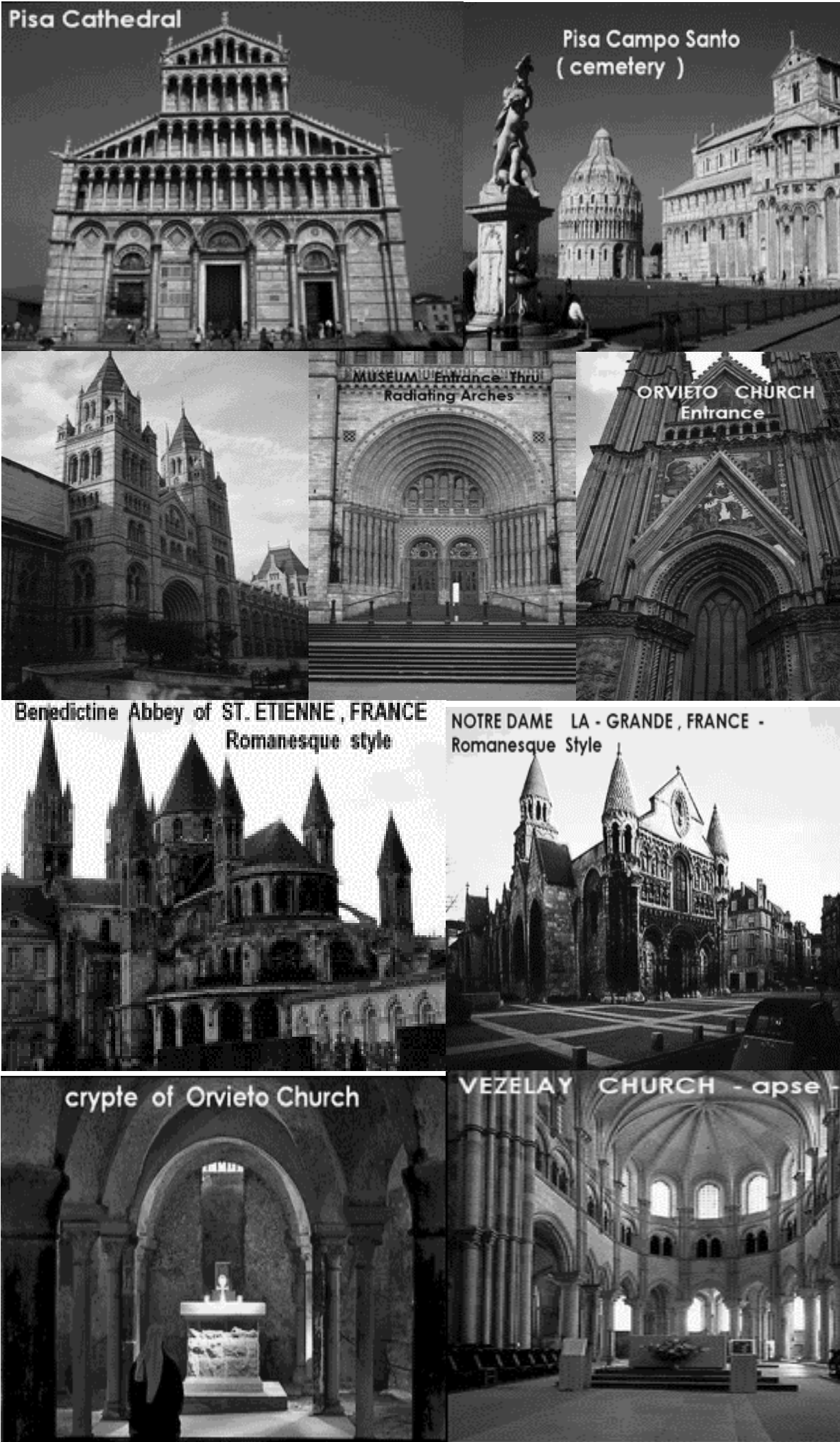
FLOOR PLAN

LEGEND:

- A ENTRANCE
- B ORANGE COURT
- C QIBLA
- D MIHRAB
- E CAPILLA DE VILLAVICIOSA



Romanesque Architecture



ROMANESQUE ARCHITECTURE

8th CENTURY TO 12th CENTURY

A. GEOGRAPHICAL INFLUENCE

Romanesque Architecture is the combination of Roman & Byzantine Architecture basically roman in style. They grew in the countries under the roman rule.

B. GEOLOGICAL INFLUENCE

The most common materials used for constructions were stone, brick marble or terra cotta, as well as ready-made columns & features from the old Roman bldgs.

C. CLIMACTIC INFLUENCE

Northern Portion: Dull climate contributed to the use of:

- a. Large windows to admit light
- b. High pitch roof to throw off rain & snow
- c. Small windows to minimize sun shading.
- d. Flat roof

D. RELIGIOUS INFLUENCE

Christianity resulted into erection of a church. Papacy had great power & influence.

E. SOCIAL & POLITICAL INFLUENCE

Establishment of "Feudal System", Landlord build "castle" to separate them & protect them from the peasants. These castle was made with man – made canals.

F. HISTORICAL INFLUENCE

The style emerging in Western Europe based on Roman & Byzantine elements last until the Advent of Gothic Architecture in the Mid – 12th Century.

ARCHITECTURAL CHARACTER

SOBER & DIGNIFIED - Opposite of Roman character

CHARACTERISTIC FEATURES

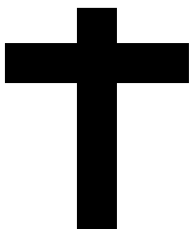
- Developed in Italy, France, Germany & England.
- Uses "Rib & Panel Vaulting"
- Two Types of Vaulting:
 - a. **Quadripartite** (four – part vaulting)
 - b. **Sexpartite** (six – part vaulting) both were supported by "tiers".
- Use of Massive, Architected wall structures, Round Arches & Powerful Vaults.
 - In churches they use Latin Cross Plan
 - Use of Corbelled Arches found underneath the eaves of a church.
 - Use of Rose window or Wheel window.

EXAMPLES OF BUILDINGS

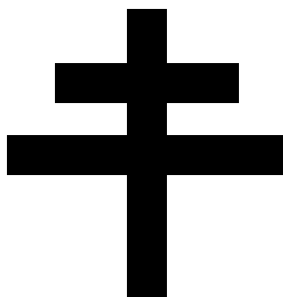
1. Churches – for every church there is a "Monastery" at the side.
 - a. Monastic church situated in a court open to public.
 - b. Cloister Court
 - c. Inner Court
 - d. Common Court

DIFFERENT SHAPES OF CROSS

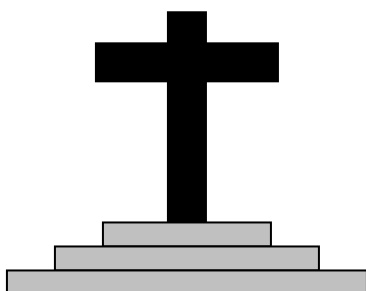
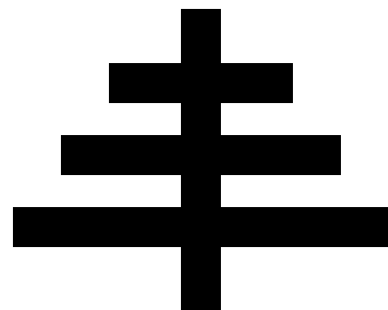
**Latin Cross or
Crux Emissa**



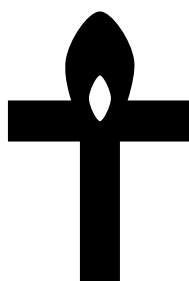
Cross of Loraine



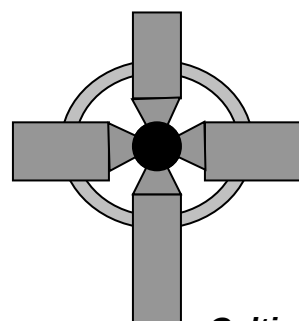
Papal Cross



Calvary Cross



Ankh Cross (Egyptian)



Celtic Cross

ARCHITECTURAL EXAMPLES

CENTRAL ITALY

1. PISA CATHEDRAL

- i. With Baptistery, Campanile & Campo Santo.
- ii. One of the Finest Romanesque Cathedral
- iii. Design by Architect Diotisalvi

2. CAMPANILLE, PISA

- iv. Circular tower
- v. Worlds famous "Leaning Tower"
- vi. 8 storeys of encircling arcades

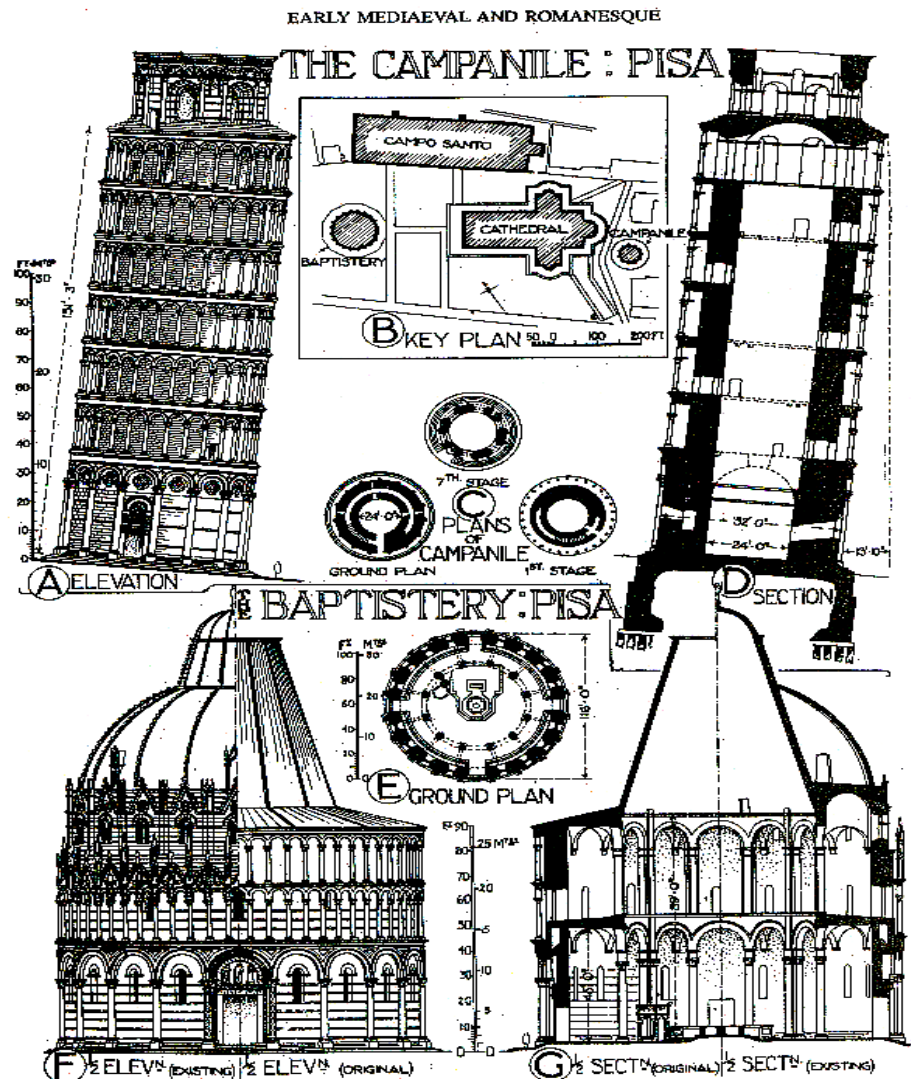
3. BAPTISTERY, PISA

- vii. Circular in plan

4. CAMPO SANTO, PISA

- viii. Cemetery

BAPTISTERY, PISA



FRENCH ROMANESQUE 9th to 12th CENTURY

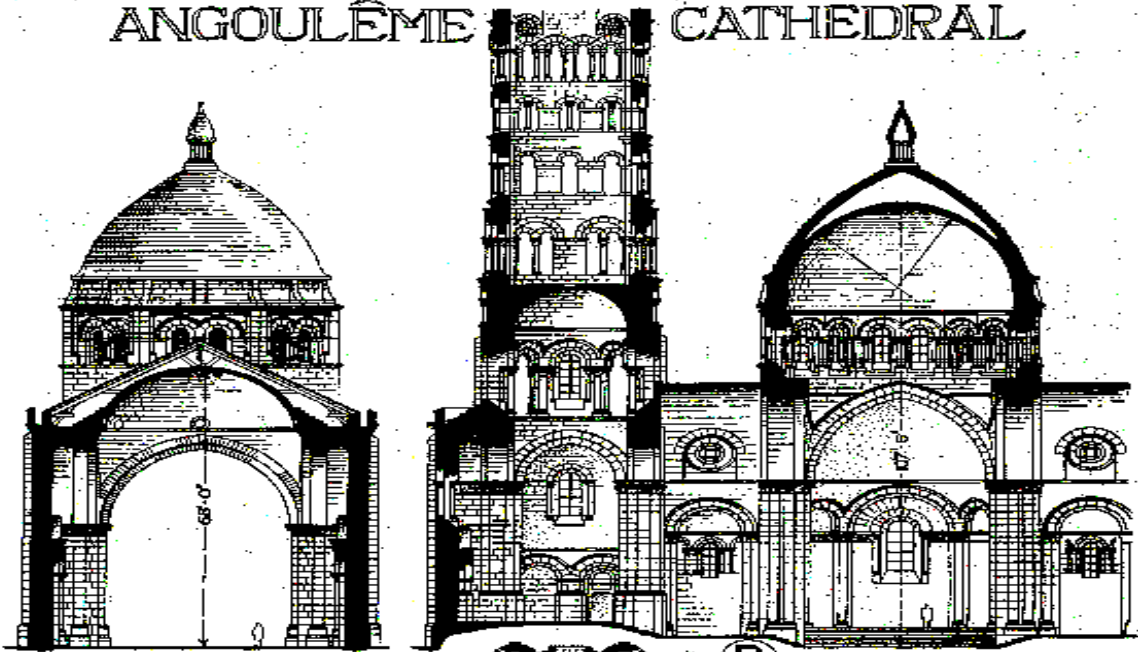
ARCHITECTURAL EXAMPLES

ECCLESIASTICAL ARCHITECTURE

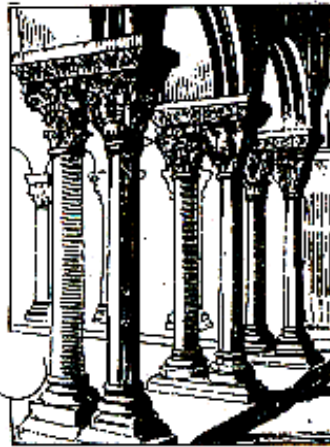
1. NOTRE DAME du PORT
 - Light stone vaults
 - Inlaid décor of different colors
2. ANGOULEME CATHEDRAL
3. S. MADELEINE, Vezelay
4. THE ABBEY CHURCH
5. NOTRE DAME LA GRANDE, France

EARLY MEDIAEVAL AND ROMANESQUE

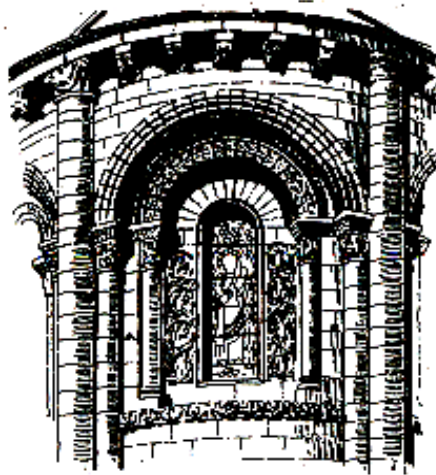
ANGOULÊME CATHEDRAL



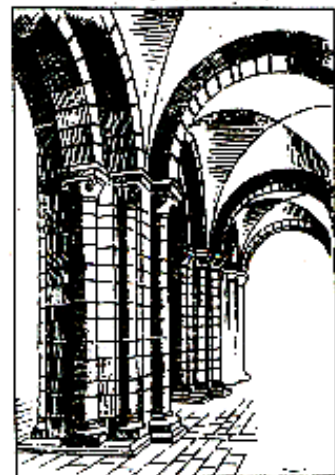
GRACEFULL CLOISTERS AND RADIATING ARCHES



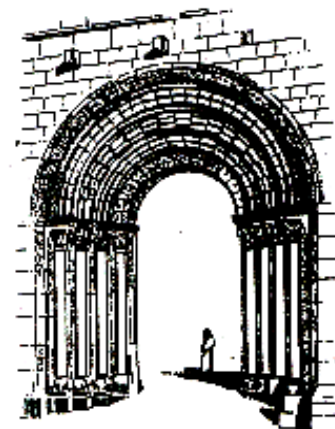
CLOISTERS: S. TROPHIME: ARLES



APSE: S. PIERRE: AULNAY



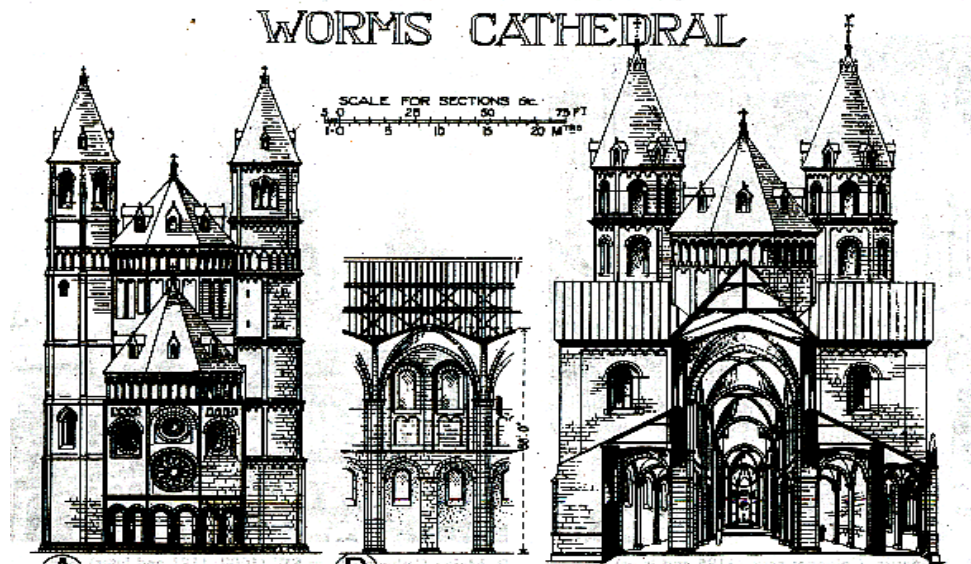
NAVE PIERS: LESSAY



GERMAN ROMANESQUE 10TH Century – 12th century

ARCHITECTURAL EXAMPLES

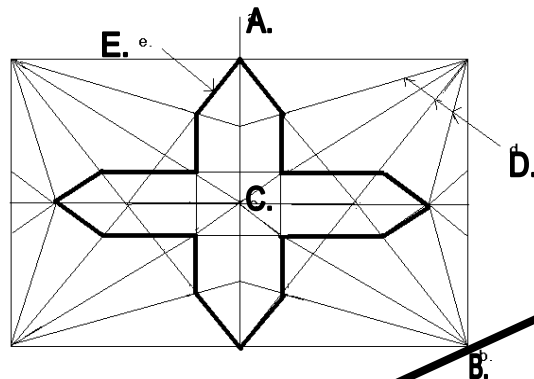
1. **AIX – LA – CHAPELLE CATHEDRAL**
 - Built by emperor Charlemagne as his “royal tomb – house “.
 - Prototype of similar churches in Germany.
 - Place of coronation of the Holy Roman Emperors.
2. **THE CHURCH OF THE APOSTLES, COLOGNE**
3. **WORMS CATHEDRAL**
 - Typical German Romanesque church
 - Remained the seat of Bishops, Archbishops & electors for 1,500 yrs.



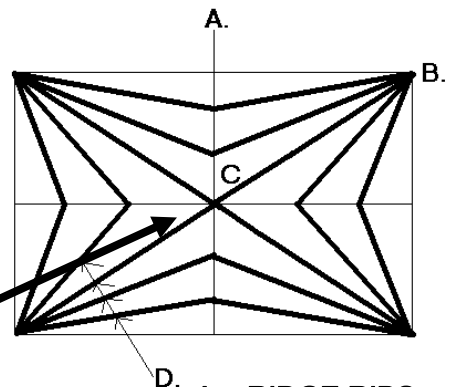
ROMANESQUE TERMS & ILLUSTRATIONS:

1. **DORMER WINDOW** – a window placed vertically in a sloping roof w/ a roof on its own.
2. **GROIN** – the curved arris formed by intersecting vaulting surfaces.
3. **VAULTS** - ceiling designs

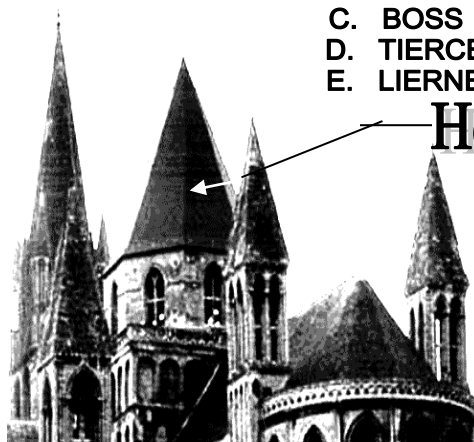
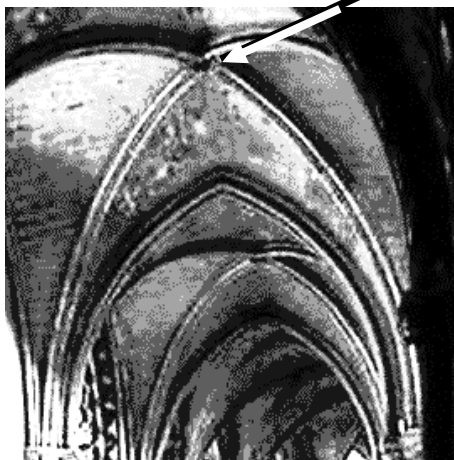
Tertiary Rib Vaults



Secondary Rib Vaults



- A. RIDGE RIBS
- B. SPRINGERS
- C. BOSS
- D. TIERCERON
- E. LIERNE



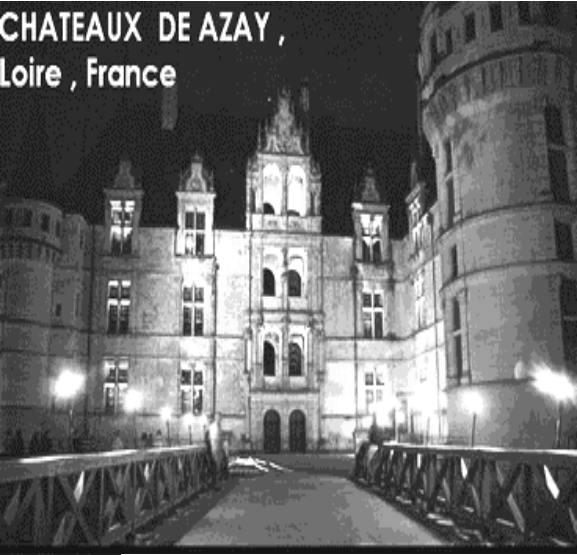
Helm roof

4. **HELM ROOF** – a roof in w/c 4 faces rests diagonally bet. the gables and converge at the roof.

English Medieval Architecture



CHATEAUX DE AZAY RIDEAU
FRANCE



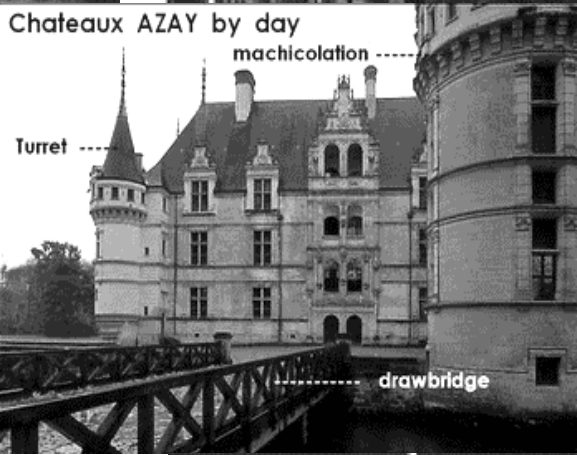
CHATEAUX DE AZAY ,
Loire , France



English Medieval example
CHATEAUX CHENONCEAU



CHATEAUX CHENONCEAU
Germany
English Medieval

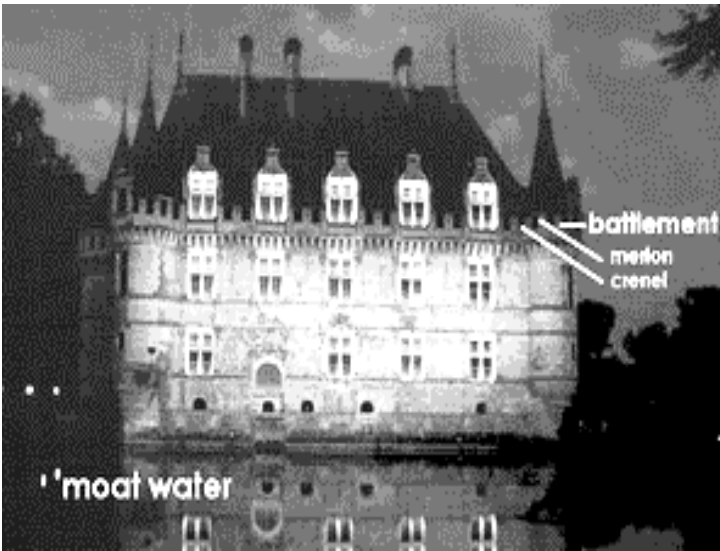


Chateaux AZAY by day

machicolation -----

Turret -----

drawbridge



battlement
merlon
crenel

'moat water



ENGLISH MEDIEVAL ARCHITECTURE

Started in between Century of Romanesque Arch to Gothic Architecture

ARCHITECTURAL CHARACTER :**DEVELOPMENT OF ENGLISH MEDIEVAL ARCHITECTURE PERIODS:**

1. **PRE – ROMAN**
2. **ROMAN**
3. **ANGLO – SAXON Pd.** – characterized by use of the timber for domestic bldg.
4. **NORMAN or TRANSITION Pd.** – characterized by bold and massive arch.
 - a. Distinct piers & flat buttresses.
5. **EARLY ENGLISH OR LANCET Pd.** – less massive, simple ornament.
 - a. Distinct Features:
 - b. Tall & Narrow “lancet openings”.
 - c. Projecting buttresses, pinnacles & steep – pitched roofs.
 - d. Group of Slender shafts at the interior.
6. **DECORATED or GEOMETRICAL & CURVELINEAR PD.** – more ornate & elaborated in decoration.

Distinct Features:

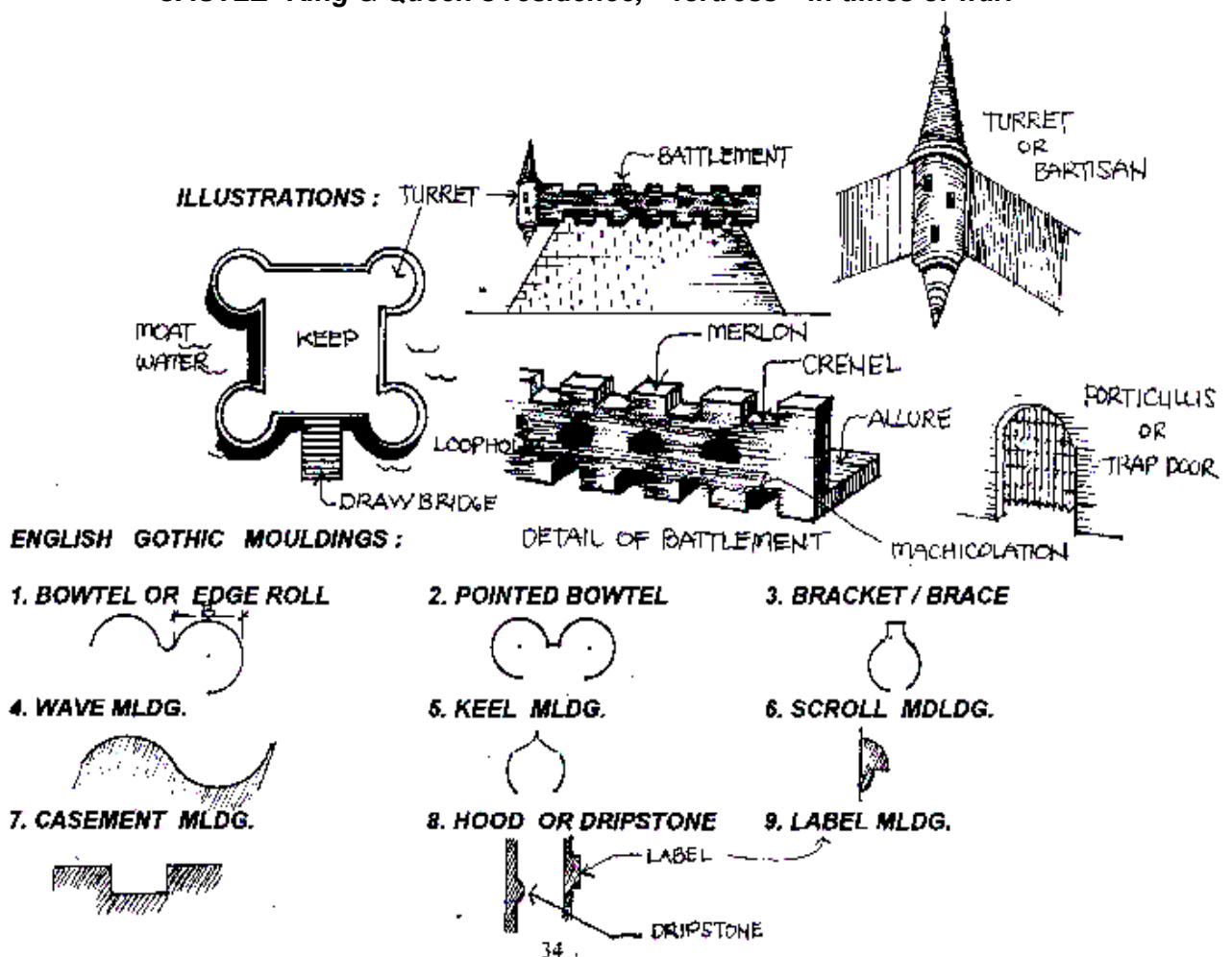
 - a. Geometrical & Flowing tracery sometimes crowned by ogee arch.
 - b. An enlarged clerestory at the expense of triforium.
7. **PERPENDICULAR PD.** – “Rectilinear”, “Late Pointed” or “Lancastrian” Pd.

Use of fan vaults and fan & pendant vaults.
8. **TUDOR PD.** – used in domestic bldgs., rather than ecclesiastical bldgs.

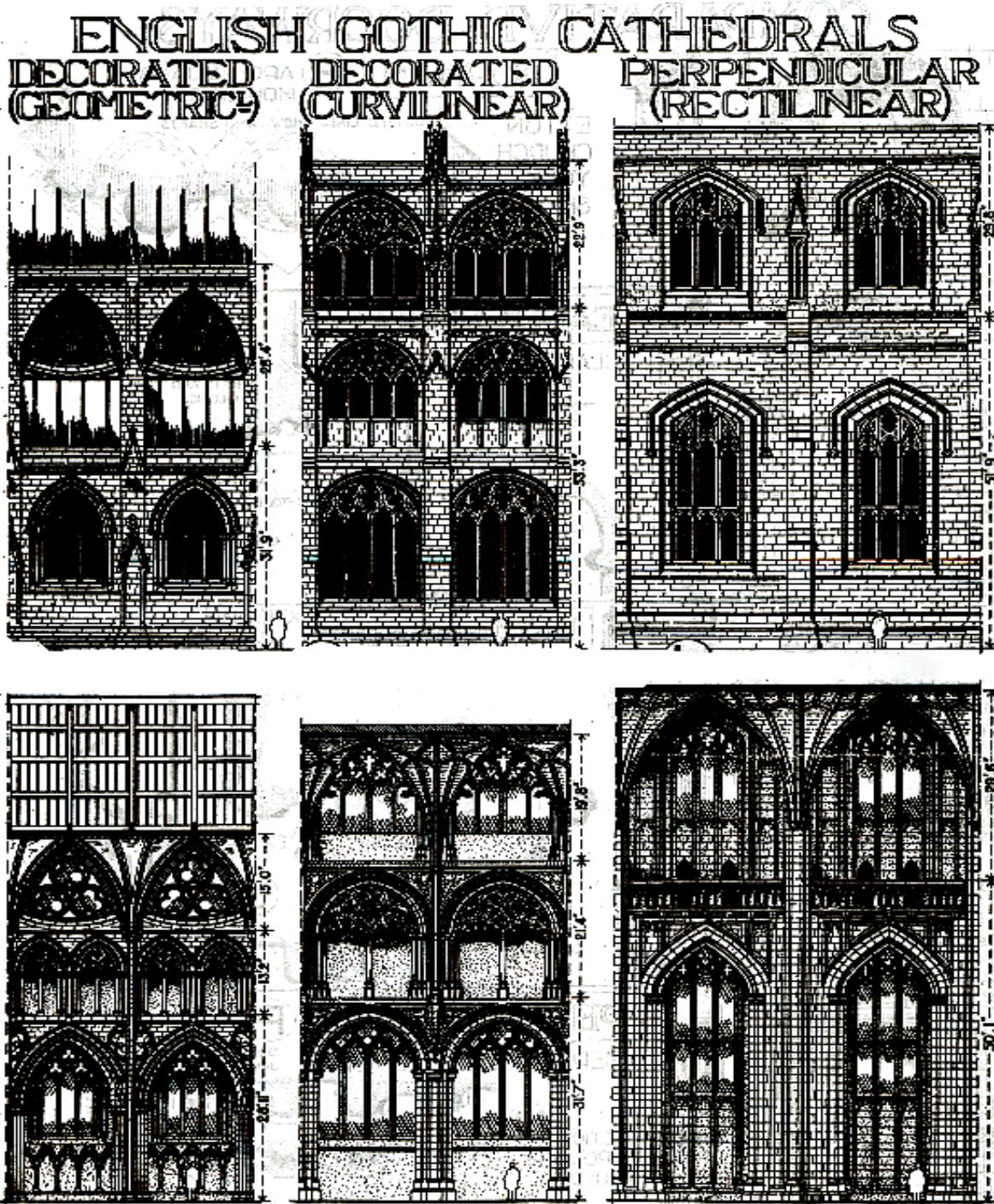
Similar to perpendicular style characteristic are square headed mullion windows ornamental fire places, gables w/ pinnacles, chimneys & finials.

EXAMPLE OF BUILDINGS

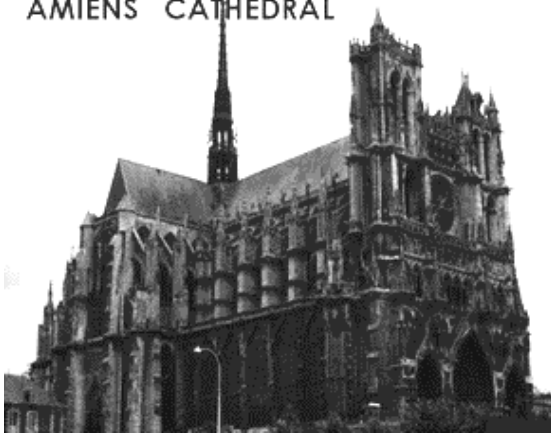
CASTLE- King & Queen’s residence, “fortress” in times of war.



CASTLE “Keep”, “Turret”, “Battlement”, “Draw bridge” “loopholes”



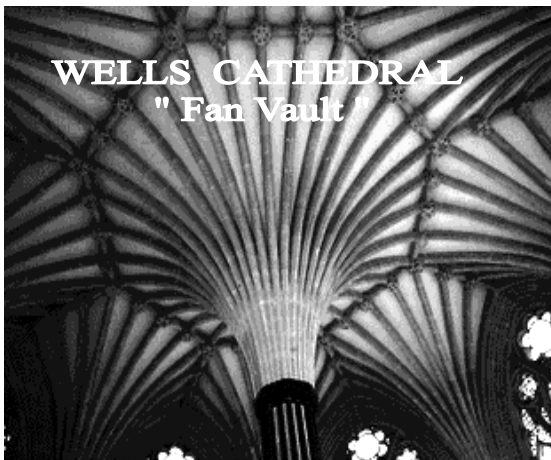
AMIENS CATHEDRAL



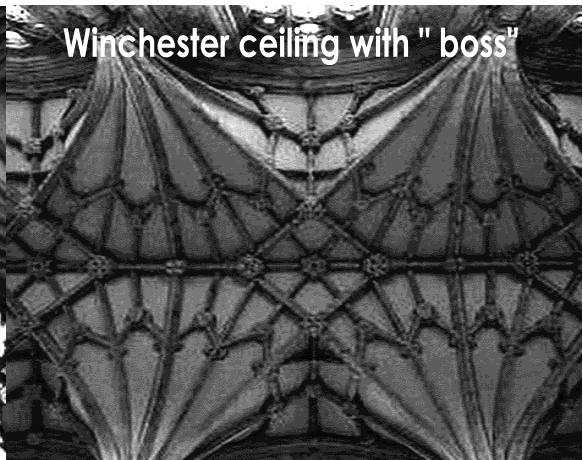
MILAN CATHEDRAL



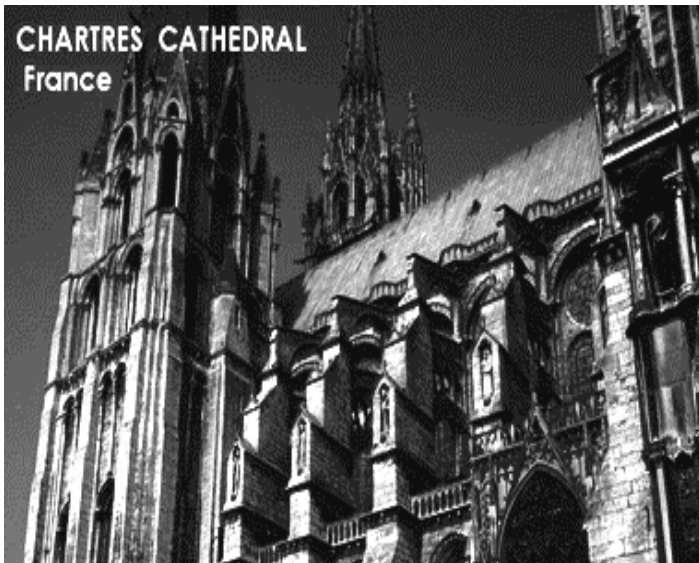
WELLS CATHEDRAL
" Fan Vault "



Winchester ceiling with " boss "



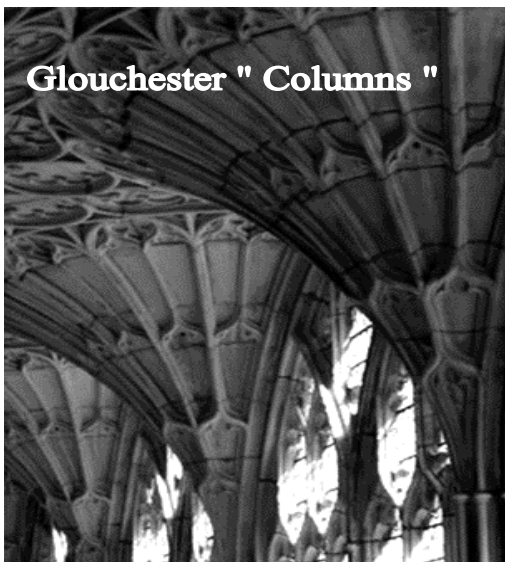
CHARTRES CATHEDRAL
France



Salisbury Cathedral



Gloucester " Columns "



Bourges " Sexpartite Vaulting "



Gothic Architecture

GOTHIC ARCHITECTURE

13th to 15th CENTURY

ARCHITECTURAL CHARACTER :

- A. **LOFTY AND ASPIRING QUALITY** (refers to Vertical)
- B. **STRUCTURAL HONESTY**
- C. **ECONOMY IN THE USE OF MATERIALS**

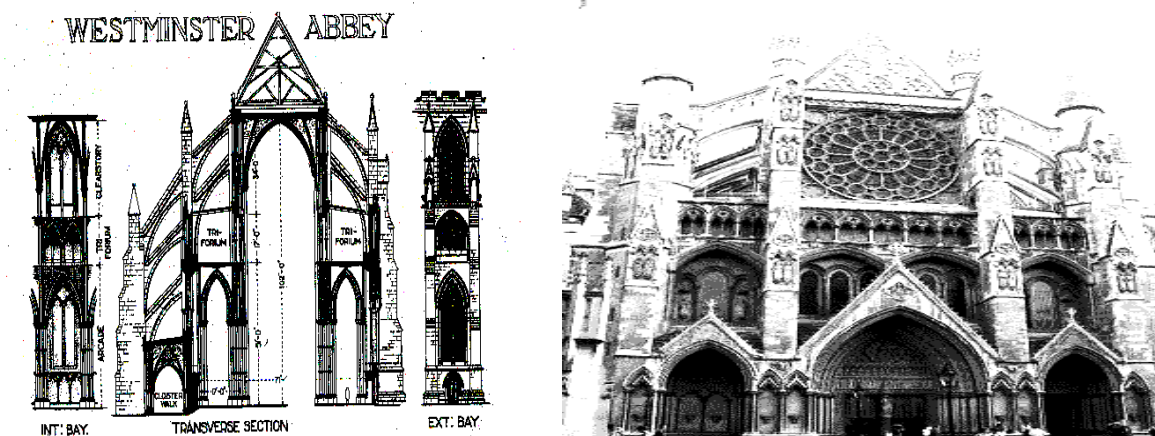
CHARACTERISTIC FEATURES :

Pointed Arch	Flying buttress
Rib & panel vaulting	Stained glass
Tracery windows	Spires & Pinnacles

EXAMPLE OF GOTHIC STRUCTURES (ECCLESIASTICAL)

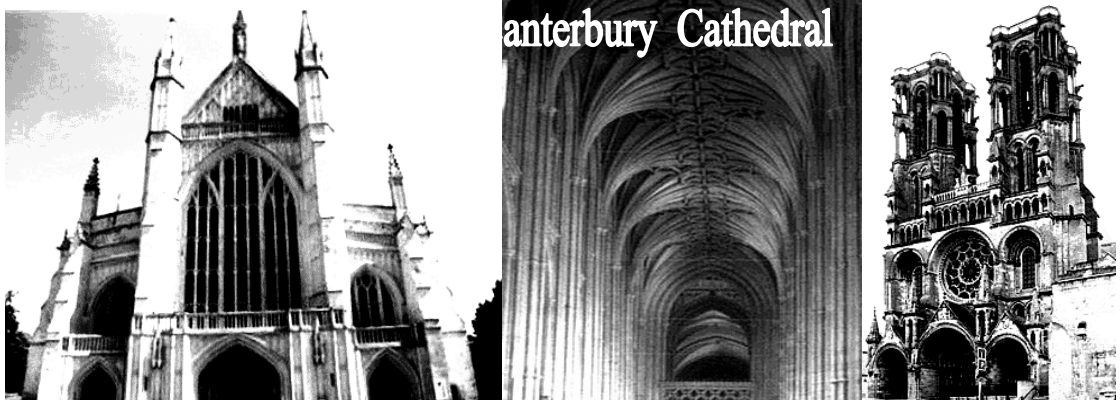
A. CATHEDRAL IN ENGLAND

1. **WESTMINSTER ABBEY** – one of the largest Benedictine monasteries. Comprises an Abbey church & a square cloister court. It was built by several master masons & master carpenters. Master Henry Yevelve , Hugh Herland & John James. It is geometric in style w/ pinnacles and tracery windows.



Those of the thirteenth century are sometimes of great richness.

2. **WINCHESTER CATHEDRAL** – has greatest total length (560 ft.) than any Medieval Cath'l.



LAON CATHEDRAL



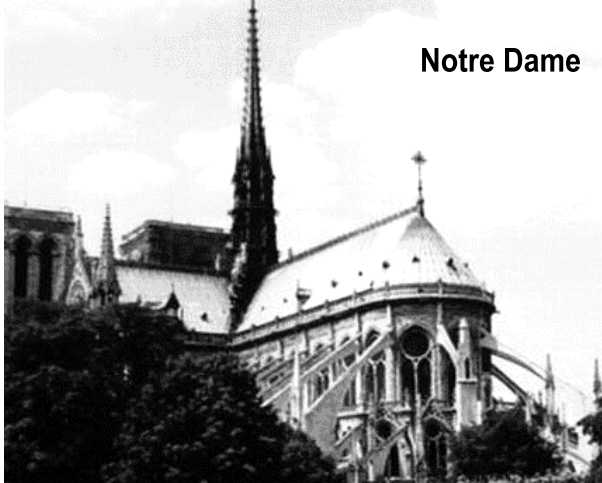
YORK " flying buttresses

REIMS Cathedral

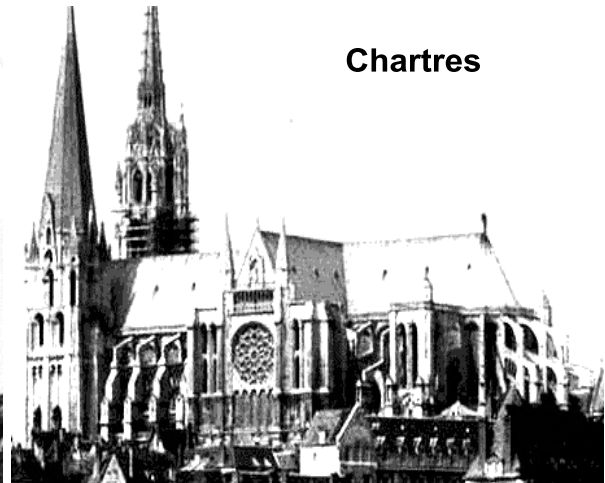
3. **YORK CATHEDRAL** – largest in area & width in any English Medieval Cathedral.
4. **SALISBURY CATHEDRAL** – it boast off central tower w/ the loftiest spire.
5. **CANTERBURY CATHEDRAL**
6. **LAON CATHEDRAL**
7. **THE TOWER OF LONDON** – built by Bishop Gundulf for William 1, concentric castle.
8. **HAMPTON COURT PALACE** – one of the most remarkable domestic bldg. in England
9. **GUILD HALL, LONDON** – most imp. hall erected by the Guilds in the middle ages.
10. **DURNHAM CATHEDRAL** – the earliest great cath. designed initially & entirely with a “rib – vaulting ” system.

B. EXAMPLES OF CATHEDRAL BUILDINGS IN FRANCE

1. **NOTRE DAME, PARIS** – one of the oldest **French Gothic** church. It was begun by Bishop Maurice de Sully.

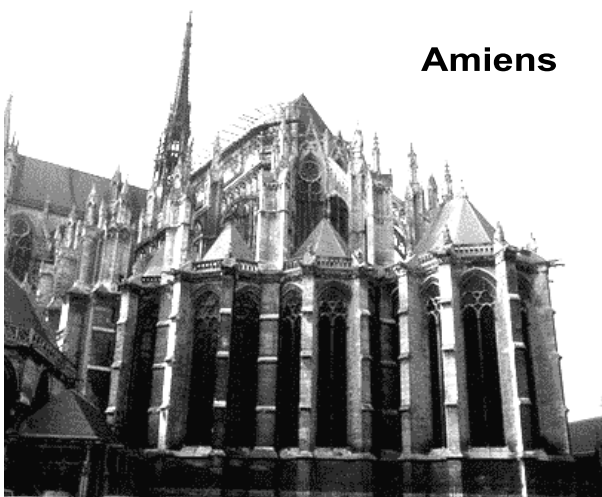


Notre Dame

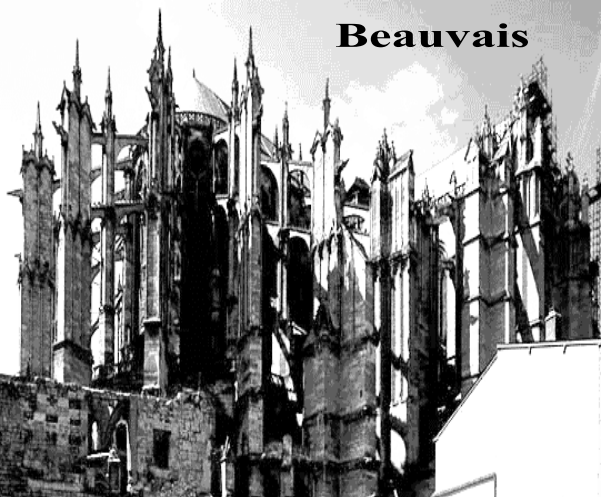


Chartres

2. **CHARTRES CATHEDRAL** – famous for its 160 stained glass windows.
3. **RHEIMS CATHEDRAL** – coronation church of France, the west façade is famous for its 500 statues
4. **AMIENS CATHEDRAL** – counterpart of Salisbury of England, famous for its carved woodwork in the choir stalls. Designed by Robert de Luzarches.

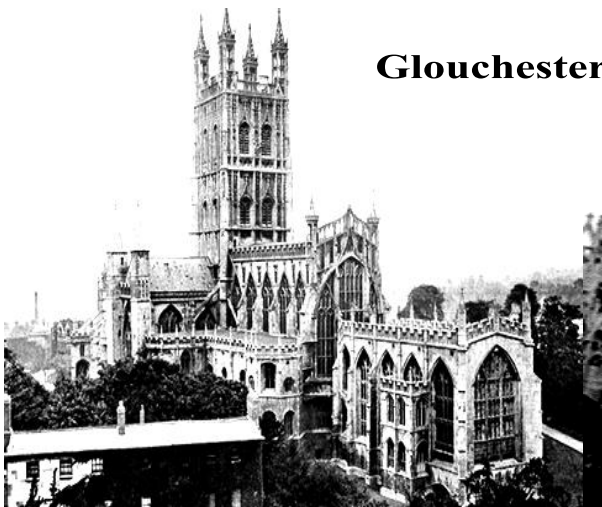


Amiens



Beauvais

5. **BEAUVAIS CATHEDRAL** – considered w/ the loftiest vault in Europe at 157 ft. & 6 inches



Gloucester



Milan

6. **GLOUCESTER CATHEDRAL**

MILAN CATHEDRAL – by HENRICH VON GMUNDEN

FORTIFIED TOWNS:

1. **CARACASSONE** – surrounded by moat water.
2. **AVIGNON** – has a palace w/c was the headquarters of the Popes.

CASTLES:

1. CHATEU GAILLARD, LES ANDELS
2. CHATEU de PIERREFONDS
3. CHATEU de AMBROISE

HOTELS DE VILLE – Town halls or Municipal Halls

1. **ARRAS**
2. **BOURGES**
3. **DREUX**

PALAIS DE JUSTICE – function same as the Roman Basilica

- ### **1. PALAIS DE JUSTICE , ROVEN**

HOSPITAL – also known as “**MAISONS – DIEU**”, usually to monasteries.

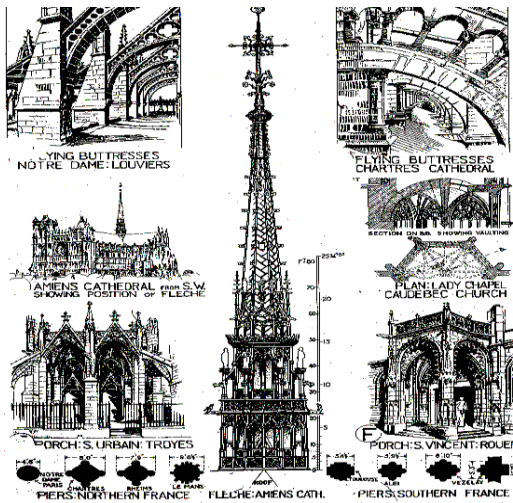
- ## 1. HOTEL DIEU, BEAUNE

HOUSES – first known as “ castle “, earlier called “ chateaux “, later called “ private house “, townhouse & now called “ hotels”.

C. EXAMPLES OF GERMAN CATHEDRALS

1. **COLOGNE CATHEDRAL** – largest Gothic church of Northern Europe covering Approximately an area of 91,000 sq. m
2. **S. ELIZABETH MARBURGE** – characteristic example of a “ Hall Church “.
3. **LIMBURG CATHEDRAL**

D. EXAMPLE OF CATHEDRAL IN ITALY



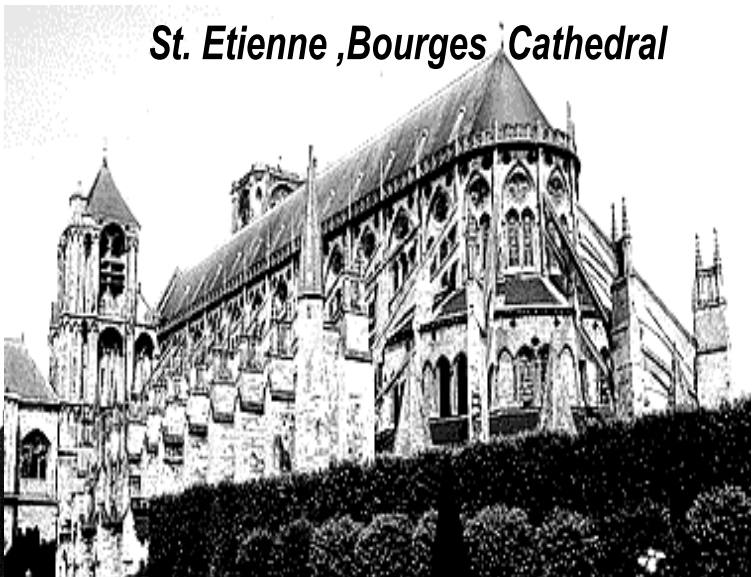
E. EXAMPLE OF GOTHIC CATHEDRAL IN SPAIN

1. **SEVILLE CATHEDRAL, SPAIN** – *largest medieval cathl. in Europe, 2nd Largest cathl. in the world.*
2. **SANTIAGO DE COMPOSTELA CATHEDRAL, SPAIN** – *one of the most Remarkable medieval bldg. in Spain, Great Pilgrimage center.*
3. **BARCELONA CATHEDRAL**

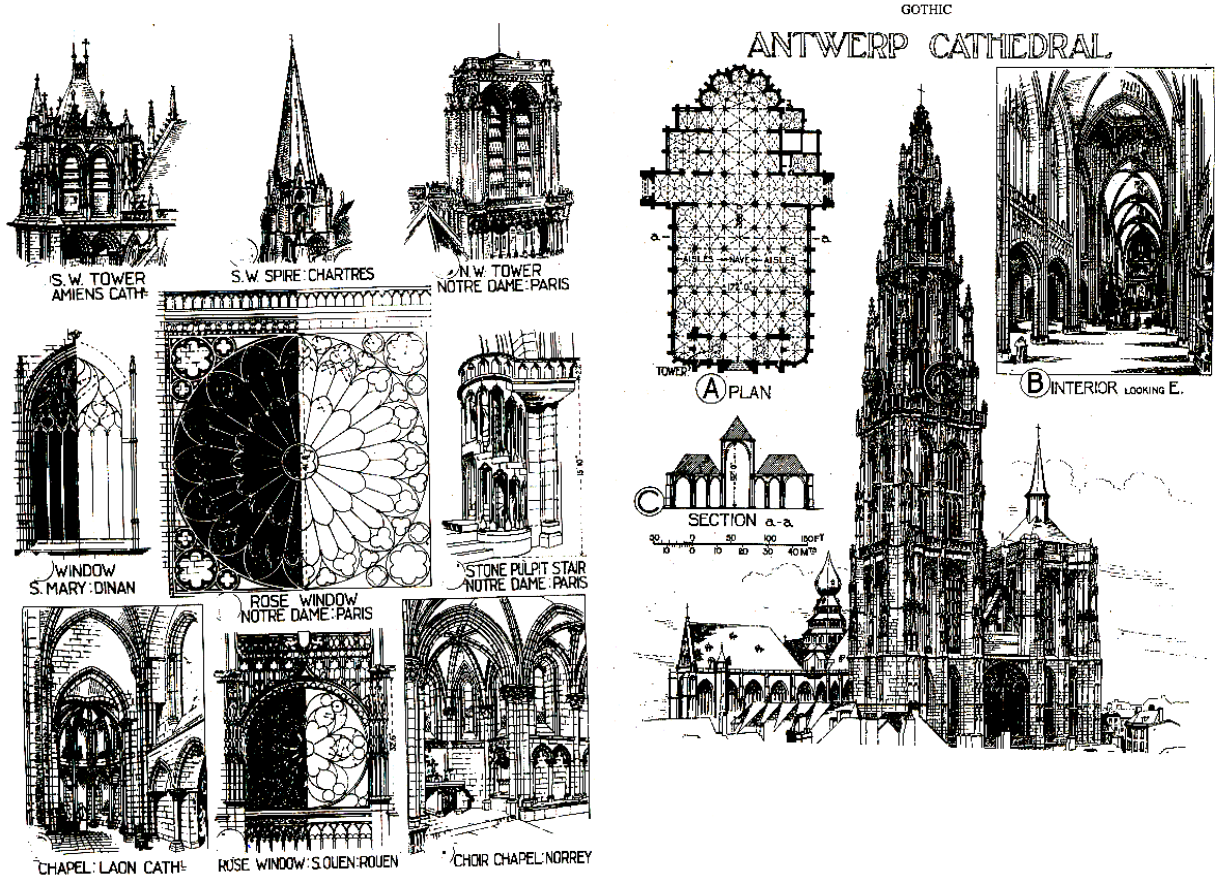
Ely Cathedral



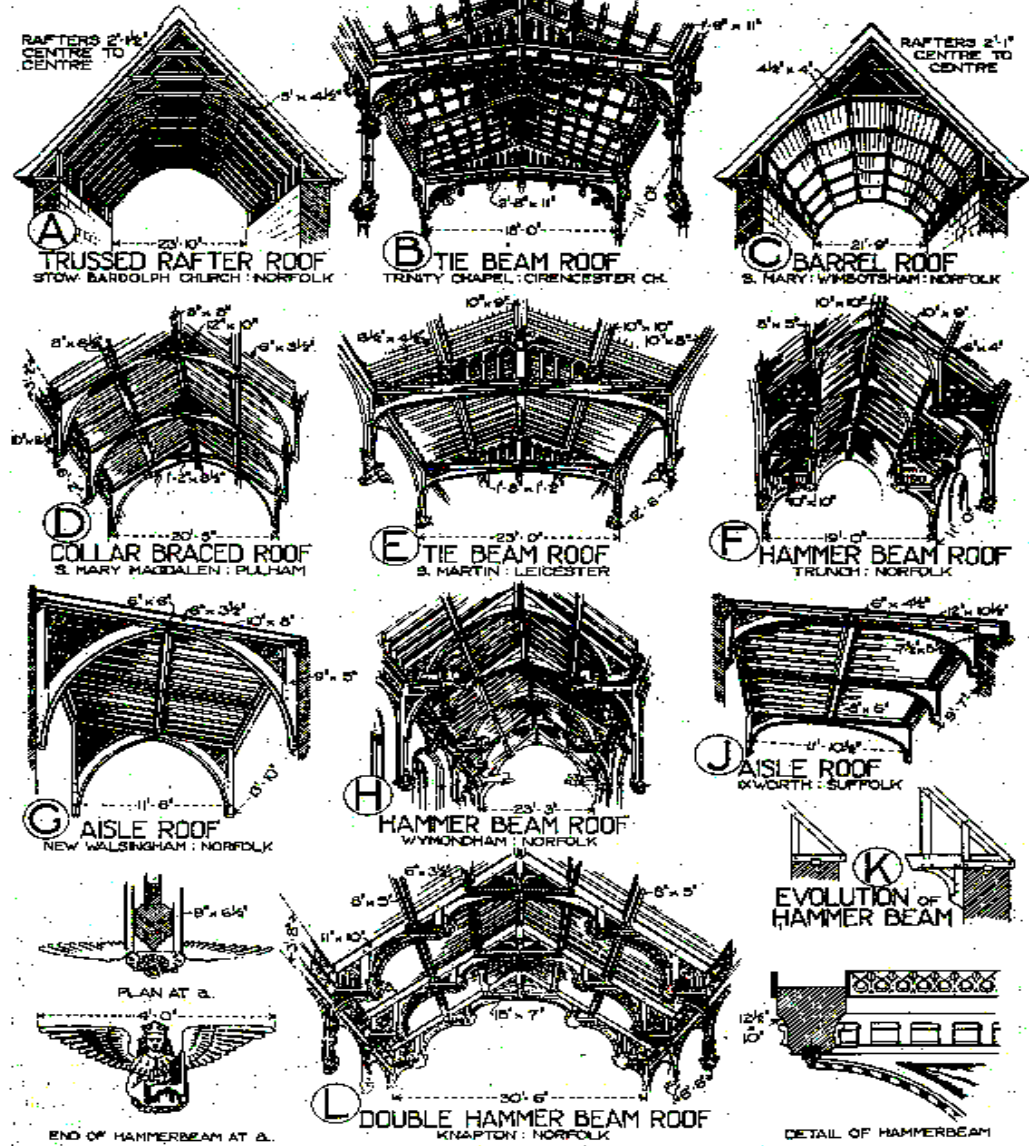
St. Etienne ,Bourges Cathedral



BELGIAN / NETHERLAND GOTHIC CATHEDRAL EXAMPLES



TYPES OF TIMBER CHURCH ROOFS



Gothic Terminologies :

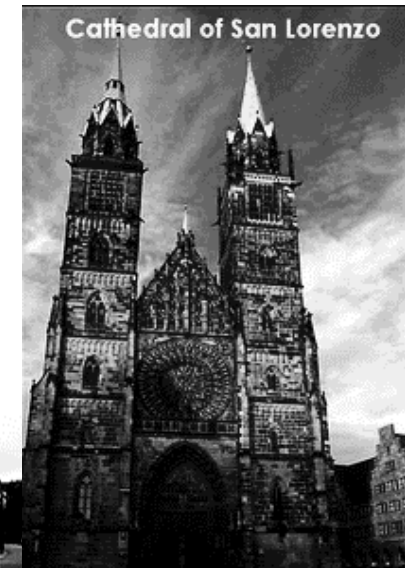
1. **CIMBORIO** – the Spanish term for lantern admitting light over a crossing, central lantern.
2. **CROCKETS** – in Gothic Arch, an upward oriented ornament, often vegetal in form, regularly spaced along sloping edges of spires, pinnacles & gables.
3. **DONJON / KEEP** – a stronghold of a medieval castle; usually in the form of a massive tower.
4. **GARGOYLE** – a water spout projecting from the roof gutter of a bldg., often carved grotesquely.
5. **MACHICOLATION** – an overhanging defensive structure at the top of a medieval fortification, w/ floor openings thru boiling oil, missile, etc. w/c could be dropped on attackers.
6. **PORTCULLIS** – a gate of iron or iron enforced wooden bars made to slide up & down in vertical grooves in the jambs of a doorway, use for defense in castle gateways.
7. **RETABLO / REREDOS** – a wall or screen usually behind an altar, an ornamental screen or wall at the back of the altar.
8. **TRACERY** – the ornamental intersecting work in the upper part of a window, screen or panel, use decoratively in blank arches and vaults.
9. **FINIAL** – a formal ornament at the top of a canopy, gable & pinnacle.
10. **EMBRASSURES** – the crenels or intervals bet. merlons of a battlement.
11. **MERLON** – in an embattled parapet, one of the solid alternates between the embrasures.
12. **BARTIZAN** – a small turret projecting from the angle on top of a tower or parapet.
13. **BATTEMENT** – a parapet w/ alternating indentations (embrasures and raised portions (merlons) also called “crenel”.
14. **BAILEY** – an open space or a court of a stone – built castle.
15. **MOTTE** – a steep mound, feature of 11 th & 12 th Century castles.
16. **NAILHEAD** – an early English Arch'l. enrichment consisting of small pyramids repeated as a band.
17. **Oriel** – in medieval English Arch. , a bay window, corbelled out from the wall of an upper story.
18. **BARTIZAN** outer defense work of a castle or town, frequently a watch tower at the gate, an outwork defending the entrance to a castle.
19. **BALUSTRARIA** – in medieval military Arch., the crossed-shaped opening in the battlements & elsewhere for the use of the crossbow.
20. **SPIRE** – the tapering termination of a tower.
21. **STEEPLE** – a tower crowned by a spire.
22. **EPI** – the spire shaped termination of a projecting point or angle of a roof.
23. **FLAMBOUYANT STYLE** – the last phase of French Gothic Arch, characterized by Flame like & free flowing tracery.
24. **PEEL** – in Northern England & Scotland in the middle ages, a small emergency defense structure, generally a low fortified tower.
25. **CLOISTERS** – a secluded place of covered passages around an open **space**, connecting the monastic church w/ the domestic part of the monastery.
26. **OGYVALE** - a term used for French Gothic Architecture.
27. **OFFSET** – the part of a wall exposed horizontally, often sloping.



ST. PETER BASILICA CATHEDRAL



Chateau de Versailles , France



Pilgrimage Church ,
Vierzehnheiligen
Germany

Cathedral of San Lorenzo

Dome of St. Paul Cathedral

ST. PETER BASILICA INTERIOR



Renaissance Architecture

RENAISSANCE ARCHITECTURE

15th TO 18th CENTURY

RENAISSANCE known as “Rebirth “ or “Revival “ of the Roman Classical Arts.

SALIENT CHARACTERISTIC OF THE STYLE

1. Reintroduction of the (5) Classical Roman Orders of Architecture.

Standardized by Ren. Archt,s; Palladio, Vignola, Scamozzi & Chambers.

- a. Doric
- b. Ionic
- c. Corinthian
- d. Composite
- e. Tuscan

2. Use of the rusticated masonry.

3. Parapets are usually with balusters.

4. Dome on a drum.

ARCHITECTURAL CHARACTER

DIGNITY & FORMALITY shown through “symmetry “.

PERIODS OF DEVELOPMENT OF RENAISSANCE ARCHITECTURE IN EUROPE

A. ITALIAN RENAISSANCE

1. Early period – Transition Period
2. High Ren. or Proto – Baroque Period
3. Baroque Period
4. Neo – Classical or Antiquarian Phase

B. FRENCH RENAISSANCE

1. Early Period
2. Classical period
3. Late period

C. GERMAN RENAISSANCE

1. Early Renaissance
2. Proto – Baroque Pd.
3. Baroque Pd.
4. Rococo Pd.
5. Antiquarian Pd.

D. ENGLISH RENAISSANCE

1. Early Period
 - a.) Elizabethan Architecture
 - b.) Jacobean Architecture
2. Late Period
 - a.) Stuart Architecture
 1. Inigo Jones Phase
 2. Sir Christopher Wren's
 - b.) Georgian Architecture
 1. Anglo – Palladian Phase

ITALIAN RENAISSANCE

15 TH CENTURY

RENAISSANCE ARCHITECTURE – birth place in Florence , Italy in the 15th Century.

ARCHITECTURAL EXAMPLES

1) CHURCHES

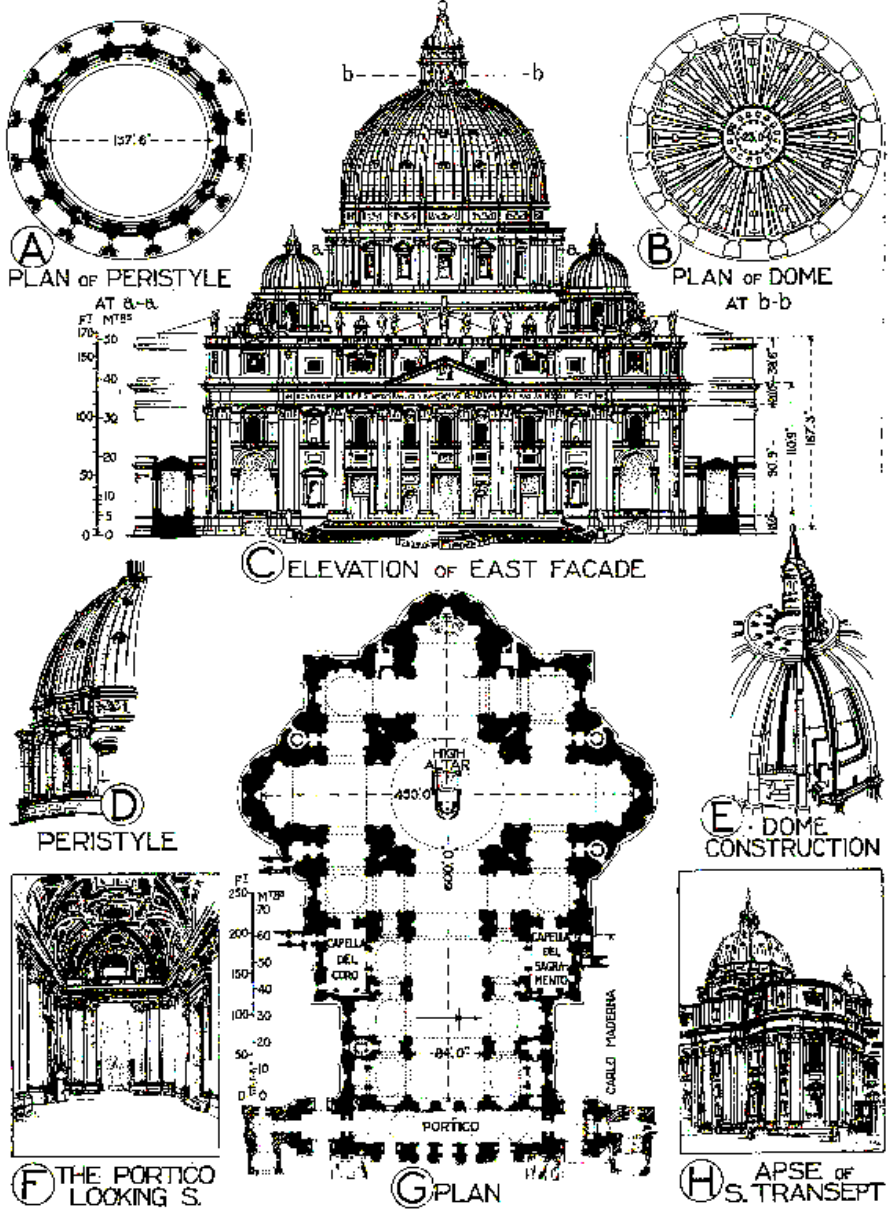
- a. ST. PETER BASILICA –most important bldg. in Italian Renaissance.
Largest church in the World.

FAMOUS ARCHITECTS & BUILDERS OF ST. PETER BASILICA

1. DONATO BRAMANTE – designed the original plan (Greek Cross).
- first Roman Renaissance Arch't.
2. RAPHAEL (Rafaello Sanzio) – proposed a Latin Cross Plan
3. MICHAELANGELO BUONARROTTI –presented a Greek Cross Plan &
strengthened the piers of the dome.
- redesigned the surroundings.
- commenced the construction of the Greek Dome.
4. CARLO MADERNA- lengthened the nave to form a Latin Cross & added a gigantic façade.
5. GIOVANNI LORENZO BERNINI – design the entrance Piazza w/284 Ionic columns.
6. GIACOMO BARROZI da VIGNOLA – added only side domes / cupolas.
7. ANTONIO da SANGALLO – younger brother of GIULIANO, altered the plan of
PERUZZI. - extended the vestibule in the West Façade.
8. GIULIANO da SANGALLO
9. BALDASSARE PERUZZI
10. FRA GIOCONDO
11. GIACOMO della PORTA
12. DOMENICO FONTANA



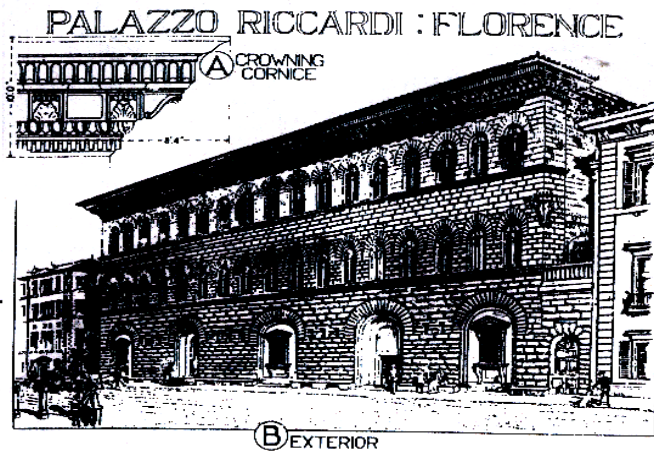
S. PETER : ROME



- b. MEDICI. CHAPEL, Florence by: MichaelAngelo Buonarrotti.
- c. S. LORENZO, Florence by: Filippo Brunelleschi – famous arch't. in Florence
- d. S. MARIA della CANCELLERIA, Rome by: Donato Bramante – famous arch't. in Rome
- e. BASILICA VICENZA, Venice by: Andrea Palladio – famous arch't. of Venice.
- 2) PALACES – also termed “PALAIS”.
- a. VATICAN PALACE, Rome by: Donato Bramante – largest palace in Italy.
- b. PALAZZO RICARDI, Florence by: Michelozzo Michelozzi.
- c. PALAZZO FARNESE, Rome by: Sangallo – grandest palace of the period
- top storey added by: Michaelangelo Buonarrotti
- d. PALAZZO PITTI, Florence by: Filippo Brunelleschi – 2nd largest palace in Italy.

TERMINOLOGIES:

1. **RUSTICATION** – a method of forming a stone work w/ roughened surface & recessed joints.
2. **CORTILE** – Italian name for internal court surrounded by an arcade.
3. **ASTYLAR** – a treatment of façade without column.
4. **PIANO NOBILE** – several steps going up & 3 steps going down before the principal flooring of an Italian palace.
5. **PIETRA SERENA** – a blue grey stone of fine quality.
6. **PIETA FORTE** – a brown stone more suitable for exterior work.
7. **CANTORIA** – a singer's gallery or "choir".



FRENCH RENAISSANCE

FRENCH RENAISSANCE was delayed for 75 yrs.

ARCHITECTURAL EXAMPLES :

- A. CHATEAU OR CHATEAUX** – castle, residence for noble families.
- e. g. Chateau de Blois – for Louis XII by Francis I & Francois Mansart.
 Chateau de Bury
 Chateau de Chambord by Domenico de Cortona



B. PALAIS - palace

- e. g. Palais de Fontainebleau by Le Breton
 Palais de Versailles
 Palais de Louvre

C. CHURCH

- e. g. Church of the Val de Grace, Paris
 Church of the Sorbonne, Paris by Pierre Lescot, Da Oers

D. OTHER BLDG. STRUCTURES

- e. g. Dome of the Invalides, Paris
 Pantheon, Paris
 Opera House, Paris by Charles Garnier

TERMINOLOGIES

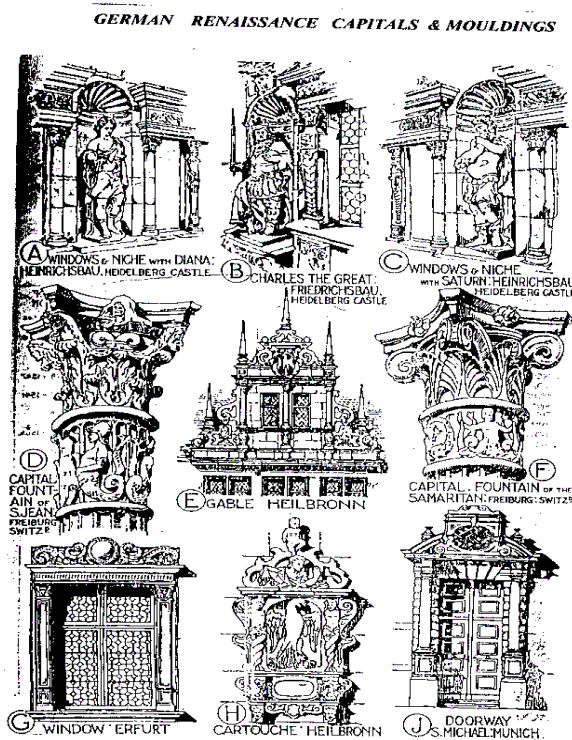
1. **QUIONS** – hard stone or brick used w/ similar ones to reinforce an external corner or edge of a wall.
2. **SCROLL** – contains spiral wind band or "volutes".
3. **WREATH** – or Swag or Festoon, twisted band, garland or chaplet representing flowers, fruits, leaves for decoration.
4. **CHAINES** – vertical stripe of a rusticated masonry.
5. **BOSS** – a lump or knob, projected ornament at the intersection of the ribs of a ceiling.

GERMAN RENAISSANCE

GERMAN RENAISSANCE was delayed for 125 yrs. in Renaissance
ARCHITECTURAL EXAMPLES:

1. HEIDELBERG CASTLE – well exemplifies diff. Periods of the Renaissance.
2. THE RATHHAUS, Heilbronn
3. LOGGIA WALDSTEIN PALACE, Prague by Antonio & Petro Spezza.
4. TROJA PALACE, Prague
5. WALHALLA TEMPLE, Kansas Walhalla –resemblance to Greek Parthenon.
6. OTTOBEUREN CHURCH
7. PILGRIMAGE CHURCH, Steinhausen
8. LINDERHOF GUILD HOUSE, built for Ludwig III of Bavaria.
9. THEATINE CHURCH, Munich
10. KARLSKIRCHE, Vienna

Interior of Pilgrimage church , Steinhausen



BELGIUM AND DUTCH RENAISSANCE

16th Century

NETHERLAND is a name which formerly embraced the whole of the "Nederland" (Holland) & Belgium. Influenced by the Italian, French & German renaissance.

ARCHITECTURAL EXAMPLES :

1. TOWN HALL, Antwerp – important prototype of Belgian Early Renaissance Architecture.
2. GUILDHOUSE, Brussels – company house for farmers & trade.
3. S. MICHAEL, Louvain – good example of Baroque style.
4. TOWHALL, Desden – most successful renaissance of Holland treatment.
5. TOWNHALL, Leyden.

SPANISH RENAISSANCE

16TH TO 18TH CENTURY

SPANISH RENAISSANCE was influence by two civilizations, Moslem & the Christians.

ARCHITECTURAL EXAMPLES :

1. THE CASA de las CONCHAS, Salamanca.
2. GRANADA CATHL – one of the grandest church in Southern Spain by: Die de Sili
3. THE ALCAZAR, Toledo
4. THE UNIVERSITY of Salamanca
5. THE ESCOLIAR, Madrid
6. BARCELONA, CATHEDRAL
7. BURGOS, CATHEDRAL

ENGLISH RENAISSANCE

16TH TO 19TH CENTURY

ENGLAND was the last country to fall under the influence of the Movement.

ARCHITECTURAL EXAMPLES :

1. Under the Early Period (Elizabethan Architecture)

CHIEF STRUCTURE

a. ELIZABETHAN MANSION FEATURES:

- 1.) Grand Staircase – adjacent to the hall, approach to the rooms above.
- 2.) Great Hall or State – central position, connecting all the parts of the mansion
- 3.) Long Gallery – most striking feature of the mansion.
- 4.) Withdrawing Room – or solar room, similar to living room.

2. Under the Late Period (Stuart Architecture)

WORKS OF INIGO JONES

a. BANQUETING HOUSE, WHITEHALL, LONDON

b. QUEEN'S HOUSE, GREENWICH - influenced by Palladian Architecture.

WORKS OF SIR CHRISTOPHER WREN

a. ST. PAUL'S CATHEDRAL, LONDON – Wren's Masterpiece, Greatest English Renaissance bldg.

b. HAMPTON COURT PALACE c. GREENWICH HOSPITAL



S T . P A U L C A T H E D R A L

AUSTRALIAN ARCHITECTURE

17th Century

Smallest continent, known as the "country down under". With its Capital Canberra

CITIES :

- | | |
|---|-------------------------------------|
| 1. Northern Australia w/ Capital – Darwin | 4. Victoria w/ Capital - Melbourne |
| 2. Southern Australia w/ Capital – Adelaide | 5. Queensland w/ Capital - Brisbane |
| 3. New South Wales w/ Capital – Sydney | 6. Western |

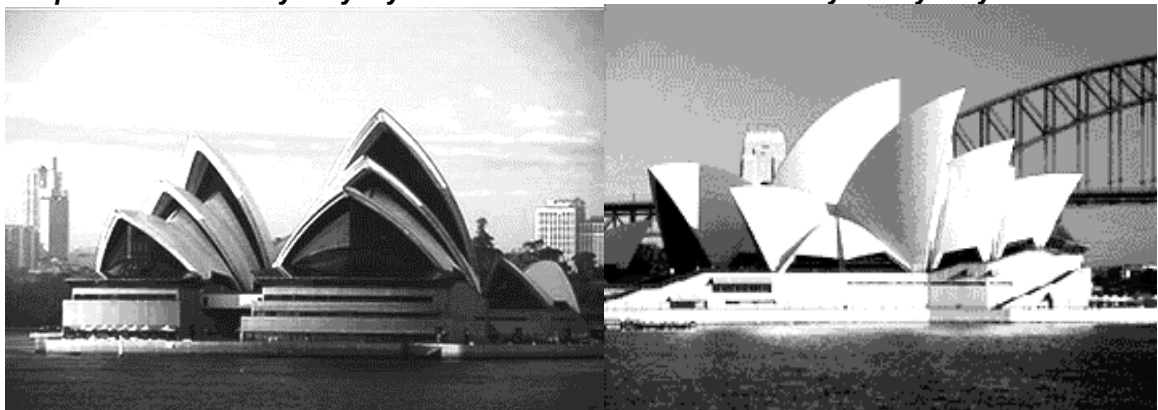
Natural Barriers:

- | | | |
|------------------------|----------------|-----------------|
| 1. South Pacific Ocean | 3. Indian Sea | 5. Arctic Ocean |
| 2. Tasmanian Sea | 4. Arafura Sea | |

Discovered by Portuguese navigator Luis de Torres in 1606. Australia had no permanent European settlement until after Captain James Cook took possession of New South Wales in the name of the British Crown in 1770. The colony was initially a penal settlement. The city of Sydney was founded in 1788, & Melbourne in 1835. Australia's first Architect was Francis Greenway (1777-1837).

EXAMPLE OF AUSTRALIAN STRUCTURES

1. Opera House in Sydney by Arch't. Jørn Utzon 2. University of Sydney



RUSSIAN RENAISSANCE

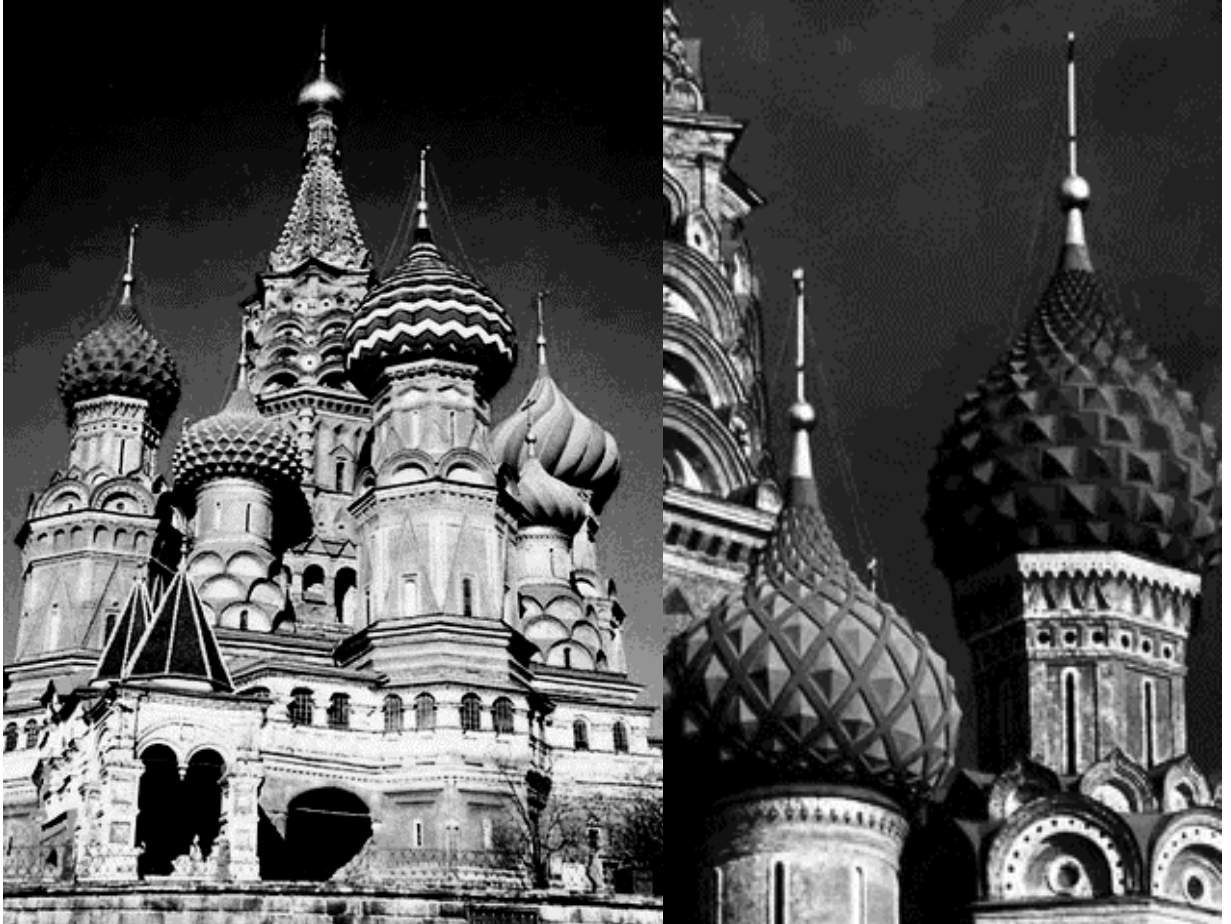
16TH TO 17TH CENTURY

RUSSIAN RENAISSANCE emerged in Moscow where in Ivan III the first ruler to take the title "Tsar" and sent Italian Arch'ts to reconstruct the kremlin.

ARCHITECTURAL EXAMPLES :

1. ST. PETERSBURG, Leningrad by: Bartolomeo Rastrelli – Baroque ex.
2. THE EKATERININSKY PALACE, Palaca
3. CHURCH OF THE INTERCESSION OF THE HOLY VIRGIN, Moscow
4. FORMER GENERAL STAFF HEADQUARTERS, Leningrad
5. ST. BASIL CATHEDRAL , Moscow

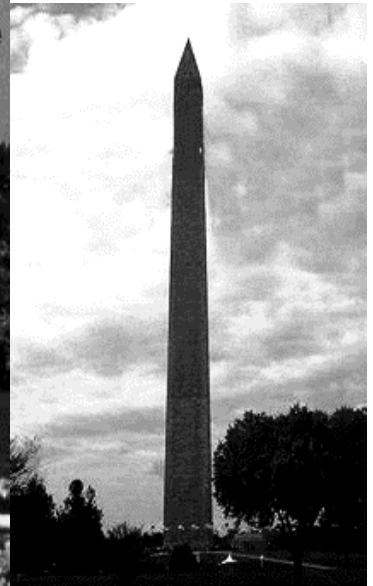
ST. BASIL CATHEDRAL



Winter Palace , S. Petersburg
Post Renaissance 1754



White House , Washington D.C. by James Hoban , Porticoes
by Benjamin Latrobe 1792 - 1829 (official residence of the
President of U.S.



The United States Capitol , Washington D.C.
1793 by William Thornton and
later by Benjamin Latrobe



PENTAGON by George Bergstrom



American

Architecture

AMERICAN ARCHITECTURE

1790 TO 1914

U.S. ARCHITECTURE IS DIVIDED INTO (5) PHASES :

1. **INDIGENOUS PHASE** (Circa 500 B.C. to A.D. 16th Century)
- characterized the use of materials like bricks , stone , rubble & sand.
Most characteristic feature is "truncated pyramids" (step pyramid).
2. **COLONIAL PHASE OR "GEORGIAN PHASE"** – it followed the trend in Britain & in Europe.
a.) Classical Revival – developed fr. The Georgian or Palladian Style of Arch.
e. g. White House, Washington by: James Hoban later additions by McKim, Mead & White
Independence Hall, Philadelphia by: Andrew Hamilton
Capitol Washington D.C. by: William Thornton
Capitol Richmond, Virginia by: Thomas Jefferson
Washington Monument by: Robert Mills
3. **GOTHIC REVIVAL**
e. g. Christ Church, Washington D.C. by: Benjamin Latrobe
Trinity Church, N.Y. by: Richard Upjohn
St. Patrick's Cathedral by: James Renwick
4. **ECCLESTICISM**
e. g. Marshall Wholesale Store, Chicago by: Henry Hobson Richardson
Richard Morris Hunt – first known U.S. Architect.
5. **NATIONAL PHASE** – marked by the breaking – off America's colonial ties
with European powers, & came up w/ National Architecture.
a. Post Colonial Period – influenced by French ideas, Neo – Classical
elements were introduced.
b. First Eclectic Period – predominant style was that of Greek, Introduced
"balloon – frame" construction & the use of cast iron materials.
c. Second Eclectic Period – influence from French Ideas, & Romanesque revival
- introduced "Skycrappers" high rise bldgs. Led to the inventions of;
1.) elevator 2.) metal frame construction
3.) non – load bearing curtain wall
e. g. Massachusetts Institute of Technology – 1st U.S. Arch. school
d. Modern Architecture (Circa 1930 to Present) developed new technology
Great Leaders of European AR., who sought refuge to U.S. w/ the rise of German Nazism (1930's)
1.) Walter Gropius
2.) Eric Mendelsohn
3.) Ludwig Mies Van Der Rohe

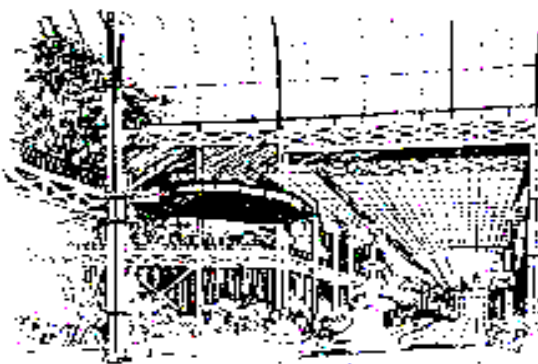
AGE OF REVIVALS 18th - 19TH CENTURY

Known as the battle of styles, a conflict between Classic & Gothic Arch.

PERIODS OF 19TH CENTURY IN ENGLAND

1. **EARLY VICTORIAN** – greek revival & Greko Roman

- e. g. Crystal Palace, London by: Sir Joseph Paxton
The Clifton Suspension Bridge, Bristol by: Isambard Brunel
S. George's Hall, Liverpool by: Harvey Lonsdale Elmes
Westminster New Palace, London by: Sir Charles Barry



Crystal Palace, London; Paxton, 1851



2. **HIGH VICTORIAN** – spread of Gothic & Renaissance revival.

- symbolic figure in the period is Sir George Gilbert Scott
e. g. The University Museum, Oxford by: Benjamin Woodward
Liverpool Cathedral by: Sir George Gilbert Scott

3. LATE VICTORIAN – principal mode of design called “Queen Anne” Style also termed the eclectic style, combination of old style & domestic Architecture of 1870’s in England & in U.S.A.

- revival of Byzantine, Romanesque, Baroque & Early Renaissance.

e. g. Heathcote, Ikley, Yorkshire by: Sir Edwin Lutyens

Tudor Cathedral, Cornwall by: J. L. Pearson.

CONTINENTAL EUROPE

18 TH - 20 TH CENTURY

DIVIDED INTO (2) PHASES:

1. 1830 – 1900 PERIOD

a. JULY MONARCHY (1830 - 1848)- characterized by Neo – Ren.

b. SECOND EMPIRE (1848 - 1870)- characterized by High Neo – renaissance phase whose main features are the “mansard roof & pavilion roof”

c. THIRD REPUBLIC (1870 – 1914) – characterized by Neo – Baroque

e. g. Theater Francais, Paris by: J.V. Louis

Library of S. Geneveve, Paris by: Henry Labrouste

Eiffel Tower by Gustave Eiffel

TERMINOLOGIES:

* ART NOVEAU – an Art free from any historical style.

Characteristic of Art Noveau

1. Organic & Dynamic form

2. Curving Design

3. Simplification of Structural elements

* ECCLECTICISM – the selection of elements from diverse styles for arch’l. decorative designs, different historical styles combined.

• ARCHITECTONIC – related or conforming to tech’l. arch’l. principles.

* REALISM – founded in a theory that the foremost quality of a bldg. should be truth. The discovery of “steel” was to allow these principles to be translated into reality.

* DE STIJL ARCHITECTURE – a movement founded by a group of Dutch Painters, Architects, & abolish all styles & liberate art from representation and individual expression.

* CLASSICISM – a revival or return to the principles of Greek or Roman Art & Arch.

* NEO – CLASSICISM – the last phase of European Class, in the late 18 th & 19 th Cent., characterized by monumentality, strict use of the orders & Application of ornaments.

CONTINENTAL EUROPE EXAMPLES

1. Einstein Tower, Potsdam by: Eric Mendelsohn.

2. Chapel of Notre Dame, Ronchamp by: Le Corbusier.

3. Falling Water, or “Kaufman House” Pennsylvania by: Frank Lloyd Wright.

4. The Solomon R. Guggenheim Museum, N.Y., U.S.A. by: F.L. Wright.

5. Opera House in Sydney, Australia by: Jorn Utzon of Denmark.

6. The Chrysler Bldg. N.Y., U.S.A. by: William Van Alen.

7. Lever House in N.Y., U.S.A. by: Skidmore, Owings & Merrill.

8. The United States Pavillion at Expo ’67, Montreal

9. The Post Office Tower London: The Arch’ts. Of Ministry of Public Bldg. & Work

10. Tokyo Sports Halls – 1964 Olympics- Archt. Kenzo Tange & Engr. Yoshikatsu Tsuboi

11. The Palazzetto dello Sport – for 1960 Olympic Games by: Nervi & Vitellozzi

12. Bauhaus by: Walter Gropius

13. Senatorium Finland by: Alvar Aalto

14. Stockholm City Library, Sweden by: Asplund

15. The Barbican Housing Project, London by: Chamberlin, Powell & Bon (1965)

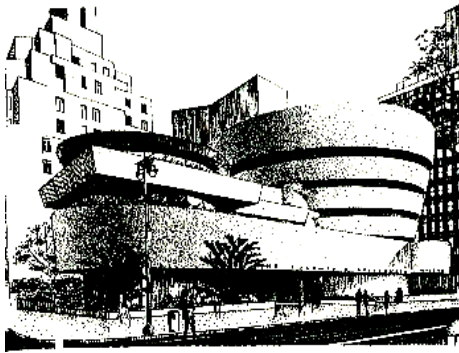
16. Dules International Airport Bldg., Washington D.C. by: Eero Saarinen.

17. Parliament Bldgs., Brazil (1960) by: Lucio Costa & O. Niemeyer.

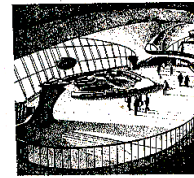
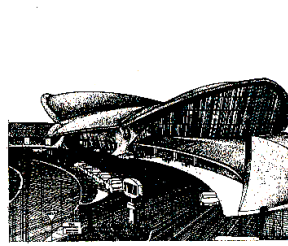
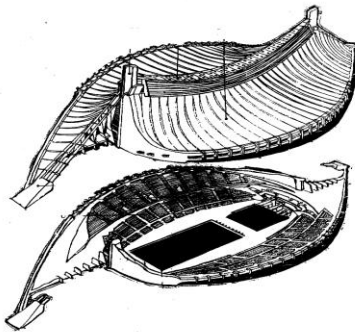
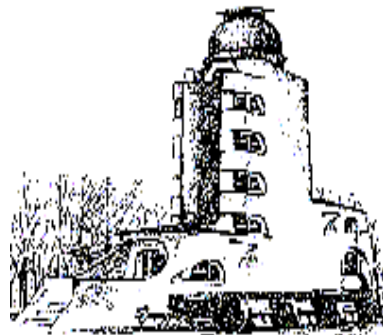
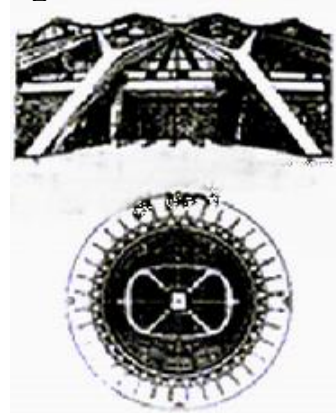
18. Victor Emmanuel II Monument, Rome (1885 –1911) by: Giuseppe Sacconi

19. Empire State Bldg., New York by: Shreve, Lamb and Harmon

20. TWA John F. Kennedy Int’l. Airport, New York by: Eero Saarinen



SOLOMON GUGGENHEIM MUSEUM

TWA JOHN F. KENNEDY INT'L AIRPORT
Int'l. AirportTOKYO OLYMPIC
SPORTS HALLEINSTEIN TOWER,
POTSDAMPALAZZETTO DELLO
SPORT, ROME

FOREIGN ARCHITECTS PHILOSOPHIES & FAMOUS WORKS :

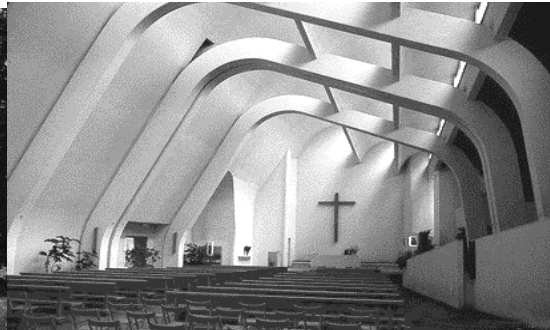
1. **Alvar Aalto (Hugo Alvar Henrik) 1898 – 1976, Finland** *"Architecture must create bldgs. w/c are conceived as a total artistic expression."* His bldgs. has always a touch of "emotion beyond sentimentality" & human beyond whimsy."

Famous works :

1. Paimio Sanatorium, Finland
2. Town Hall of Saynatsalo
3. Pension Bank
4. Convalescent Home @ Paimio
5. Hall of Residence, Massachusetts Institute of Technology
6. Finlandia Concert Hall, Helsinki
7. Library at Vipuri
8. Riola Parish Church



Riola Parish Church



Riola Parish church interior

2. **Behrens, Peter (1868 – 1940), Germany** *"When a time comes for a change, the 'outsider' is needed because it has preserved the freshness of vision required to see what changes are necessary, whereas the specialist may prove to be too inflexible."* He influenced the works of Gropius & Mies van der Rohe. Famous works : AEG Turbine Factory (Industrial Bldg.)

3. **Breuer, Marcel (1902), Hungary**

"A Bldg. has straight geometrical lines. Even when these lines are free, it must always be evident that they have been studied & that they did not spring up simultaneously." "Nature & Architecture are two different things." "Architecture is a social art." **Also the "Father of furniture Architecture"**

Famous works :

1. Tubular steel cantilever chair, Bauhaus Bldg.
2. New Parish Headquarters Bldg. for UNESCO
3. Harneshmasher House
4. Whitney Museum of American Art, New York 1966 (most notable bldg. designed in 1966)

4. Candela , Felix (1910) , Mexico

Famous for thin – shell structures. He is one of the most concrete Engineer of the age .

Famous works :

1. Church of our Lady of Miracles
2. Radiation Institute, Mexico
3. Chapel of the Missionaries of the Holy Spirit, Coyoacan Mexico
4. Los Manatiales Restaurant, Mexico

5. Coates , Wells (1895 – 1958), England

“Simplicity & functionality is the essence of design.”

Famous works :

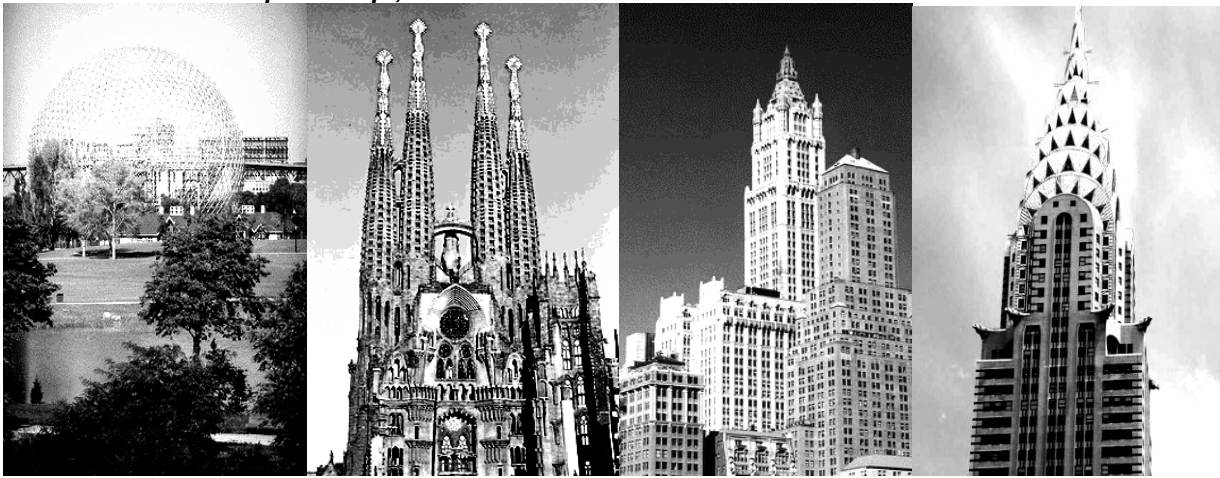
1. Lawn Road Flats, Hampstead, London
2. Master Plan for Iroquios , Canada

6. Fuller , Buckminster (1895) ,USA

Invented the **“Geodesic Dome”** based in principle ; **space frame** in many different materials like timber plywood, aluminum, paper board , prestressed concrete and even bamboo .

Famous works :

1. Geodesic Dome ,US Pavillion , Montreal Exposition 1967
2. Union Tank Car Repair Shop , Louisiana



Deodesic Dome U.S. Pavillion

Sagrada Familia

Woolsworth Bldg.

Chrysler Bldg.

7. Gaudi , Antonio (1852 – 1926) , Spain

“Function has today an increasing variety of forms to choose from.” “When you limit architecture to aesthetic experiment, you’re making technology an end instead of means.”He is the **“Father of Fantastic Architecture.”** He loves to use hyperboloids & paraboloids because **he asserted that the straight line belongs to man & the curved line belongs to God.**

Famous works :

1. Sagrada Familia
2. Casa Batallo
3. Casa Mila
4. Casa Vicens

8. Gilbert , Cass (1859 – 1954) , U.S.

“He followed Beaux – Arts mode w/c refers to historical & eclectic design on a monumental decade.”

Famous works :

1. Woolworth Bldg.,N.Y.(Highest Bldg. Until 1930) It has a Gothic detail w/c belongs to Historicism.

9. Gropius , Walter (1883 – 1969) , Germany

“Art & Architecture, the New Unity,”He founded the **Bauhaus.**He assembled **“The Arch’t. Collaborate (TAC) w/c was made-up of young arch’ts, to put into effect his cherished concept of group practiced.**

Famous works :

1. Fagus Werk (w/ Adolph Meyer) Shoe factory
2. Deutscher Werkbund, Exhibition factory
3. Bauhaus Bldg. At Dessau, Germany (1925 –1926)
4. New Civic Center, Boston (w/ Pietro Belluschi
5. U S Embassy, Athens
6. Pan American Bldg. New York (59 storey bldg.)
7. Harvard Graduate Center
8. Baghdad University
9. Harvard Graduate Center

10. Horta , Victor (1861 – 1947)

His career reflects the movement of **art nouveau**

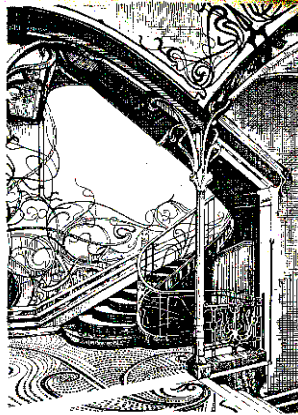
Famous works:

1. Maison Du Peuple (House of the people) Brussels , Belgium (1897)
2. Tassel House , Rue de Turin , Brussels (1893)

Art Noveau Examples



FACADE



INTERIOR OF ENTRANCE LOBBY -

Tassel House at Rue De turin ,Belgium



www.GreatBuildings.com

Sezession House,Austria

11. Johnson , Philip Cortelyou (1906), U.S.

"You can not know history " He **invented the term international Style**.He was responsible for the 1932 exhibition of modern arch . His works were influenced by Mies Van Der Rohe

Famous works :

1. Glass House, New Canaan, Connecticut
2. Seagram Bldg. , New York (w/ Mies van der Rohe)
3. William Proctor's Museum , N.Y.
4. Theater of the Dance – Lincoln Center
5. Art of Gallery of the University of Nebraska
6. Amon Carter Museum, Forth Worth , Texas
7. AT& T Bldg. N.Y. (First Major Monument)w/ these he became the father figure of Post modernism.

12. Khan , Louis (1901 – 1974), U.S.

"What the bldg. wanted to be." "Man lives to express." "The artist is only a vehicle for what always been." "Man's first sense must have been **beauty, a sense of total harmony**."

Famous works :

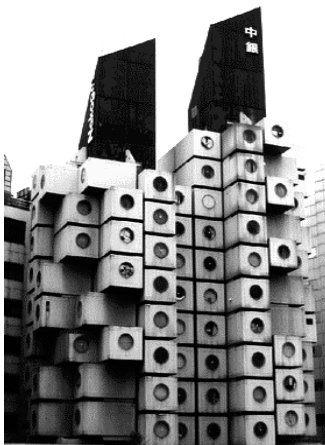
1. Yale Art Gallery
2. Alfred Newton Richard's Medical Center
3. University of Pennysylvania (original version of Brutalism Architecture)
4. Unitarian Church, Ronchester , N.Y.
5. Salk Institute Laboratories, California
6. Indian Institute of Management, Ahme, Dabad
7. Kimbell Art Museum, Texas
8. Paul Mellon Center for British studies at Yale

13. Korukawa , Kusho (1960) Japan

"**Architecture should have the element of growth and change** " Architecture should not be a world to be thought of as an end to itself .It should be considered as a theater stage setting where the leading actors were the people opened to the technique of designing .

Famous works:

1. Capsule House at the Celestial Theme Pavillion , Expo '70 Osaka , Japan
2. Nagakin Capsule Tower , Bldg. , Tokyo , Japan
3. Takara Group , Pavillion , Expo '70
4. Sony Tower , Osaka , Japan
5. Ishikawa , Cultural Center
6. Peace Memorial Gamagori , Japan
7. Toshiba , Pavillion , Expo '70



NAGAKIN CAPSULE , TOKYO

NOTRE DAM DU HAUT RONCHAMP CHAPEL

FLAT IRON , N. Y

14. Latrobe, Benjamin H. (1764 – 1820), U.S.

"A bldg. is the combination of different geometric figures."

"Architecture form proceed from the character of the institution it was intended to house rather from books of design." "Forms & space were conceived as being situated in a landscape & most instances in a specific landscape."

Famous works :

1. Capitol Richmond, Virginia (He design the exterior of this bldg, as commissioned by Jefferson)
2. Bank of Pennsylvania (one of the first ex. Of the Greek Revival in the U.S.)
3. Sedgeley House (earliest of the Gothic Revival in the U.S)
4. Baltimore Cathedral (His most notable bldg.)
5. Baltimore Exchange
6. Louisiana State Bank, New Orleans

15. Le Corbusier (Charles Edouard Jeanneret) (1887 – 1916), Switzerland

"The house is a Machine to live in." "Architecture is masterly, correct & magnificent play of masses brought together into light." "Modular System" – also known as **"Divine Proportion,"** it is a grid base on the stature of man, 89" in length & 112 cu.in. of space are standard of a 6 foot man. Also "Cubism".

Famous works :

1. Le Pavillion de L'Esprit Nouveau (1925) – his first famous structure w/c was an exhibition bldg. He called this a "Cube w/ in a Cube, a charming arrangement of solids & voids).
2. Villa Savoye, Poissy
3. Swiss Pavillion, Cite Universities, Paris (First major bldg.)
4. U.N. Secretariat
5. Unite de Habitation, Marseilles (most impt. reinforced concrete bldg. of the last 2 decades.
6. Notre dam Du Haut , Ronchamp Chapel (example of Brutalism)
7. Dominican Monastery of La Tourette
8. Visual Arts Center, Harvard University (his first U.S. Bldg.)

16. Loos, Adolf (1870 – 1933), Austria (Influenced by Le Corbusier)

"Ornament Equals Crime" – he was against the idea of fanciful designs. He was an anti-ornamentalist, a believer of Engineering & Plumbing. He was an adherent of **Monumentalism**, thus, when he joined a competition for the design of the Chicago Tribune Tower, he designed it in the form of a **"Huge Doric Column."**

Famous works :

1. Steiner House, Vienna – characterized by unrelieved cubic shapes, total absence of ornament & a love of fine materials, it express separateness bet. man & nature.
2. Moller House
3. Ruffer House

17. Mackintosh, Charles Rennie (1868 – 1929), Scotland

He was the principal exponent of "British Art Nouveau". He believed in absence of external decoration & subtlety of proportion in structures.

Famous works :

1. Glasgow School of Art (he won the competition for the design of this structure in Scotland (1898 – 1907)



18. Maillart, Robert (1872 – 1940)

"A bridge is like a house." Each bridge & each house is a special case; each must be constructed & shaped accdg. to the environment w/ w/c it must cope & the function it is to have." He developed the **"Concrete Mushroom Construction"** – (the technique involves a post & a mushroom top spreading from it that are one inseparable concrete unit.

Famous works :

1. Tavenasa Bridge
2. Salzinatobell Bridge
3. Warehouse at Zurich

19. Mendelsohn, Erich (1887 – 1953), Germany

“Architecture is the only tangible expression of space, of w/c the human mind is capable.”

“Architecture seizes upon space, encompasses space & is space itself.” “Architecture depends on the sensuous seizure by means of touch & sight.” “Fluid Mass Theory” means plasticity of concrete

Famous works :

1. Einstein Tower, Potsdam German
2. Metal Worker's Union
3. Columbushaus
4. De la Warr Pavillion, Rexhill
5. No. 64 Old Church St. Chelsea

20. Mies van der Rohe, Ludwig (1886 – 1969)

“Reason is the first principles of all human work.” “Less is more & God is in the details.”

“He rejects “Form follows function.” “Pure form”, he believed that truth is beauty, expressed by the clarity of straight lines reflecting surfaces. More on skyscraper designs.

Famous works :

1. German Pavillion –for 1925 Barcelona Exposition (considered to be the masterpiece of modern arch.)
2. Tugendhat House – Brno, Czechoslovakia
3. Illinois Institute of Technology – he has designed 18 bldgs. in this school
4. Cullinan Hall – addition to the Houston Museum of Fine Arts
5. Chicago Convention Hall
6. Farnsworth House, Illinois
7. Seagram Bldg (w/Philip Johnson) Most famous skyscraper & the finest steel bldg. of the mid-20th cent.

21. Nervi, Pierre Luigi (1891 – 1979), Italy

“Structural correctness, w/c is identical w/ functional, technical & economic is a necessary & sufficient condition of satisfactory aesthetic result.”

Famous works :

1. Palazzetto dello Sport, Rome – designed for the 1960 Olympics
2. UNESCO Secretariat, Paris (w/ Breuer & Zherfuss)
3. Municipal Stadium, Florence
4. Italian Embassy, Brasilia
5. Australian Embassy, Paris
6. International Labor Organization Office, Geneva

22. Niemeyer, Oscar (1939-1979), Rio de Janeiro

“Architecture is not merely a matter of engineering but an expression of the spirit of the imagination of the poetry” To avoid repetition of already known forms and solutions an arch'l. work must contain basically a minimum of creative ability and must convey a personal contribution of the arch't.

Famous works :

1. Brazilian Pavillion, 1939, N.Y. World Fair with Lucio Costa
2. Modern Art Museum, Caracas
3. The Ministry of Education, Rio de Janeiro w/ Le Corbusier
4. St. Francis Church, Pampulha
5. National Congress Bldg. Of Brasilia
6. Presidents Palace

23. Pei, I. M. (1917 – 2019), Chinese Archt.)

Notable for Urban Renewal

Famous Works :

1. John Hancock, Tower
2. Park Hotel, Shanghai
3. Gulf Oil Bldg., Atlanta
4. Mile High Center, Denver, Colorado
5. National Gallery, Washington D.C.
6. Collins Place Dev't., Melbourne Australia
7. Hongkong and Shanghai Bank, Hongkong

24. Perret, Auguste (1874 – 1954), France

“Any project is bad if it is more difficult complicated to construct than necessary.”

“truth is indispensable to Architecture & architectural lie concepts.”

Famous works :

1. Church of the Notre Dame, Le Rainey
2. Hotel de Ville, Le Havre
3. French Atomic Research Center, Sarclay
4. House in the Rule, Franklin, Paris

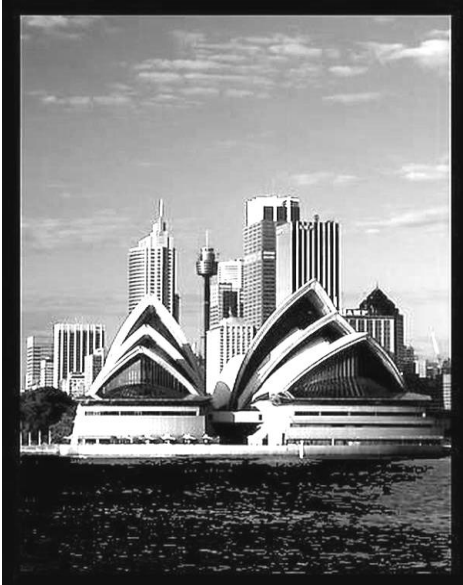
25. Richardson, Henry H. (1838 – 1886), U.S.

He believes in monumentality because this gave 3 things; “Continuity, permanence & power of a bldg. to embody a heroic attitude.” He was the first exponent of the 2nd Eclectic period in the U.S.A.

Famous works :

1. Marshall Wholesale Store, Chicago

OPERA HOUSE , SYDNEY



EIFFEL TOWER , PARIS



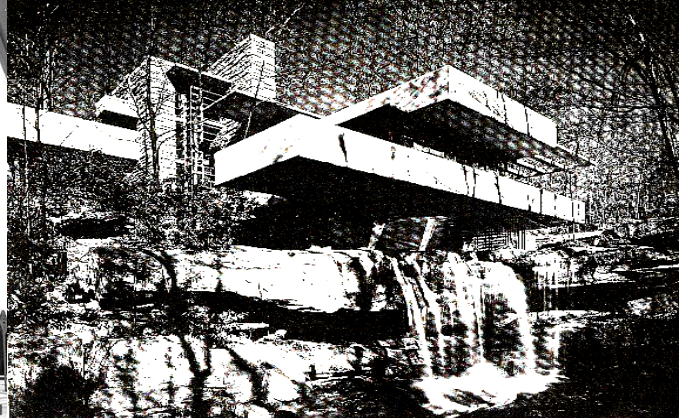
LIBERTY TOWER , N.Y.



TWA J. F. KENNEDY INT'L. AIRPORT , N.Y.



KAUFMAN HOUSE " Falling Water"



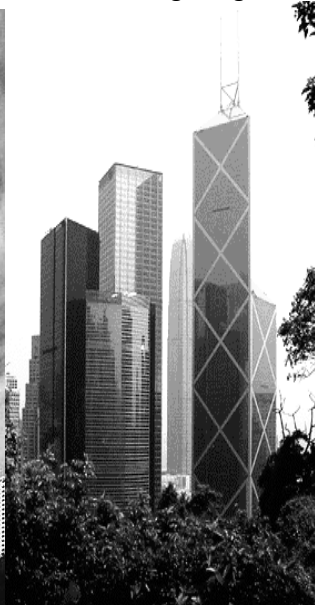
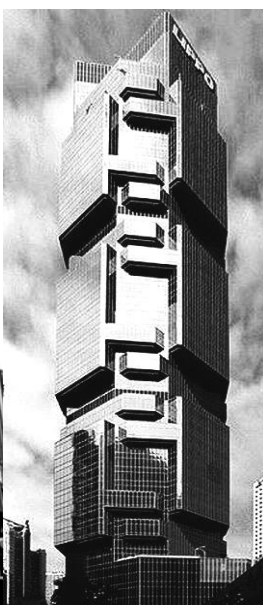
SEARS TOWER ,Chicago



PETRONAS, Malaysia



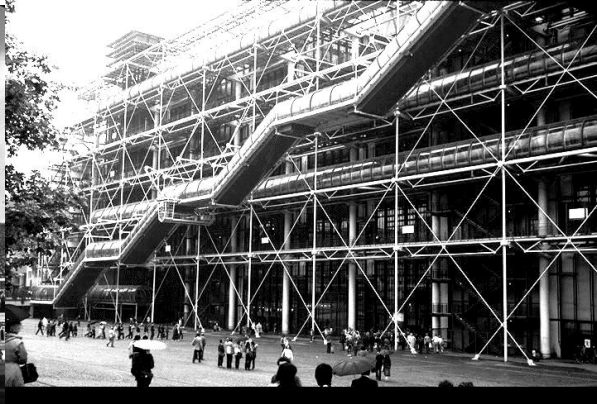
LIPPO TOWER CHINA BANK ,Hongkong



BIG BEN & HOUSE OF PARLIAMENT,England



CENTER POMPIDOU ,



26. Rudolph , Paul ,U.S.

Former **Dean of Architecture in Yale University**

Famous works :

1. Cocoon House , Siesta Key , Florida
2. Wellesly College Art Center
3. The Greely Forest Laboratory , Yale University
4. College of Arcjitecture Bldg. Yale University
5. Endo Laboratories , garden City , New York
6. Lippo Bldg. Hongkong

27. Saarinen , Eero (1910 – 1961), Finland

“Function influence but does not dictate form.” **“Spiritual function is inseparable from practical function.”** He is **the son of Eliel Saarinen; he invented the “Reflective Glass”.**

Famous works :

1. TWA “The World Airlines”, Terminal @ the Kennedy Terminal, N.Y. – most expressive structure since Mendelson’s “Einstein Tower”.
2. St. Louis Jefferson National Expansion Memorial – he won in the competition for the design of this bldg., w/c was stainless steel arch in the form of a reverse catenary curve.
3. U.S. Embassies, London & Oslo
4. Chapel & Kresge Auditorium, Massachusetts Institute of Technology
5. Dulles International Airport
6. General Motors Technical Center – a 100 million dollar complex.
7. TJ Watson Research Center, Yorktown, N.Y.
8. Chapel of Concordia Senior College

28. Saarinen , Eliel (1873 – 1950), Finland

“Beauty grows from necessity not from repetition of formulas.” He built many railway stations in Europe.

Famous works :

1. Chicago Tribune Tower – he placed 2nd from the competition of this design w/c resulted in his immigration to the U.S.
2. National Museum, Finland
3. Cranbrook School, Michigan
4. Christ Church, Minneapolis
5. Helsinki Railroad Station, Finland

29. Skidmore, Owings, Merrill (1950), U.S.

Famous works :

1. **Lever House, N.Y.** (w/ **Gordon Bunshaft** as designer)–this is a **pace-setter for office bldg. of the 1950’s. First bldg. to provide a pedestrian plaza since Rockefeller Center & it has no grnd. flr.**
2. Connecticut General Life Insurance Bldg. (w/ Bunshaft & William Brown as Designers) chosen as one of the 10 bldgs. in American’s Future at the AIA’s 100th Anniversary.
3. Air Force Academy, Colorado Springs
4. **SEAR’s Tower**
5. John Hancock Western Home Office Bldg., San Francisco
6. Banque Pambert, Brussels
7. Yale Rare Book Library (w/ G. Bunshaft as designer)
8. Jin Mao Bldg.

30. Sullivan , Louis (1856 – 1924), U.S.

“Form Follows Function.” Known as the **“Father of Modern Architecture”**, in U.S. He was the 1st to give logic & form to the steel skyscraper, the structure, **the structure that announced the beginning of modern architecture.**

Famous works :

1. Carson Pirie and Scott Store – (his major bldg.)
2. Wainwright Bldg., St. Louis
3. Guaranty Bldg., Buffalo, N.Y.
4. Auditorium Bldg., Chicago

31. Tange , Kenzo (1913), Japan

“Modern Architecture need not be Western.” **“City must be subject to growth, decay & renewal.”** He won International Competition for replanning Skopje in Yugoslavia, also master planner of the International exhibition of 1970 at Osaka.

Famous works :

1. Hiroshima Peace Center
2. Tokyo City Hall
3. Kagawa Prefecture Office
4. National Gymnasium for 1964 Olympic Games, Tokyo Japan
5. St. Mary’s Cathedral, Tokyo Japan
6. Tokyo Plan 1960 – he extended the City over the bay.

32. Vitruvius (Marcus Vitruvius Polio) (46 – 30 B.C.), Rome

“Architecture must meet 3 requirements : Strength, Beauty, Utility.”

Famous works :

1. Roman orders & capitals

33 Wagner , Otto (1841 – 1918) , Vienna

“Nothing that is not practical can be beautiful.” “The essential basis of all natural forms is geometries.” “Our starting point for artistic creation is to be found only in Modern Life.” “Futuristic Architectural Projects.”

Famous works :

1. Post Office Savings Bank Vienna
2. Church of the Steinhof Asylum

34. Wallace Harrison (1930)

He introduced “Thermal Glass” at UN Secretariat Bldg. . Famous for his “Tylon & Perisphere” for The 1939 New York’s Trade fair

Famous works:

1. Alcoa Bldg. Pittsburg
2. Corning Glass , New York

35. Wren , Sir Christopher (1632 – 1723), England

“He favored competition by addition rather than by subdivision.” After the Great Fire in London, he designed its 51 City Churches.

Famous works :

1. St. Paul Cathedral, London
2. Greenwich Hospital
3. Whitehall Palace
4. Winchester Palace
5. Hampton Court

36. Wright , Frank Lloyd (1869 – 1959), U.S.

“Organic Architecture.” “Nature is the determinant in the conceptualization of human environment.” “The bldg. must not only be on the ground but off the ground.” “Space in Motion.”

Famous works :

1. Imperial Hotel, Tokyo, Japan
2. Johnson Wax Company Bldg. , Racine, Wisconsin, U.S.
3. Kaufman House or “Falling Water, Bear Run, Pennsylvania
4. Larkin Administration Bldg. Buffalo, N.Y.
5. Robie House or “Prairie House”, Chicago, Illinois
6. Solomon Guggenheim Museum, N.Y.
7. Unity Temple, Oak Park, Illinois
8. Ward Willits House, Highland Park, Illinois
9. Price Tower , Oklahoma (First known skyscraper

37. Yamasaki , Minoru (1912), U.S.

“Humanism.” “His concept of architecture is one of “serenity & delight.”

Famous works :

1. American Concrete Institute Bldg., U.S.
2. Bank of Oklahoma Office Bldg., Williams Center, Oklahoma
3. Century Plaza Towers & Garage, Century City, L.A., California
4. World Trade Center

World Tallest Buildings

1. Shanghai World Financial Center ,Shanghai 1509 feet - 460 meters - 94 stories - 2002
Architects : Kohn Pedersen Fox Associates Next Tallest World Bldg., Multiple Use Tower
2. Jin Mao Bldg , Shanghai 1380 feet - 421 meters - 88 stories -1998
Architects : Skidmore, Owings & Merrill (Steel & Concrete Structure) Mixed-Use Building
3. Central Plaza , Hong Kong 1227 feet - 374 meters - 78 stories - 1992
Architects : Ng Chun Man & Associates (Concrete Structure) Office Tower
4. Bank of China ,Hong Kong 1209 feet - 369 meters - 70 stories - 1989
Architects : I.M. Pei & Partners (Steel & Concrete Structure , Office Tower
5. Post & Communications Bldg. ,Xiamen 1193 feet - 363 meters - 63 stories - 2000
Architects : Skidmore, Owings & Merrill
6. The Centre , Hong Kong 1148 feet - 350 meters - 79 stories - 1998
Architects : Dennis Lau & Ng Chun Man Office Tower
7. Shun Hing Square , Shenzhen 1066 feet - 325 meters - 81 stories - 1996
Architects : K.Y. Cheung Design Associates (Steel Structure) Office Tower
8. CITIC Plaza , Guangzhou 1056 feet - 322 meters - 80 stories - 1996
Architects : Dennis Lau & Ng Chun Man (Concrete Structure)
9. Shangri - La Hotel, Pacific Place , Hong Kong 748 feet - 228 meters - 56 stories - 1991
Architects : Wong & Ouyang (Concrete Structure) Mixed-Use Bldg.
10. Cosco Tower , Hong Kong 748 feet - 228 meters - 54 stories - 1997
Architects : Hsin - Yieh Architects (Concrete Structure) Office Tower & Shops

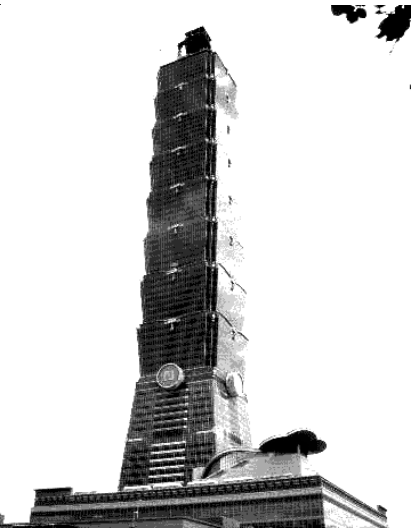
THE CENTER , Shanghai



H S B C BUILDING , HONGKONG



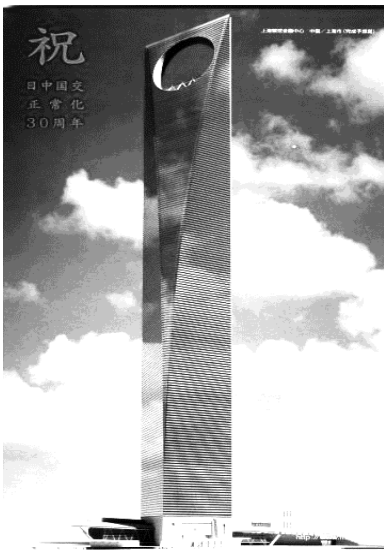
TAIPEI 101 , TAIPEI , TAIWAN



SHANGHAI WORLD FIN .CTR .

BURJ AL ARAB , DUBAI

AL FAISALIYAH , SAUDI



LONDON CITY HALL , LONDON

OVERSEAS CHINA BANK CORP.

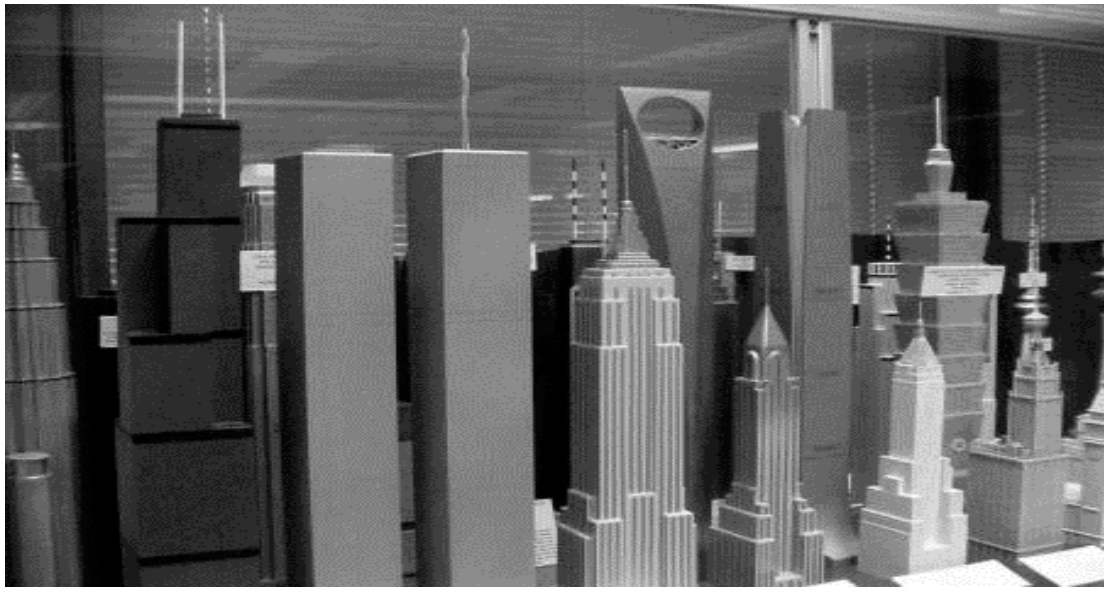


30 ST. MARY AXE 20 , N.Y.

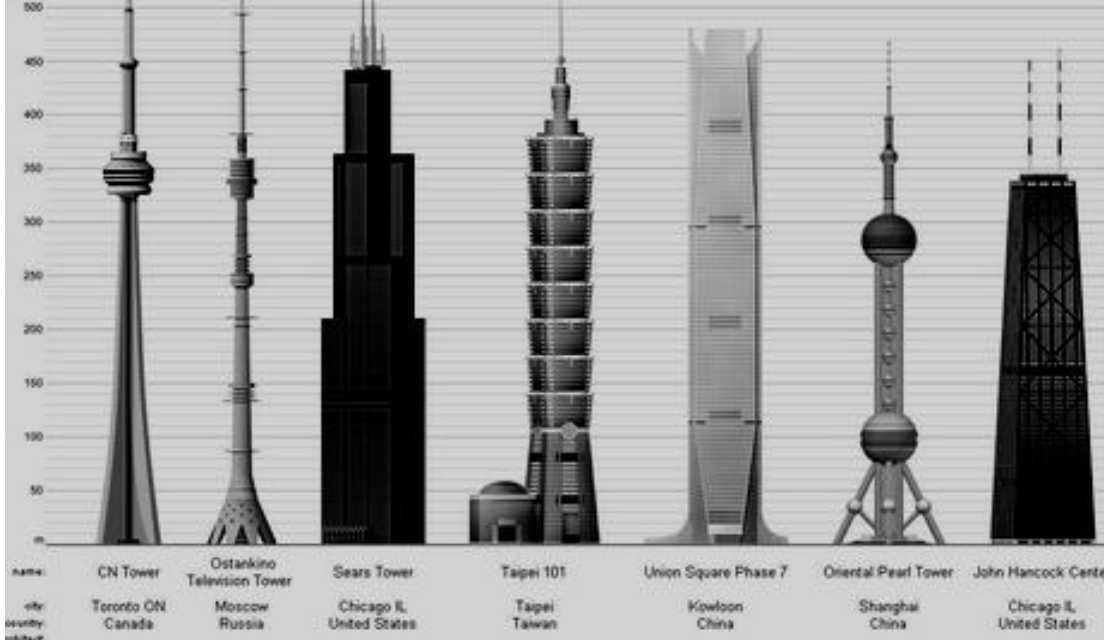
EMIRATES TOWER , DUBAI

HIGH CLIFF , HONGKONG





PETRONAS – SEARS – WORLD TRADE - EMPIRE STATE – SHANGHAI WORLD FINANCE CTR.
CHRYSLER – WOOLSWORTH – JOHN HANCOCK – TAIPEI 101 – ORIENTAL PEARL TOWER



Official World's 200 Tallest High-rise Buildings

This overview is the most accurate compilation of its kind and uses in-depth research results and reliable building information. It is based on data standards and this listing is verified and updated continuously and includes high-rise buildings which have been topped out, including those still under construction or on hold. The ranking is based entirely on the buildings' structural height. TV towers, masts, and other building types are not included.

#	Building	City	Architects	Height	Height	Floors	Year
1.	<u>Taipei 101</u>	<u>Taipei</u>	C.Y. Lee & Partners	509 m	1,671 ft	101	2004
2.	<u>Petronas Tower 1</u>	<u>Kuala Lumpur</u>	Cesar Pelli & Associates	452 m	1,483 ft	88	1998
3.	<u>Petronas Tower 2</u>	<u>Kuala Lumpur</u>	Cesar Pelli & Associates	452 m	1,483 ft	88	1998
4.	<u>Sears Tower</u>	<u>Chicago</u>	Skidmore Owings & Merrill	442 m	1,450 ft	108	1974
5.	<u>Jin Mao Tower</u>	<u>Shanghai</u>	Skidmore Owings & Merrill	421 m	1,380 ft	88	1998
6.	<u>World Trade Center Tower 1</u>	New York	Minoru Yamasaki	No	Longer	Existing	
7.	<u>World Trade Center Tower 2</u>	New York	Minoru Yamasaki	No	Longer	Existing	
8.	<u>Two International Finance..</u>	<u>Hong Kong</u>	Rocco Design Ltd, DLN Archts..& Engrs.	415 m	1,362 ft	88	2003
9.	<u>CITIC Plaza</u>	<u>Guangzhou</u>	DLN Archts. & engrs.	391 m	1,283 ft	80	1997
10.	<u>Shun Hing Square</u>	<u>Shenzhen</u>	K.Y. Cheung & Associates	384 m	1,260 ft	69	1996
11.	<u>Empire State Building</u>	<u>New York City</u>	Shreve , Lamb , & Harmon	381 m	1,250 ft	102	1931

12.	<u>Central Plaza</u>	<u>Hong Kong</u>	DLN Archts. & Engrs.	374 m	1,227 ft	78	1992
13.	<u>Bank of China Tower</u>	<u>Hong Kong</u>	leoh Ming Pei , Cobb , Freed & Partners	367 m	1,205 ft	72	1990
14.	<u>Emirates Office Tower</u>	<u>Dubai</u>	Hazel W.S. , Wong , Norr Group Consultants Ltd	355 m	1,163 ft	54	2000
15.	<u>Tuntex Sky Tower</u>	<u>Kaohsiung</u>	C.Y.L. & P. , Hellmuth , Obata & Kassabaum	348 m	1,140 ft	85	1997
16.	<u>Aon Center</u>	<u>Chicago</u>	Edward Durell Stone & Associates	346 m	1,136 ft	83	1973
17.	<u>The Center</u>	<u>Hong Kong</u>	DLN Archts. , & Engrs.	346 m	1,135 ft	73	1998
18.	<u>John Hancock Center</u>	<u>Chicago</u>	Skidmore , Owings & Merrill	344 m	1,127 ft	100	1969
19.	<u>Ryugyong Hotel</u>	<u>Pyongyang</u>	Stopped	330 m	1,083 ft	105	1992
20.	<u>Burj Al Arab</u>	<u>Dubai</u>	W. S. Atkins & Partners	321 m	1,053 ft	60	1999
21.	<u>Chrysler Building</u>	<u>New York City</u>	William Van Allen	319 m	1,046 ft	77	1930
22.	<u>Bank of America Plaza</u>	<u>Atlanta</u>	Kevin Roche John Dinkeloo & Associates	312 m	1,023 ft	55	1992
23.	<u>US Bank Tower</u>	<u>Los Angeles</u>	leoh Ming Pei , Cobb , Freed & Partners	310 m	1,018 ft	73	1990
24.	<u>Menara Telekom</u>	<u>Kuala Lumpur</u>	Hijas Kastun Associates	310 m	1,017 ft	55	2001
25.	<u>Emirates Hotel Tower</u>	<u>Dubai</u>	Hazel W.S. Wong , Norr Group Consultants Ltd	309 m	1,014 ft	56	2000
26.	<u>AT&T Corporate Center</u>	<u>Chicago</u>	Skidmore , Owings & Merrill	307 m	1,007 ft	60	1989
27.	<u>JPMorganChase Tower</u>	<u>Houston</u>	leoh Ming Pei Partners	305 m	1,002 ft	75	1982
28.	<u>Baiyoke Tower II</u>	<u>Bangkok</u>	Plan Arch'ts. Co.	304 m	997 ft	85	1997
29.	<u>Two Prudential Plaza</u>	<u>Chicago</u>	Loebl , Schlossman & Hackl	303 m	995 ft	64	1990
30.	<u>Kingdom Centre</u>	<u>Riyadh</u>	Ellerbe Becket, Omrania & Ass	302 m	992 ft	41	2002
31.	<u>First Canadian Place</u>	<u>Toronto</u>	E.Durell Stone & Ass., Bregman+Hamann Archt's.	298 m	978 ft	72	1976
32.	<u>Yokohama Landmark Tower</u>	<u>Yokohama</u>	Taise Const. Co. Ltd., Stubbins Ass.	296 m	972 ft	70	1993
33.	<u>Wells Fargo Plaza</u>	<u>Houston</u>	Skidmore , Owings & Merrill	296 m	972 ft	71	1983
34.	<u>311 South Wacker Drive</u>	<u>Chicago</u>	Kohn Pedersen Fox Asso.	293 m	961 ft	65	1990
35.	<u>SEG Plaza</u>	<u>Shenzhen</u>	Hua YI Designing Consultants	292 m	957 ft	70	2000
36.	<u>American International Bldg.</u>	<u>New York City</u>	Hollon & George , Clinton & Russel	290 m	952 ft	66	1932
37.	<u>Key Tower</u>	<u>Cleveland</u>	C. Pelli & Ass., Kendall , Heaton & Associates	289 m	947 ft	57	1991
38.	<u>Plaza 66</u>	<u>Shanghai</u>	Frank C.Y. Feng Archt's.,Zeidler Partners	288 m	945 ft	66	2001
39.	<u>One Liberty Place</u>	<u>Philadelphia</u>	Murphy ,Jan Inc.Arch'ts.Zeidler and Partners	288 m	945 ft	61	1987
40.	<u>Bank of America Tower</u>	<u>Seattle</u>	Chester Lindsey Archt's.	285 m	937 ft	76	1985
41.	<u>Tomorrow Square</u>	<u>Shanghai</u>	John Portman & Associates	285 m	934 ft	55	2003
42.	<u>Cheung Kong Centre</u>	<u>Hong Kong</u>	I.M.Pei and Partners	283 m	928 ft	62	1999
43.	<u>The Trump Building</u>	<u>New York City</u>	H. Craig Severance , Shreve Lamb and Harmon	283 m	927 ft	70	1930
44.	<u>Bank of America Plaza</u>	<u>Dallas</u>	JPJ Archts. Inc HIM Design	281 m	921 ft	72	1985
45.	<u>OUB Centre</u>	<u>Singapore</u>	Kenzo Tange & Associates SAA Partnership	280 m	919 ft	63	1986
46.	<u>Republic Plaza</u>	<u>Singapore</u>	Kisho Kurokawa Archts. & Associates	280 m	919 ft	66	1995
47.	<u>UOB Plaza One</u>	<u>Singapore</u>	Kenzo Tange & Associates	280 m	919 ft	66	1992
48.	<u>Citigroup Center</u>	<u>New York City</u>	Edward Larrabee Barnes Associates	279 m	915 ft	59	1977
49.	<u>Hong Kong New World Tower</u>	<u>Shanghai</u>	Bregman + Harmann Archts.	278 m	913 ft	61	2002
50.	<u>Scotia Plaza</u>	<u>Toronto</u>	WZMH Archts.	275 m	902 ft	68	1988
51.	<u>Williams Tower</u>	<u>Houston</u>	Johnson , Burgee Archts. ,Morris Aubry	275 m	901 ft	64	1983
52.	<u>Wuhan World Trade Tower</u>	<u>Wuhan , China</u>	No Entry	273 m	896 ft	58	1998

53.	<u>Renaissance Tower</u>	<u>Dallas</u>	Hellmuth Obata & Kassabaum	270 m	886 ft	56	1974
54.	<u>Dapeng International Plaza..</u>	<u>Guangzhou</u>	No Entry	269 m	884 ft	56	2004
55.	<u>21st Century Tower</u>	<u>Dubai</u>	W.S. Atkins & Partners	269 m	883 ft	55	2003
56.	<u>Al Faisaliyah Center</u>	<u>Riyadh</u>	Norman Foster & Partners	267 m	876 ft	30	2000
57.	<u>900 North Michigan</u>	<u>Chicago</u>	Kohn Pedersen Fox Asso.	265 m	871 ft	66	1989
58.	<u>Bank of America Corporate..</u>	<u>Charlotte</u>	Cesar Pelli Archts. & Asso.	265 m	871 ft	60	1992
59.	<u>SunTrust Plaza</u>	<u>Atlanta</u>	John Portman & Associates	265 m	871 ft	60	1992
60.	<u>Bocom Financial Towers</u>	<u>Shanghai</u>	ABB Architekten	265 m	869 ft	52	2002
61.	<u>Triumph-Palace</u>	<u>Moscow</u>	Don Stroy	264 m	866 ft	61	2004
62.	<u>120 Collins Street</u>	<u>Melbourne</u>	Daryl Jackson Pty. Ltd.	264 m	866 ft	52	1991
63.	<u>Tower Palace Three, Tower..</u>	<u>Seoul</u>	Skidmore , Owings & Merrill	264 m	865 ft	73	2004
64.	<u>Trump World Tower</u>	<u>New York City</u>	Costas Kondylis & Partners LLP Archts.	262 m	861 ft	72	2001
65.	<u>Shenzhen Special Zone Pre..</u>	<u>Shenzhen</u>	Sense , Eng'g. Services Ltd.	262 m	860 ft	48	1998
66.	<u>Water Tower Place</u>	<u>Chicago</u>	Loebl . Schlossman & Hackl	262 m	859 ft	74	1976
67.	<u>Aon Center</u>	<u>Los Angeles</u>	The Luckman Partnership Inc.	262 m	858 ft	62	1973
68.	<u>Canada Trust Tower</u>	<u>Toronto</u>	Skidmore , Owings & Merrill	261 m	856 ft	53	1990
69.	<u>Bloomberg Tower</u>	<u>New York City</u>	No Entry	261 m	855 ft	54	2004
70.	<u>Post & Telecommunication ..</u>	<u>Guangzhou</u> <u>China</u>	No Entry	260 m	853 ft	66	2003
71.	<u>Transamerica Pyramid</u>	<u>San Francisco</u>	William Pereira	260 m	853 ft	48	1972
72.	<u>Bank One Plaza</u>	<u>Chicago</u>	C.F. Murphy Associates	259 m	850 ft	60	1969
73.	<u>GE Building</u>	<u>New York City</u>	The Associates Archts.	259 m	850 ft	69	1933
74.	<u>Commerzbank Tower</u>	<u>Frankfurt ,</u> <u>Germany</u>	N. Fosters & Partners	259 m	850 ft	56	1997
75.	<u>PBCOM Tower</u>	<u>Makati</u>	Skidmore , Owings & Merrill	259 m	848 ft	55	2000
76.	<u>Two Liberty Place</u>	<u>Philadelphia</u>	Murphy , Jahn Inc., Archts.	258 m	848 ft	58	1990
77.	<u>Bank of China Tower</u>	<u>Shanghai</u>	Archts. Nikken Sekkei Ltd.	258 m	846 ft	53	2000
78.	<u>Park Tower</u>	<u>Chicago</u>	Lucien , Lagrang Archts.	257 m	844 ft	67	2000
79.	<u>MesseTurm</u>	<u>Frankfurt</u>	Murphy , Jahn Inc. Archts.	257 m	842 ft	55	1990
80.	<u>U.S. Steel Tower</u>	<u>Pittsburgh</u>	Hamson & Abramovitz & Abbe	256 m	841 ft	64	1970
81.	<u>Sorrento 1</u>	<u>Hong Kong</u>	Wong & Ouyang (HK) Ltd.	256 m	841 ft	75	2003
82.	<u>Mok-dong Hyperion I, Tower..</u>	<u>Seoul</u>	Hyundai Eng'g. Construction	256 m	840 ft	69	2003
83.	<u>Rinku Gate Tower Building</u>	<u>Izumisano</u> <u>Japan</u>	Nikken Sekkei Ltd. Yasui Archts.& Engrs.	256 m	840 ft	56	1996
84.	<u>Langham Place Office Tower..</u>	<u>Hong Kong</u>	Wong & Ouyang (HK) Ltd.	255 m	837 ft	59	2004
85.	<u>The Harbourside</u>	<u>Hong Kong</u>	P & T Archts. & Engrs. Ltd .	255 m	837 ft	75	2003
86.	<u>Capital Tower</u>	<u>Singapore</u>	RSP Archts. Planners & Engrs. Private Ltd .	254 m	833 ft	52	2000
87.	<u>Highcliff</u>	<u>Hong Kong</u>	DLN Archts. & Engrs.	252 m	828 ft	72	2003
88.	<u>Osaka World Trade Center</u>	<u>Osaka</u>	Nikken Sekkei Ltd.	252 m	827 ft	55	1995
89.	<u>Rialto Towers</u>	<u>Melbourne</u>	Gerald de Preu & Partners	251 m	824 ft	63	1986
90.	<u>Jiali Plaza</u>	<u>Wuhan</u>	WMKY Ltd.	251 m	823 ft	61	1997
91.	<u>Wisma 46</u>	<u>Jakarta</u>	Zeidler Partnership Archts., DP Archts.	250 m	820 ft	48	1996
92.	<u>One Atlantic Center</u>	<u>Atlanta</u>	Heery Int'l. Inc. Johnson / Burgee Archts.	250 m	820 ft	50	1987
93.	<u>KLI 63 Building</u>	<u>Seoul</u>	Skidmore , Owings , Merrill	249 m	817 ft	60	1985
94.	<u>Central Park</u>	<u>Perth</u>	Forbes & Fitzhardinge	249 m	817 ft	52	1992

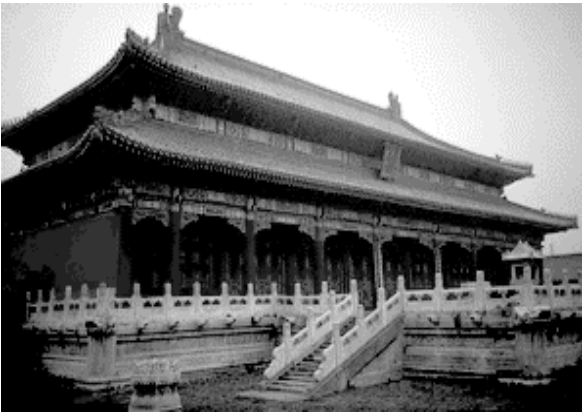
95.	<u>Cityspire</u>	<u>New York City</u>	Murphy / Jahn , Inc. Archts.	248 m	814 ft	75	1989
96.	<u>One Chase Manhattan Plaza</u>	<u>New York Cit</u>	Skidmore , O , & M LLP	248 m	813 ft	60	1961
97.	<u>State Tower</u>	<u>Bangkok</u>	Rangsan Architecture Co.	247 m	811 ft	68	2001
98.	<u>Bank One Tower</u>	<u>Indianapolis</u>	The Stubbins Asso ., Inc.	247 m	811 ft	49	1990
99.	<u>Conde Nast Building</u>	<u>New York Cit</u>	Fox & Fowle Archts.	247 m	809 ft	48	1999
100.	<u>MetLife Building</u>	<u>New York Cit</u>	Pietro Belluschi ,Emery Roth & Sons	246 m	808 ft	60	1963
101.	<u>JR Central Office Tower</u>	<u>Nagoya</u>	Sakakura Associates Archts. & Engrs.	245 m	804 ft	51	2000
102.	<u>Shin-Kong Life Tower</u>	<u>Taipei</u>	Kaku Morin	245 m	803 ft	51	1993
103.	<u>City Gate Ramat Gan</u>	<u>Ramat Gan , srael</u>	AMAV Archts.,	244 m	801 ft	68	2001
104.	<u>Chifley Tower</u>	<u>Sydney</u>	Kohn Pedersen Fox & Asso.	244 m	801 ft	50	1992
105.	<u>Menara Maybank</u>	<u>Kuala Lumpur</u>	Taisei Construction Co., Ltd. Hijias Kashn	244 m	799 ft	50	1988
106.	<u>Tokyo City Hall, Tower I</u>	<u>Tokyo</u>	Kenzo Tange Associates	243 m	799 ft	48	1991
107.	<u>Citigroup Centre</u>	<u>Sydney</u>	Crone & Associates	243 m	797 ft	50	2000
108.	<u>The Tower</u>	<u>Dubai</u>	Khatib & Alami	243 m	796 ft	54	2002
109.	<u>Dalian World Trade Center</u>	<u>Dalian</u>	Nodel Archts.	242 m	794 ft	50	2000
110.	<u>Mellon Bank Center</u>	<u>Philadelphia</u>	Kohn Pedersen Fox Asso.	241 m	792 ft	54	1990
111.	<u>Woolworth Building</u>	<u>New York City</u>	Cass Gilbert	241 m	792 ft	57	1913
112.	<u>Maxdo Centre</u>	<u>Shanghai</u>	WSP Shanghai	241 m	792 ft	55	2002
113.	<u>Bank of China Mansion</u>	<u>Qingdao</u>	Beijing Arch'l. Design and Research Institute	241 m	791 ft	54	1999
114.	<u>John Hancock Tower</u>	<u>Boston</u>	I.M. Pei & Partners Pei Cobb Freed & Partners	241 m	790 ft	60	1976
115.	<u>Four Seasons Hotel & Tower..</u>	<u>Miami</u>	Bermelo , Ajamil & Partners Inc, Gary Edward Handel + Associates	240 m	789 ft	64	2003
116.	<u>Manulife Plaza</u>	<u>Hong Kong</u>	DLN Archts. & Engrs.,	240 m	789 ft	52	1998
117.	<u>Panglin Plaza</u>	<u>Shenzhen</u>	Architecture Design Institute , Ministry of Construction	240 m	787 ft	57	1999
118.	<u>DoCoMo Yoyogi Building</u>	<u>Tokyo</u>	Kajima Design NTT Power & Bldg. Facilities	240 m	787 ft	28	2000
119.	<u>Moscow State University</u>	<u>Moscow</u>	Lev Vladimirovitch Rudnev	240 m	787 ft	36	1953
120.	<u>Sunshine 60 Building</u>	<u>Tokyo</u>	Mitsubishi Estate Co.	240 m	787 ft	60	1978
121.	<u>Bank One Center</u>	<u>Dallas</u>	Johnson Burgee Archts. HKS	240 m	787 ft	60	1987
122.	<u>Mok-dong Hyperion I, Tower..</u>	<u>Seoul</u>	Hyundai En'g. Construction	239 m	785 ft	63	2003
123.	<u>Commerce Court West</u>	<u>Toronto</u>	I.M.Pei & Partners	239 m	784 ft	57	1972
124.	<u>Roppongi Hills Mori Tower</u>	<u>Tokyo</u>	Jerde Partnership Inc., Irie Miryake Archts. & Engrs.	238 m	781 ft	54	2003
125.	<u>30 Hudson Street</u>	<u>Jersey City</u>	Cesar Pelli & Asso. & Archts.	238 m	781 ft	42	2004
126.	<u>Empire Tower</u>	<u>Kuala Lumpur</u>	Low Yat Construction	238 m	781 ft	62	1994
127.	<u>Bank of America Center</u>	<u>San Francisco</u>	Pietro Belluschi Wurster, Bernardis Emmons, S O M	237 m	779 ft	52	1969
128.	<u>One Worldwide Plaza</u>	<u>New York City</u>	Skidmore O M , LLP	237 m	778 ft	50	1989
129.	<u>225 South Sixth</u>	<u>Minneapolis</u>	Pei Cobb Freed & Partners	237 m	776 ft	56	1992
130.	<u>IDS Tower</u>	<u>Minneapolis</u>	Edward F. Baker & Associates, Johnson / Burgee Archts.	236 m	775 ft	57	1973
131.	<u>Sorrento 2</u>	<u>Hong Kong</u>	Wong & Ouyang (HK) Ltd.	236 m	773 ft	66	2003
132.	<u>Wells Fargo Center</u>	<u>Minneapolis</u>	Cesar Pelli & Associates Archts. Kendall /Heaton Asso.	235 m	773 ft	57	1988
133.	<u>Bank of America Center</u>	<u>Houston</u>	Kendall / Heaton Asso., Johnson Burgee Archts.	235 m	772 ft	56	1983
134.	<u>Washington Mutual Tower</u>	<u>Seattle</u>	Kohn Pedersen Fox Associates / Mc Kinley Archts.	235 m	772 ft	55	1988
135.	<u>One Canada Square</u>	<u>London</u>	Cesar Pelli & Asso. Archts.	235 m	771 ft	50	1991
136.	<u>191 Peachtree Tower</u>	<u>Atlanta</u>	Kendall / Heaton Asso. Inc. / Johnson / Burgee Archts.	235 m	770 ft	50	1990

137.	<u>Temasek Tower</u>	<u>Singapore</u>	The Stubbins Asso. Inc.	235 m	770 ft	52	1986
138.	<u>Tokyo Opera City Tower</u>	<u>Tokyo</u>	TAK Associated Archts./ NTT Power &Bldg. Facilities	234 m	768 ft	54	1997
139.	<u>Tower Palace One, Tower B</u>	<u>Seoul</u>	Samoo Archts. & Engrs.	234 m	767 ft	66	2002
140.	<u>Three First National Plaza..</u>	<u>Chicago</u>	Skidmore , O, & M LLP	234 m	767 ft	57	1981
141.	<u>Wachovia Financial Center</u>	<u>Miami</u>	Skidmore , O, & M LLP	233 m	764 ft	55	1984
142.	<u>The Harbourfront Landmark</u>	<u>Hong Kong</u>	DLN Archts.	233 m	763 ft	70	2001
143.	<u>Shinjuku Park Tower</u>	<u>Tokyo</u>	Kenzo Tange Associates	233 m	763 ft	52	1994
144.	<u>International Ocean Shipping..</u>	<u>Shanghai</u>	East China Architecture & Design Institute	232 m	762 ft	50	2000
145.	<u>Texaco Heritage Plaza</u>	<u>Houston</u>	Mohammed Nasr & Partners	232 m	762 ft	53	1987
146.	<u>Menara KOMTAR</u>	<u>Penang Island</u> , <u>Malaysia</u>	Jurubena Bertiga Int'l. SDN	232 m	760 ft	65	1985
147.	<u>Carnegie Hall Tower</u>	<u>New York City</u>	Cesar Pelli & Asso. Archts.	231 m	757 ft	60	1991
148.	<u>Palace of Culture & Science..</u>	<u>Warsaw</u>	Lev Vladimirovitch Rudnev	231 m	757 ft	33	1955
149.	<u>Chicago Title & Trust Building..</u>	<u>Chicago</u>	Kohn Pedersen	230 m	756 ft	50	1992
150.	<u>Bear Stearns World Headquarter..</u>	<u>New York City</u>	Skidmore , O, & M LLP	230 m	755 ft	47	2001
151.	<u>AXA Center</u>	<u>New York City</u>	Edward Larrabee Barnes	229 m	752 ft	54	1986
152.	<u>1251 Avenue of the America..</u>	<u>New York City</u>	Harrison , Abramovitz & Harris	229 m	750 ft	54	1971
153.	<u>One Penn Plaza</u>	<u>New York City</u>	Kahn & Jacobs	229 m	750 ft	57	1972
154.	<u>Two California Plaza</u>	<u>Los Angeles</u>	Arthur Erickson Arch'l. Corp.	229 m	750 ft	52	1992
155.	<u>Prudential Tower</u>	<u>Boston</u>	The Luckman Partnership Inc.	229 m	750 ft	52	1964
156.	<u>Time Warner Center North ..</u>	<u>New York City</u>	Skidmore , O, & M LLP	229 m	750 ft	55	2004
157.	<u>Time Warner Center South ..</u>	<u>New York City</u>	Skidmore , O, & M LLP	229 m	750 ft	55	2004
158.	<u>Gas Company Tower</u>	<u>Los Angeles</u>	Skidmore , O, & M LLP	228 m	749 ft	52	1991
159.	<u>Shanglong Building</u>	<u>Shenzhen</u>	No Entry	228 m	748 ft	50	2004
160.	<u>MLC Centre</u>	<u>Sydney</u>	Harry Seidler & Associates	228 m	748 ft	60	1977
161.	<u>Cosco Tower</u>	<u>Hong Kong</u>	Hsin Yieh Archts. & Asso. Ltd.	228 m	748 ft	53	1998
162.	<u>1100 Louisiana Building</u>	<u>Houston</u>	Skidmore , O, & M LLP	228 m	748 ft	55	1980
163.	<u>Trade Tower</u>	<u>Seoul</u>	Junglim Archts.,Nikken Sekkei Ltd. Hsin Yieh Archts. & Asso.	228 m	748 ft	54	1988
164.	<u>60 Wall Street</u>	<u>New York City</u>	Kevin Roche , John Dinke 100 & Asso.	227 m	745 ft	55	1989
165.	<u>One Astor Plaza</u>	<u>New York City</u>	Kahn & Jacobs	227 m	745 ft	54	1972
166.	<u>Governor Phillip Tower</u>	<u>Sydney</u>	Denton Corker Marshall Pty.	227 m	745 ft	54	1993
167.	<u>Empire Tower</u>	<u>Bangkok</u>	ACT Consultants , Co. Ltd.	227 m	744 ft	62	1999
168.	<u>The Belcher's Tower 5</u>	<u>Hong Kong</u>	Simon Kwan & Asso.Ltd. / Steve Leung Archts. Ltd .	227 m	744 ft	61	2001
169.	<u>The Belcher's Tower 6</u>	<u>Hong Kong</u>	Simon Kwan & Asso.Ltd. / Steve Leung Archts. Ltd .	227 m	744 ft	61	2001
170.	<u>One Liberty Plaza</u>	<u>New York City</u>	Skidmore , O, & M LLP	226 m	743 ft	54	1973
171.	<u>JR Central Hotel Tower</u>	<u>Nagoya</u>	Sakakura Ass. Archts.& Engrs.	226 m	741 ft	53	2000
172.	<u>Swissôtel The Stamford</u>	<u>Singapore</u>	I.M. Pei & Partners	226 m	741 ft	73	1986
173.	<u>20 Exchange Place</u>	<u>New York City</u>	Cross & Cross	226 m	741 ft	57	1931
174.	<u>Reliant Energy Plaza</u>	<u>Houston</u>	Kendall /Heaton Asso., Inc.	226 m	741 ft	47	1974
175.	<u>Two Union Square</u>	<u>Seattle</u>	NBBJ	226 m	740 ft	56	1989
176.	<u>Bell Atlantic Tower</u>	<u>Philadelphia</u>	Kling Lindquist Partnership	225 m	739 ft	55	1991
177.	<u>Three World Financial Center..</u>	<u>New York City</u>	Haines Lundberg Waehler / Cesar Pelli & Asso. Archts.	225 m	739 ft	51	1986
178.	<u>Shenzhen World Trade Center.</u>	<u>Shenzhen</u>	Sense Engineering Services	225 m	738 ft	50	2001

179.	<u>Shinjuku Mitsui Building</u>	<u>Tokyo</u>	Mitsui Fudosan Co. Ltd.	225 m	738 ft	55	1974
180.	<u>Torre Mayor</u>	<u>Mexico City</u>	Zeidler partnership & archts.	225 m	738 ft	55	2003
181.	<u>JP Morgan Chase Tower</u>	<u>Dallas</u>	Skidmore , O, & M LLP	225 m	738 ft	55	1987
182.	<u>ARCO Center</u>	<u>Los Angeles</u>	AC Martin Partners	224 m	735 ft	55	1974
183.	<u>Bourke Place</u>	<u>Melbourne</u>	Godfrey & Spowers Australia Pty . Ltd.	224 m	735 ft	51	1991
184.	<u>Continental Center I</u>	<u>Houston</u>	Morris – Aubry	223 m	732 ft	53	1984
185.	<u>Shinjuku Center Building</u>	<u>Tokyo</u>	Taisei Construction Co. Ltd.	223 m	731 ft	54	1979
186.	<u>Toronto Dominion Bank Twr..</u>	<u>Toronto</u>	Ludwig Mies Van Der Rohe , Fujikowa Conterato LohanAss.	223 m	731 ft	56	1967
187.	<u>Carlton Centre Office Twr..</u>	<u>Johannesburg</u>	Skidmore , O, & M LLP	223 m	730 ft	50	1973
188.	<u>World Finance Centre, Twr..</u>	<u>Shenzhen</u>	Shenzhen Maoye (Group) Company Ltd.	222 m	730 ft	54	2003
189.	<u>Grand 50 Tower</u>	<u>Kaohsiung</u>	C.Y. Lee & Partners	222 m	728 ft	50	1992
190.	<u>Marriott Renaissance Center..</u>	<u>Detroit</u>	John Portman & Associates	221 m	726 ft	73	1977
191.	<u>Times Square Tower</u>	<u>New York City</u>	Skidmore , O, & M LLP	221 m	726 ft	47	2004
192.	<u>Parque Central Torre Este</u>	<u>Caracas</u>	No Entry	221 m	725 ft	56	1979
193.	<u>Parque Central Torre Oest..</u>	<u>Caracas</u>	No Entry	221 m	725 ft	56	1984
194.	<u>777 Tower</u>	<u>Los Angeles</u>	Cesar Pelli & Asso. Archts.	221 m	725 ft	52	1991
195.	<u>Chevron Tower</u>	<u>Houston</u>	Caudill Rowlett Associates	221 m	725 ft	52	1982
196.	<u>Olympia Centre</u>	<u>Chicago</u>	Skidmore , O, & M LLP	221 m	725 ft	63	1986
197.	<u>One Mellon Center</u>	<u>Pittsburgh</u>	Welton Becket Associates	221 m	725 ft	54	1983
198.	<u>Jewelry Trade Center</u>	<u>Bangkok</u>	Urban Archts. & Associates	221 m	724 ft	59	1996
199.	<u>St. Luke's Tower</u>	<u>Tokyo</u>	Nikken Sekkei Ltd.	221 m	724 ft	51	1994
200.	<u>The Belcher's Tower 1</u>	<u>Hong Kong</u>	Steve Leung Archts. / Simon Kwan& Asso. Ltd	221 m	724 ft	63	2000
201	<u>The Belcher's Tower 2</u>	<u>Hong Kong</u>	Steve Leung Archts. / Simon Kwan& Asso. Ltd	221 m	724 ft	63	2000
202	<u>Westin Peachtree Plaza</u>	<u>Atlanta</u>	John Portman & Associates	220 m	723 ft	73	1976

All data researches was updated up to this Oct. , 2004 . 200 world tallest Buildings , excluding former World Trade Center .

CHINESE TEMPLE



JAPANESE PADODA



J A P A N E S E T O R I I



C A M B O D I A N T E M P L E



BURMAN TEMPLE



THAILAND ROYAL PALACE



Southeast Asian Architecture

CHINESE ARCHITECTURE

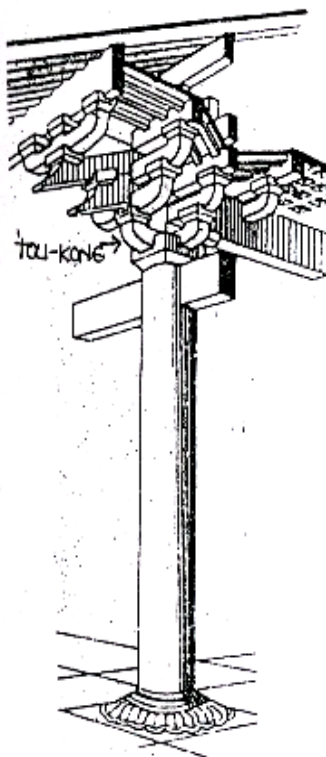
3rd CENTURY B.C. TO PRESENT

ARCHITECTURAL CHARACTERISTIC FEATURES

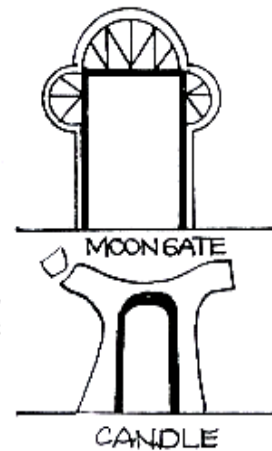
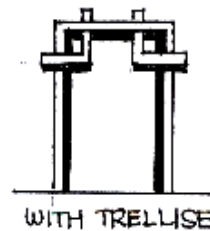
1. Structures were built in timber
2. Chief Structure are "**pai - lou**" or Chinese gateways & pagodas or temples
3. Color plays a vital part in their structure.
4. They use **Pantiles** or "**s-tiles**" for their roofings.
5. They use "**tou-kong**" instead of a capital from their column.
6. Chinese "**Feng Sui**" belief in bldg. construction & layout w/ regards to their spirited god the "**Yin & Yang**", source of good luck & misfortune.
7. Pagoda's height vary from 3 to 13 flr. Usually odd numbers.

FAMOUS BLDG. STRUCTURES :

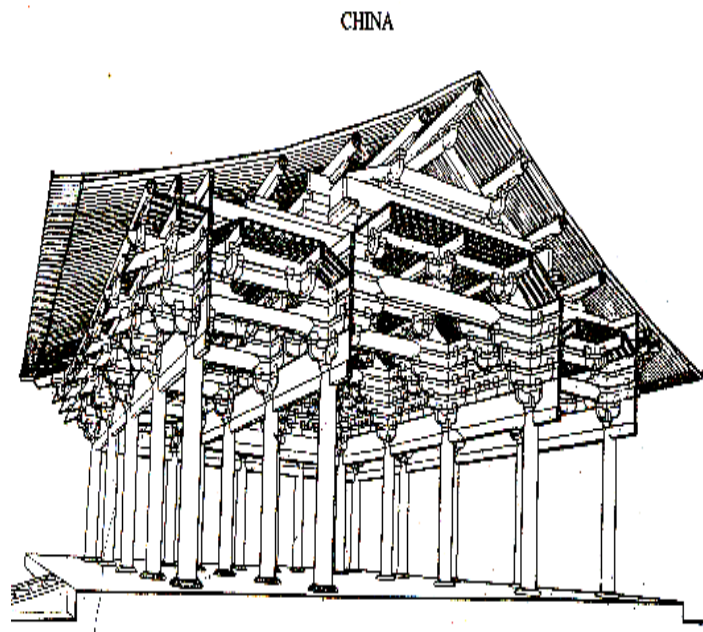
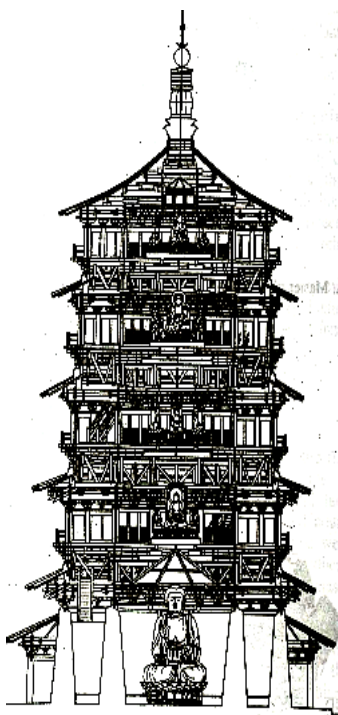
- a. GREAT WALLS OF CHINA by: SHI - HUANG - TI
- b. GREAT ROYAL PALACE by: SHI - HUANG - TI
- c. IMPERIAL PALACE "forbidden city"
- d. TEMPLE OF THE SLEEPING BUDDHA



GATEWAYS IN CHINA
ILLUSTRATIONS :



GATEWAYS IN CHINA ILLUSTRATIONS:



JAPANESE ARCHITECTURE

6 TH CENTURY A.D. TO PRESENT

ARCHITECTURAL CHARACTER

PERIODS OF DEVELOPMENT :

1. **ARCHAIC PERIOD** – Introduced the “**gussho type of construction**” based on the principle of the rigidity of a triangle which formed the fundamental structural system considered resistant to earthquakes.

2. **ASOKA – NARRA PERIOD**

a.) **ASOKA PERIOD** – predominant religion “**Buddhism**”.

e. g. **Buddhist Temple**

b.) **NARRA PERIOD** – introduction of diff. Roof construction:

1. **Kirizuma** – gable roof

2. **Hogio** – pyramidal roof

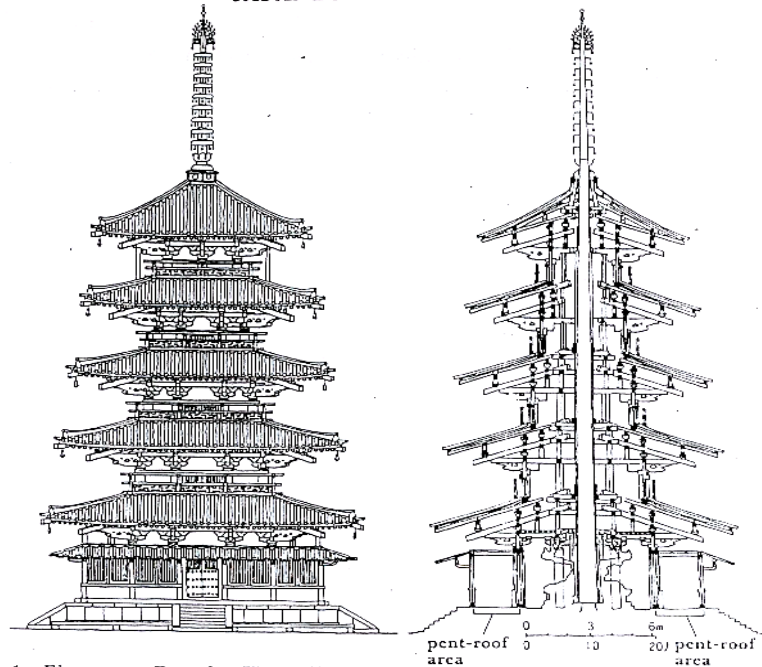
3. **Irimoya** – hip roof

4. **Yosemune** – hip ridge roof

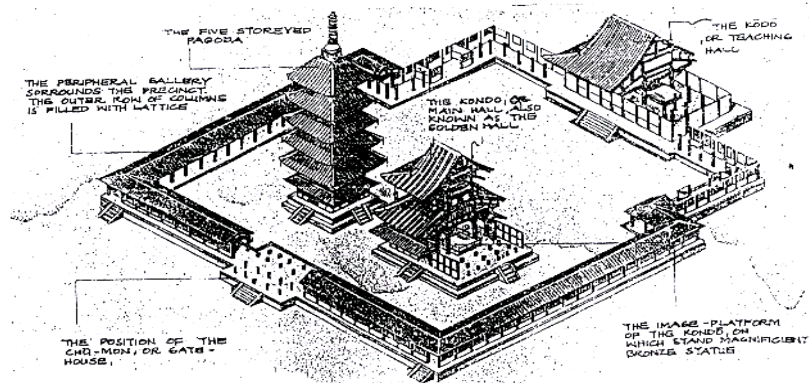
3. **KONIN PERIOD** – time of transition when Japan was engrossed in assimilating imported culture thus little attempt to adopt new architectural forms.

4. **FUJIWARA PERIOD** – Japanese pd. w/c reached their full maturity. One Luxurious feature found in a Japanese mansion is the **Buddhist Altar**.

JAPANESE STRUCTURES



1. Five-story Pagoda, Hōryūji



5. **KOMAKURA – MURAMACHI PERIOD** – decline of Buddhist religion and rise of military order. “**Tea house**” was added to a Japanese mansion.

6. **MAYAMA – YENKO PERIOD** – center of architectural interest was transferred from religious to secular structures.

EXAMPLES:

a.) **TEMPLES** : Buddhist Temple of Horiuji by: Nara & Nikko.

Shinto Shrine or Kamiji – yama in Ise

Kuridini Temple, Kioto

b.) **TOMBS** : Tombs of Leyasu, Nikko

c.) **PALACES** : Imperial Palace, Nara

Mikado's Palace, Kioto

Palaces of the Shoguns

INDIAN ARCHITECTURE

ARCHITECTURAL CHARACTER

Indian Architecture is generally obscured and overwhelmed by a “rhythmical multiplication” of pilasters, comics, mouldings, roofs, finials & an exuberant overgrowth of sculptural decorations. Torana – gateway entrance.

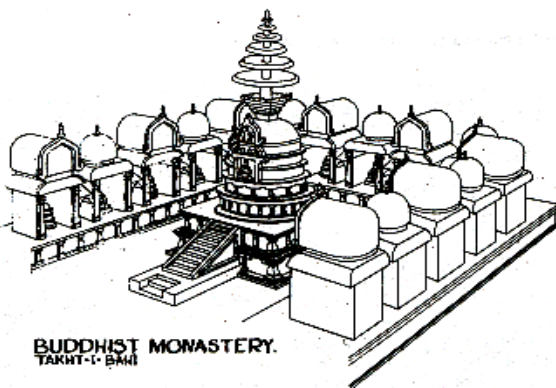
STYLES OF DIFFERENT PERIODS:

- 1. **BUDDHIST ARCHITECTURE**
 - a. Stambha or lath – columns w/c were carved w/ inscriptions crowned by emblems such as elephant or lion, reminiscent of Persipolitan Architecture.
 - b. Stupa or Tope – mounds containing sacred relic called “Dagoba”.
 - c. Chaitya – used as assembly halls w/c were excavated out of a solid rock resulting in the presentation of one external façade.
 - d. Vihara – a monastery designed w/ courts or shrines w/ a central square space surrounded by priest’s chambers.
- 2. **JAIN ARCHITECTURE** – temples were patterned from Buddhist temples.
Temple bldgs. as a virtue ensures happy future state.
- 3. **HINDU / BRAHMAN ARCHITECTURE** – combination of the verdic Cult , Buddhism & Brahmanism.

MONASTERIES



PROTO-ALPA
VIMANA/KUTA
-AEDICULE (DRAYIDA)



BUDDHIST MONASTERY.
TAKHT-I-BAGH



PROTO-GAYAKSHA
-AEDICULE
(NAGARA)

VIHARAS

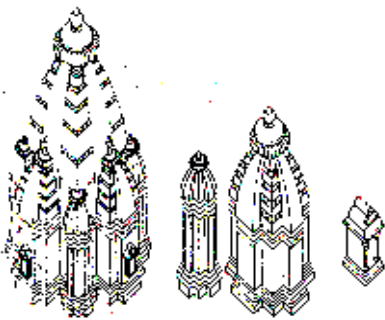
BUCHESVĀRĀ TEMPLE
KORAYANGALA



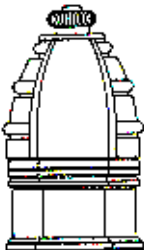
KUTASTAMBHA
(LATINA)



KUTASTAMBA
(PHAMSANA)



EMBEDDED AEDICULAR COMPONENTS
IN A NAGARA (SHEKHARI PRASADA SASBAHU
TEMPLE, KARNI, RAJASTHAN)



LATINA
-AEDICULE

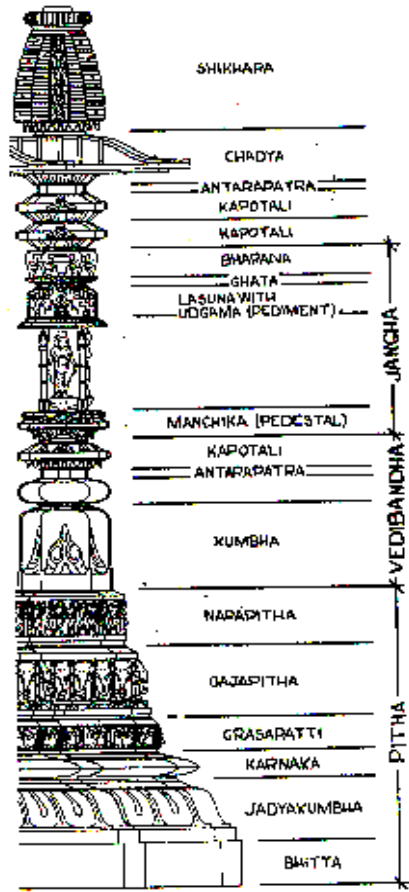


PHAMSANA
AEDICULE



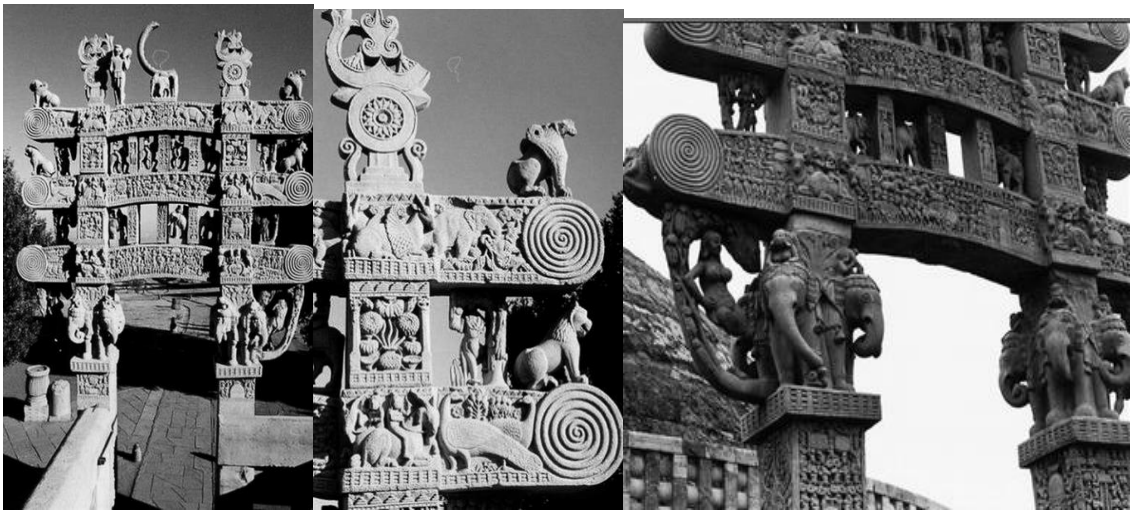
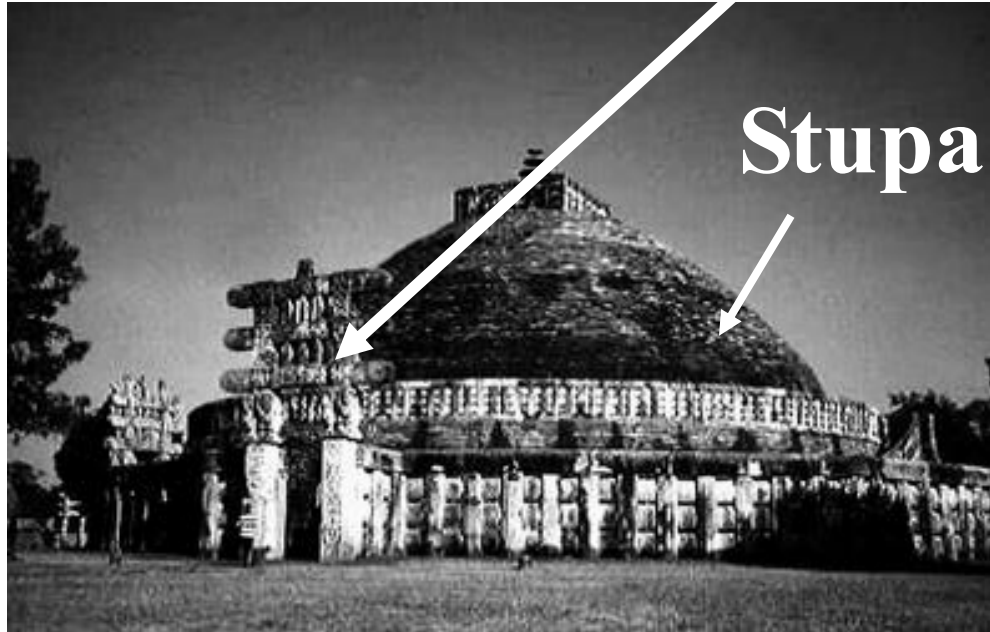
VALABHI
AEDICULE

NAGARA AEDICULAR COMPONENTS



NAGARA MULDINGS IN A KUTASTAMBHA
FROM THE SMALLER SHIVA TEMPLE AT
KIRADU, RAJASTHAN

GATEWAYS IN BUDDHIST COUNTRIES "TORANA"



TORANAS - Gateways in Buddhist Countries

KOREAN ARCHITECTURE

ARCHITECTURAL EXAMPLES :

KOREA was divided into 3 kingdoms ;

1. Koguryo

2. Paekche

3. Shilla

Only a few stone bldgs. including two pagodas of Paekche & one of Shilla Construction ;
also fr. the latter kingdom is the Ch'omsongdae , an astronomical observatory .

e.g. Bulguksa Temple

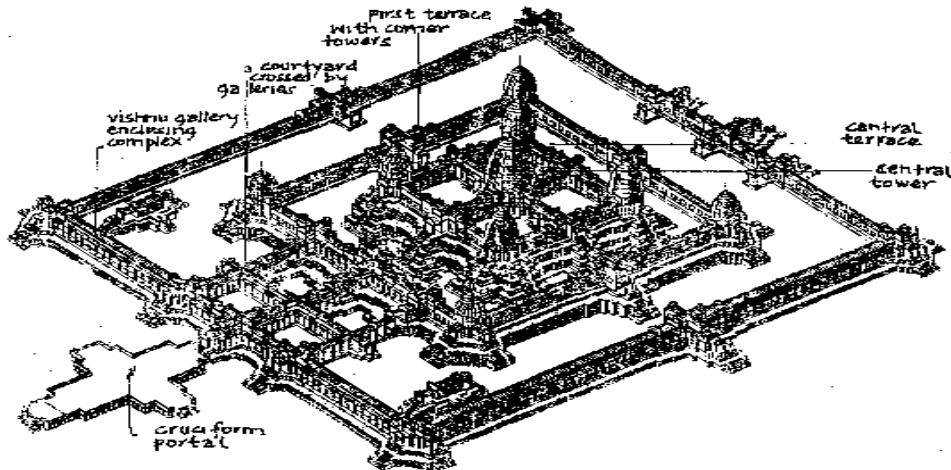


BULGUksA TEMPLE , KOREA

CAMBODIAN ARCHITECTURE

ARCHITECTURAL EXAMPLES:

e. g. ANGKOR WAT – a temples complex erected by **SURYAVARMAN II**. The biggest religious structure in the World. Initially, it was conceived as a temple mountain, symbolizing “meru”.



Thailand Architecture 92

TEMPLE OF ANGKOR WAT “Great Temple Complex” in CAMBODIA FEATURES :

- a.) A wide moat surrounding the enclosure.
- b.) Monumental causeway enclosed by balustrades formed by giants “nagas”, mythical serpents.
- c.) It is made up of stepped terraces.
- d.) The central sanctuary of the temple is on top of a stepped pyramid above the terraces.

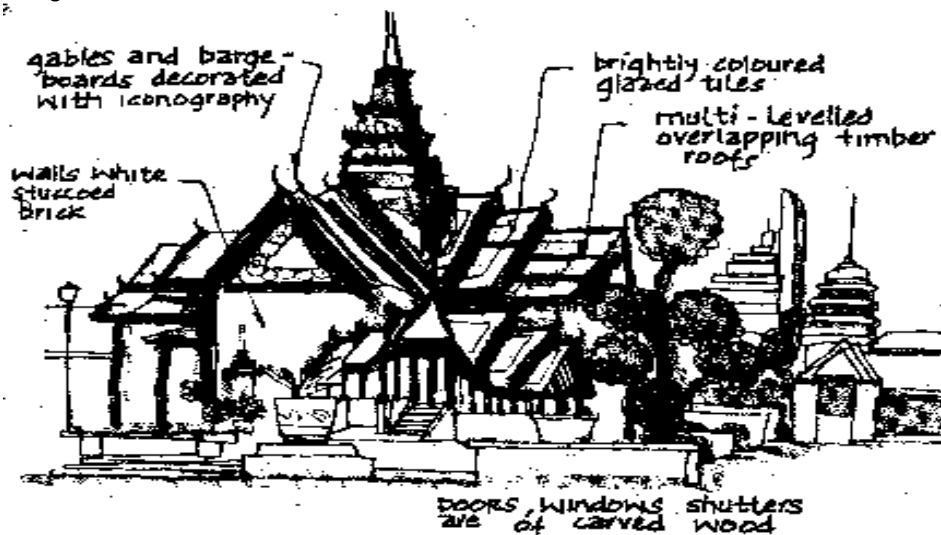
THAILAND ARCHITECTURE

ARCHITECTURAL CHARACTER

Architecture assimilated from Buddhist – Indian Architecture.

ARCHITECTURAL EXAMPLE:

e.g. THRONE ROOM, ROYAL PALACE



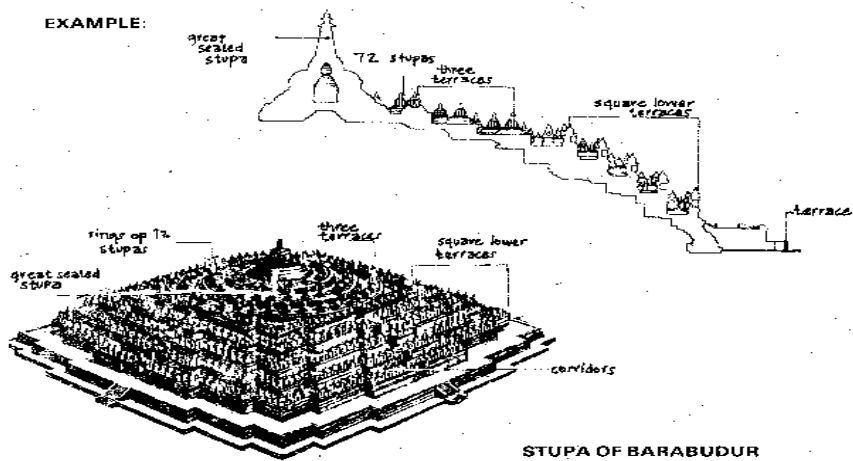


e.g. WAT PRA SRI SARAPET, AYUDHA , THAILAND

INDONESIAN ARCHITECTURE

CHIEF STRUCTURE

BOROBUDUR TEMPLE – largest Buddhist temple in the World.



FEATURES

- a. A central Stupa at the top of nine terraces surrounded by many little stupas.
- b. Narrative carvings are found on the walls of the terraces.



Central Stupa at the top of the nine terraces
surrounded by many little stupas



Philippine Architecture



BARASOAIN CHURCH



QUIAPO CHURCH



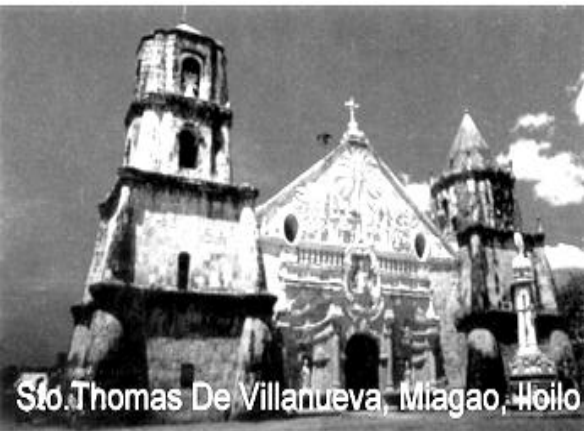
SAN SEBASTIAN CATH.



STO. DOMINGO CHURCH



CHRIST THE KING CHURCH



CULTURAL CENTER OF THE PHIL.



MALACANANG PALACE



FORT SANTIAGO WALL GATE



PAOYAY CHURCH

PHILIPPINE ARCHITECTURE

PHILIPPINE ARCHITECTURE is an admixture of the Muslim, Malayan, Chinese and Japanese, European, Spanish and American influences.

Periods of Development

1. **EARLY PERIOD or PRE-SPANISH ERA**— during this pd. Filipinos established their villages near bodies of water where mostly food were taken from the sea, also from agricultural environment. In both environment houses were not built permanently & therefore light & flexible materials were used.

Earliest type of shelter : **LEAN - TO**, consisted of a simple, single pitched roof resting on an inclined series of rafters made-up of tree branches w/ the end resting on the ground & the other end resting horizontal wooden lintel supported by tree trunks and roofed with grass.

TYPES OF FILIPINO HOUSES :

A. NIPA HUT—Also known as “bahay kubo” supported by stilts or posts, w/ walls made-up of nipa & flooring made-up of sawali & stairs made-up of polished bamboo ladder. Window sliding sashes were made of sawali. Floorings made of bamboo slats w/ spaces in between. It is built from 2.0 to 4.5 mts. Above the ground. Located in lowlands all parts of the country.

B. IFUGAO HOUSE— an enclosed structures resting on four tree trunks as columns. Square in plan, covered by four steeply pitched roof made of thatch. A stair w/ c can be drawn & kept from the ground for protection. The floor ht. is about 1.50 to 2.00 mts can be found in the **mountains of Cordillera**.

C. MARANAO HOUSE— or “Datu House”, a royal house used for political & social ceremonies by the Datu, also an ancestral house for the Datu & his family. It is built from .30 to 2.20 mts. Above the ground. Most imp't. feature is the **wood carvings & the use of colors red, yellow and blue**. Located in the lakeshore of Mindanao.

D. ANCIENT MALAY TAGALA HOUSE— rectangular in plan, raised on wooden post about 2.0 mts. Above the ground w/ an open roofless veranda extended from the whole front of the house. With low partitions, projected window & bamboo slots for floorings.

E. INDONESIAN HOUSE— tree dwelling type of shelter, square in plan supported by four wooden posts & capped w/ a rounded, pyramidal thatch roof. It sunk 1.0 meter into the ground.

F. BADJAO HOUSE— built on stilts right above the water. Its flooring is made of bamboo. One imp't item found in the sala is the mirror not to check the appearance but to indicate the no. of children the family has & to drive away evil spirits.

TYPICAL PARTS OF A BAHAY KUBO :

1. **BULWAGAN**— living rm. / receiving area, w/ a low table called *dulang*.
2. **SILID**— sleeping area w/ “*tampipi*” instead of closets.
3. **GILIR or PAGLUTUAN**— kitchen area containing the ff ;
 - a.) **DAPOGAN or kalan**— cooking apparatus w/ a shoe shape stove.
 - b.) **BANGAHAN or banggera**— place where pots are kept.
 - c.) **BATALAN**— an exposed porch where child- size jars are kept & washing, drinking & bathing took place.
4. **SIIONG**— where farm & fishing tools, pestles, pigs & cattles are kept.
5. **KAMALIG**— a storage house detached from the house where unhawled rice is kept.

2. **SPANISH PERIOD**— two considered imp't. Architectural structure as colonial marks of this Era: the “**bahay na bato**” & **churches**.

EXAMPLES :

1. **BAHAY NA BATO**— a permanent house made of stone for ground flr. & wood for 2nd flr. It was patterned after the stone- constructed, huge antillan house”. It is an improved version of bahay kubo in terms of materials & space allocations.

PARTS from GROUND FLOOR ;

- a.) **ZAGUAN**— where wine carriages & saint's floats are usually kept.
- b.) **CUADRA**— horse table.
- c.) **BODEGA**— a storage room for keeping old furniture & palay bins.
- d.) **ENTRESUELO**— a mezzanine elevated 1.0 mt. Above the ground usually located on the floor of the masters bedroom right underneath his bed.
- e.) **PATIO**— an enclosed courtyard open to the sky & adjacent to Zaguan

SECOND FLOOR ;

- a.) **CEREMONIAL STAIRS**— 1st 3 steps made of stone concrete then succeeding steps made of wood.
- b.) **CAIDA**— an antesala, an all purpose rm. For dining, sewing, & dancing.
- c.) **SALA**— a living room.
- d.) **COMEDOR**— dining room.
- e.) **COCINA**— kitchen w/ c sometimes built separately but connected to the house
- f.) **DISPENSA**— use as a food storage, adjacent to kitchen.
- g.) **BANO or paliguan**— bathroom separately from the toilet.
- h.) **CUARTO**— sleeping area.
- i.) **AZOTEA**— open terrace open to the toilet, use for laundry drying space.
- j.) **BALCON**— overhang balcony, over looking the streets.
- k.) **ALJIBE**— cistern storage of collected rainwater, underneath azotea.



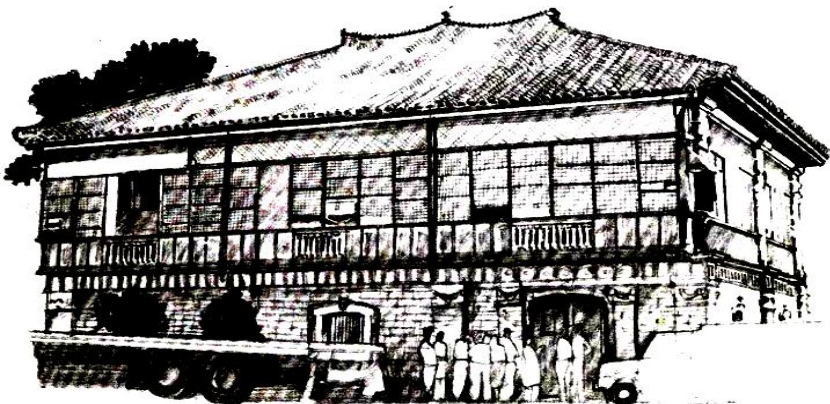
Maranaw



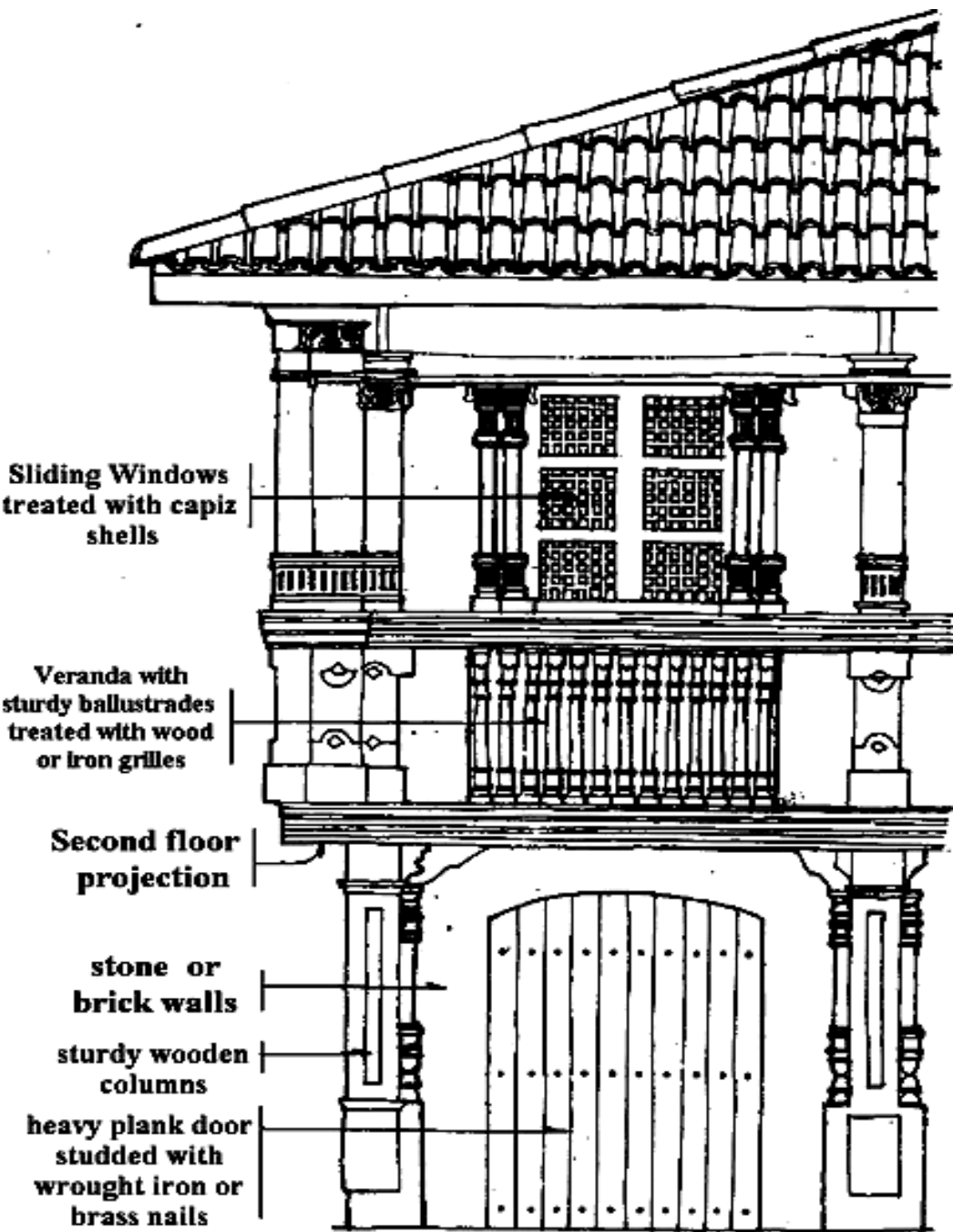
Bahay Kubo



Ifugao



Bahay na Bato - Constantino House



IMPORTANT EXAMPLES OF CHURCHES :

1. **BARASOAIN, BULACAN** – early builders : Augustinians (1859), then restored by: Fr. Miguel de Vera (1894). Combination of Romanesque & Renaissance Arch.
2. **BINONDO CHURCH, MLA.** – early builders : Dominicans (1596), supervision of the dome by : Domingo Cruz y Gonzalez (1781).
3. **LAS PINAS CHURCH, RIZAL** – original design by : Fr. Diego Cerra (1792) and restored by Arch't. Francisco Manosa (1975).
4. **MALATE CHURCH** – early builders : Augustinians (1591), rebuilding the church by : Columbian fathers (1950's).
5. **MANILA CATHEDRAL** – early builders : Dominicans, then converted into cathedral by : Fr. Domingo Salazar. Today, it is known as Basilica of Immaculate Concepcion.
6. **QUIAPO CHURCH** – early builders : Franciscans, then original plan designed by : Juan Nakpil (1933).
7. **SAN AGUSTIN CHURCH, INTRAMUROS** – early builders : Augustinians, then by 1607 it was reconstructed by : Juan Macias.
8. **SAN SEBASTIAN CHURCH** – the 1st “all iron church in the World”(1991), early builders by : Augustinian Recollects then Engr. Don Genaro Palacios y Guerra designed the present
9. **SANTA CRUZ CHURCH, MLA.** - early builders : Jesuits, Fr. Agustin de Mendoza reconstruct the church (1868).
10. **STO. DOMINGO CHURCH** – 1 church by : Bishop Domingo Salazar, then redesigned by : Archt. Jose Ma. Zaragosa.

MILITARY BLDGS :

1. **Fort Santiago**– “Shrine of Freedom” by : Fr. Antonio Seden & Engr. Diego Jordan. Also known as Walled City of Manila.
2. **FORT PILLAR, ZAMBOANGA** by : Fr. Melchor de Vera.
3. **FORT OF ILIGAN** by : Fr. Francisco Ducos.

SCHOOL BLDGS :

- 1.) **COLLEGIO de STO. TOMAS** by : Fr. Roque Roano.
2. **SAN AGUSTIN COLLEGE, ILOILO** by : Joaquin Diaz.
3. **SAN JUAN DE LETRAN COLLEGE** by : Fr. Miguel Narro.

CHURCHES

1. MANILA CATHEDRAL Plaza Roma, Intramuros, Manila

The seat of the Catholic Archdiocese of Manila is presently the 6th cathedral to rise on the site since 1581. Previous structures were destroyed by typhoons, earthquakes, fire, and the last war. It was rebuilt on the second half of the 1950s through the efforts of Architect Fernando Ocampo and Archbishop Rufino J. Santos.

2. SAN AGUSTIN CHURCH , Gen. Luna cor. Real Street, Intramuros, Manila

The oldest stone church in Metro Manila dates back to 1571. An intricately carved door opens to the church. Of great interest are the Baroque pulpit, molave choir stalls, and an 18th century pipe organ.

3. SAN SEBASTIAN CHURCH Plaza del Carmen, Quiapo, Manila

This small jewel-box church is the first all-steel church in the Philippines and in Asia; and the second in the world. Design for the church was finished in 1883 and was prefabricated in Belgium. The completely knocked-down church was shipped backed to the Philippines in 6 ships.

4. OUR LADY OF PEACE AND GOOD VOYAGE Antipolo, Rizal

Antipolo is known to be the home of Our Lady of Peace and Good Voyage.

5. BACLAYON CHURCH Baclayon town, Bohol

Located 6 km fr the city proper. The church is the oldest stone church in the country, built by the Jesuits in 1595.

6. DAUIS CHURCH Daus town, Bohol

Located 3 kilometers from the city proper. This is one of Bohol's beautiful churches, which has retained its Spanish architecture although it has a semi-modern façade.

7. LOBOC CHURCH Loboc town

Located 24 kilometers from Tagbilaran City. The second oldest church in Bohol, built in 1608, with a three-storey convent.

8. LOON CHURCH Loon town

Located 25 kilometers from the city proper. The crowning glory of the Recollect churches in bohól.

9. PAOAY CHURCH Laoag, Ilocos Norte This fortress-like church is probably the most popular in this area.

10. BAGUIO CATHEDRAL Baguio City

Rising above the city skyline are the pinkish hues of the Baguio Cathedral. The cathedral is but one of religious landmarks which dot the city. There is the Bell Temple, north of the city the Maryhurst Seminary with its brilliant gardens, and Lourdes Grotto with its 252 steps to heaven.

11. SHRINE OF THE NUESTRA SEÑORA DE MANAOAG Pangasinan

The shrine of Nuestra Senora of "Apo Baket" is situated atop the hill. The shrine is known all over the Philippines. Devotees frequent the church especially on Saturdays and Sundays..

12. BARASOAIN CHURCH Malolos, Bulacan

The seat of the Revolutionary Congress where the First Filipino Constitution was drafted and ratified.

13. DARAGA CATHOLIC CHURCH Albay

Built in 1773 by Franciscan missionaries. This is highly prized by art enthusiasts because of its rich baroque architecture. Its very huge structure is considered above-standard.



MANAOAG CHURCH, PANGASINAN



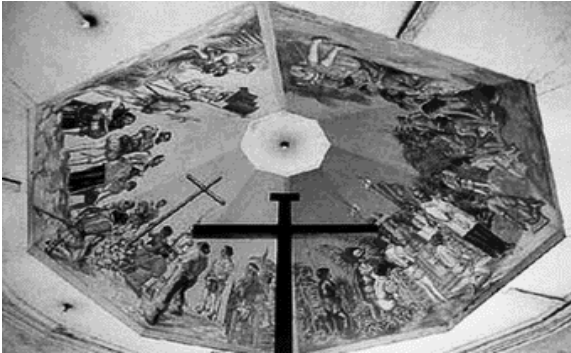
MANILA CATHEDRAL



REDEMPTORIST CHURCH, BACLARAN



IGLESIA NI CRISTO, CENTRAL COMMONWEALTH



MACTAN CHURCH, CEBU



MALACANANG PALACE



Q.C. MEMORIAL



BAGUIO CATHEDRAL



METROPOLITAN THEATER



MANILA POST OFFICE



CULTURAL CENTER OF THE PHIL.



DEPARTMENT OF TOURISM

3. AMERICAN PERIOD In 1900, the Americans came & had established a School for Master Builders, "LICEO de Manila" with 2 Classifications :

- a. MO - P (practical experience of 5 yrs.)
 - b. MO - A (completion of academic training of the Master builder's course) Then graduates fr. Liceo de Mla. established school "Escuela de Ingeniera y Arquitectura. Then other schools that offered the course were ;
1. Mapua Institute of Technology (1925).
 2. University of Sto. Tomas (1930).

3. Adamson University (1931).

First Filipino Archt. Under the American Pd. w/ Academic title MO- A: **Carlos Barreto.**

First Registered Archt. **Tomas Mapua.**

First Arch'l. Society in the Phil. **Academia de Arquitectura y Agrimensura de Filipinas 1902.**

In 1903, it was amended to **Academia de Ingenieria Arquitectura y Agrimensura de ilipinas.**

In 1933, **Juan Nakpil** founded the **Phil. Architect's Society** & become the President.

In 1945, it was amended to **Phil. Institute of Archt's**

Other societies estsblished, Like ;

League of Phil. Archt's (LPA) & Ass. Of Phil. Gov't Archt's. (APGA) &

These two merged to become **United Architects of the Philippines. (UAP)**

First Training school to train to be Maestro De Obras is **ESCUELA PRACTICA y PROFECCIONAL DE ARTES OFICIO DE MANILA.**

2 Filipino Archt's. brought to Europe to study Mester Builder Course;

1. Felix Roxas y Arroyo

2. Diego Hervas

FILIPINO ARCHITECTS 60's TO 80's

1. ANTONIO , PABLO SEBERO

FAMOUS WORKS :

- FEU Admi, Science Bldg.7 Main Bldg.
- Philippine National Bank
- Manila Railroad Co.,
- IDEAL Theater , Rizal Ave.
- Bel Air Apartments , Roxas Blvd.
- Manila Polo Club
- Capt. Luis Gonzaga Bldg.,Rizal Ave., & Carriedo
- Galaxy Theater , Rizal Ave.,

2. ARANETA , LUIS MARIA ZARAGOSA

FAMOUS WORKS:

- Times Theater , Quezon Blvd.,Mla.
- Manila Doctor's Hospital , U.N. Ave.
- Makati Medical Center
- Santa Catalina College , Legarda , Mla.

3. ARELLANO , JUAN DE GUZMAN

FAMOUS WORKS:

- Legislative Bldg.(Now Housing Senate & Natl.Museum
- Post Office Bldg.
- Villamor Hall at the U.P. Taft Ave.
- Metropolitan Theater (Restored by Otilio Arellano)
- Landscape of Padre Burgos Ave.
- Landscape of Harrison Park
- North and South Port Areas
- Dewey Bldd. (Now roxas Blvd.)
- Malacanang Grounds

4. ARELLANO , OTILLO A.

FAMOUS WORKS:

- NBI Nat'l. Bureau of Investigation , Taft Ave.
- Sining Kayumanggi at the Mehan Gardens
- Palacio del Gobernador , Intramuros
- Restoration of Metropolitan Theater
- PSBA , Aurora Blvd., Q.C.
- RCBC Bldg., Buendia Ave., Makati
- San Juan Municipal Ctr,N.Domingo St., San Juan

5. ARGUELLES , CARLOS D.

FAMOUS WORKS:

- Ateneo de Manila Campus, Loyola Heights , Q.C.
- Philam Life Building , U.N. Ave.
- Manila Pavilion (former Mla.Hilton)U.N.Ave., Mla.
- Holiday Inn , Roxas Blvd.
- Philippine Nat'l. Bank , Escolta Mla.
- Development Bank of the Phil. ,Makati
- Chronicle Broadcasting Network Studio , Q.C.
- 600 Units Philam Life Homes , Q.C.

11. LOCSIN LEANDRO VALENCIA

FAMOUS WORKS:

- Holy Sacrifice Chapel , U.P. Diliman Campus
- Cultural Cener of the Philippines 1969
- Folk Arts Center 1974
- PHILCITE 1976
- PICC 1976
- Phil. Plaza Hotel 1976
- Hyatt Regency Hotel , Roxas Blvd.

6. BURNHAM , DANIEL HUDSON

FAMOUS WORKS:

- Baguio City Planning
- Burnham Park , Baguio City
- Manila Hotel Landscapie
- Army-Navy Club Landscapings
- Phil. General Hospital Landscape
- Post Office Landscape

7. CALMA , LORENZO LICAD

FAMOUS WORKS:

- Interior of Dev't. Bank of the Phils., Buendia
- Interior of Phil. Nat'l. Bank , Escolta, Mla
- Interior of Silahis Hotel , Roxas Blvd.
- Intr. of Puerto Azul & Beach Resort,Ternate, Cavite
- Interior of Benguet Center , Mandaluyong City
- Intr. of Mla.Midtown Ramada Hote , Pedro Gil Mla.
- Int.of Dev't. Academy of the Phils., Tagaytay City

8. CONCIO , CESAR HOMERO

FAMOUS WORKS:

- U.P. Diliman 's Palma & Melchor Halls
- Protestant Chapel & Fellowship Center , U.P.
- U.P College of Forestry Bldg. , Los Banos
- Insular Life Idg. , Makati
- Childrens memorial Hospital , Q.c.
- Mother of Perpetual Help , Baclaran
- Union Church of Manila

9. COSCOLLUELLA , WILLIAM VARGAS

Famous Works

- Robinsons commercial Complex , Pasig
- 26 Storey Ayala Twin Towers , Makati
- 32 Storey One Beverly Place in Greenhills
- 30 Storey Wackwack Twin Towers , Mandaluyong
- The Atrium , Makati
- Quezon City Sports Club , E. Rodriguez
- Centro Escolar Univ. Complex , Malolos , Bulacan
- SM City , North Edsa & Sm in Cebu

10. DE CASTRO , CRESENCIANO CRUZ

Famous works

- Shoemart Bldgs. In Manila
- Mindanao State University Bldg., Marawi City
- Central Luzon State University Bldgs, Nueva Ecija
- Nat'l. Science Dev't. Bldg. Complex , Taguig Mla.
- Atomic Research Center Complex ,Q.C
- Asian Dev't.Bank (Now Dep't.of Foreign Affairs,P.C.)
- Colgate Palmolive Phils. ,Inc.
- Proj.in,Guam, Taipei,Taiwan Vietnam & Saudi

20. PEREZ , DOLLY QUIMBO

FAMOUS WORKS:

- Childrens Park in UP , Diliman
- Taal Vista Lodge in Tagaytay
- Meralco Compound , Pasig
- Libingan ng mga bayani , Fort Bonifacio , Mkti
- Manila Polo Club , Mkti
- Mirador Shrine , Baguio City
- Gateway Business park , Cavite

- h.Makati Stock Exchange Bldg. 1971
- i. Ayala Museum , Makati 1974
- j.Mandarin Oriental Hotel , Makati 1976
- k.Ninoy Aquino International Airport 1979
- l. National Arts Center , Makiling , Los Banos 1976
- m.Istana Nurul Iman (Palalce of Sultan of Brunei)

12. LUNA de SAN PEDRO , ANDRES

- FAMOUS WORKS :
- a.Legarda Elementary School
 - b.Malacanang Palalce , San Miguel , Mla.
 - c. San Vicente de Paul Chapel , Sn Marcelino ,Mla.

13. MANOSA , FRANCISCO TRONQUED

- FAMOUS WORKS:
- a.San Miguel Corporation Head Office,Mandaluyong
 - b.Tahanang Filipino at the CCP Complex Roxas blvd.
 - c.Shrine of Our Lady Queen of Peace , EDSA
 - d.Mary Imaculate Parish Church, Las Pinas , Rizal
 - e .Quezon Memorial Circle , Q.C.
 - f. Landscaping of Corregidor Island

14. MAPUA , TOMAS BAUTISTA

- FAMOUS WORKS:
- a. MIT
 - b.De la Salle university Bldgs., Taft
 - c. Nurse's home at the PGH.,Taft
 - d.J.Mapua Memorial hall , Intramuros

15. MENDOZA , FELIPE MARCELINO

- FAMOUS WORKS:
- a.Batasang Pambansa Bldgs., Q.C.
 - b.Dev't. Academy of the Phils. , pages
 - c.RCBC Bldg., 23 Branches
 - d.PCI Bank T.M. Kalaw , Mla.
 - e.Far Eastern University Hospital , Morayta , Mla.
 - g.San Jose Seminary Bldg., Ateneo de Mla.Univ.Q.C.
 - h.Asumption School bldgs., Antipolo , Rizal
 - i. Mormon Temple , Green Meadows , Q.C.
 - j. Bldgs., at the Rice Research institute , Los Banos
 - k.Glorietta , San Fernando , Pampanga
 - l. 250 Room Suehiro Hotel , GUAM
 - m.Safeway Supermarket , U.S.A.

16. NAKPIL , ANGEL E. SANCHO

- FAMOUS WORKS:
- a. Nat'l. press Club Bldg., Magallanes Drive , Mla.
 - b. Former Head Office of PLDT , Makati
 - c. Picache Bldg.Plaza Miranda Qpo.(1st HighRise Bldg)f.
 - d. Lopez Museum Bldg., Pasay

17. NAKPIL , JUAN FELIPE de JESUS

- FAMOUS WORKS:
- a. Quezon Institute Administration , E. Rodriguez
 - b. Quiapo Church
 - c. Rufino Bdg. Ayala Ave.
 - d.Commercial bank & Trust Bldg. Quezon Blvd.

18. OCAMPO , FERNANDO HIZON

- FAMOUS WORKS:
- a. Manila Metropolitan Cathedral
 - b. Cathl. of Immaculate Concepcion , San Fernando , Pampanga
 - c. Church of Our lady of Most Holy Rosary, Angeles City
 - d. Central Seminary Bldg. U.S.T. Campus

21. ROXAS , FELIX ARROYO

- FAMOUS WORKS :
- a. Renovation of Sto. Domingo Church
 - b. Jesuit Church of San Ignacio , Intramuros
 - c. Reconstructed Parish Church of Bacoor Cavite
 - d. Dominican Church , England 1750

22. RUANO , ROQUE

- FAMOUS WORKS
- a. UST Main bldg
 - b. Dominican College , Lingayen
 - c. Church of our lady of Manaoag
 - d. Sta. Teresita Church , Yokohama , Japan

23. SANTOS , ILDEFONSO PAEZ

- FAMOUS WORKS:
- a. Batulao Village Club , Batangas
 - b .Caliraya Lake Resort , Laguna
 - c. Eternal Gardens , Caloocan City
 - d. Loyola Memorial Park , Mla., & Paranaque
 - e. Rizal Park , Manila

24. SANTOS –VIOLA , CARLOS ANTONIO

- FAMOUS WORKS
- a. Iglesia ni Cristo Structures
 - b. Our Lady of Lourdes , Q.C.
 - c. Franciscan Church of Singalong , Mandaluyong
 - d. Nuestra Senora de Guia , Ermita , Mla.

25. SINDIONG , ANTONIO

- FAMOUS WORKS
- a. SM Megamall , Mandaluyong
 - b. Harrison Plaza Shopping Ctr. Manila
 - c. Farmers Plaza Shopping Center , Cubao
 - d. ALI MALL II , Cubao
 - e. 43- Storey Pacific Plaza Condominium , Mkti
 - f. 28 Storey La Metropole Condominium , Makati
 - g. 22- Storey Metro Bank Plaza , Makati
 - h. 20- Storey Cebu Plaza , Hotel , Cebu

26.TOLEDO , ANTONIO MANALAC

- FAMOUS WORKS:
- a. Phil. Normal School Womens Dormitory (together with William Parsons)
 - b. Manila City Hall
 - c. Department of Tourism
 - d. Department of Finance
 - e. UP Padre Faura Campus
 - f. UP University Library , Padre Faura

19. PARSONS , WILLIAM E.

- FAMOUS WORKS:
- a. Baguio Plan together w/ Daniel Burnham
 - b. Phil. General Hospital
 - c. Philippine Normal Schoo & Womens Dormitory
 - d. Manila Hotel , Roxas Blvd
 - e. Army-Navy Club , Roxas Blvd.
 - f. YMCA Bldg.
 - g. First UP Bldg., 1 Taft and Padre Faura

TALLEST BLDGS. IN THE PHILIPPINES

Tallest Building	City	Ht	Flrs	Year	ARCHITECTS
1. <u>PBCOM Tower</u>	<u>Makati</u>	259 m	55	2000	SKIDMORE , OWINGS & MERILL / G.F. & PARTNERS
2. <u>G.T. International Tower</u>	<u>Makati</u>	217 m	43	2001	KOHN PEDERSEN FOX ASS. /RECIO + CASAS Archts.
3. <u>Petron Megaplaza</u>	<u>Makati</u>	210 m	45	1998	SKIDMORE , OWINGS & MERILL
4. <u>1322 Roxas Boulevard</u>	<u>Manila</u>	203 m	57	2002	ARCHITECTURE INT'L. / G.F. & PARTNERS
5. <u>BSA Tower 1</u>	<u>Mandal.</u>	197 m	51	2000	NO ENTRY
6. <u>BSA Tower 2</u>	<u>Mandal.</u>	197 m	51	2000	NO ENTRY
7. <u>One San Miguel Avenue</u>	<u>Pasig</u>	183 m	54	2001	PHILIP RECTO
8. <u>LKG Tower</u>	<u>Makati</u>	180 m	43	1998	KOHN PEDERSEN FOX ASS../RECIO + CASAS Archts

9.	<u>Pacific Plaza Tower 1</u>	<u>Makati</u>	179 m	52	1999	RECIO + CASAS Archts
10.	<u>Pacific Plaza Tower 2</u>	<u>Makati</u>	179 m	52	1999	RECIO + CASAS Archts
11.	<u>Atlanta Centre</u>	<u>San Juan</u>	179 m	37	--	ATLANTA LAND CORPORATION
12.	<u>Robinson's Equitable Tower</u>	<u>Pasig</u>	175 m	45	1997	HELLMUTH , OBATA & KASSABAUM
13.	<u>Roxas Triangle Tower I</u>	<u>Makati</u>	174 m	51	2000	SOM / PIMENTEL RODRIGUEZ SIMBULAN & PARTNS.
14.	<u>J.G. Summit</u>	<u>Makati</u>	174 m	38	2001	HELLMUTH , OBATA & KASSABAUM
15.	<u>Enterprise Centre Tower I</u>	<u>Makati</u>	172 m	40	1998	WONG TUNG & PARTNERS
16.	<u>Ayala Tower 1</u>	<u>Makati</u>	160 m	35	1996	SKIDMORE , OWINGS & MERILL
17.	<u>Urbanbank Plaza</u>	<u>Makati</u>	155 m	38	1998	R . VILLAROSA
18.	One Legazpi Park	Makati	150 m	45	2006	ARCHITECTURE INTERNATIONAL
19.	<u>BSA Tower Makati</u>	<u>Makati</u>	154 m	37	1998	NO ENTRY
20.	<u>The World Centre</u>	<u>Makati</u>	152 m	30	1995	SKIDMORE , OWINGS & MERILL
21.	<u>The Peak</u>	<u>Makati</u>	138 m	38	1991	NO ENTRY
22.	<u>Robinson Place Tower I</u>	<u>Manila</u>	137 m	38	--	Robinsons Land Corp. / Engr. R.S. Caparros & Ass.
23.	<u>The Oxford Suites</u>	<u>Makati</u>	130 m	30	1995	NO ENTRY
24.	<u>Essensa East</u>	<u>Makati</u>	125 m	30	2001	I.M. PEI , COBB , FREED & PARTNERS
25.	CITIBANK	Makati	119m	33	1993	PIMENTEL RODRIGUEZ SIMBULAN & PARTNERS

PHILOSOPHIES & FAMOUS WORKS OF FILIPINO ARCH'TS :

A. Leandro Locsin : **"Creating Architecture that is both modern & undeniably Filipino."**

Famous Works :

- | | |
|---|-------------------------------------|
| 1. <i>Cultural Center of the Philippines</i> | 11. <i>PLDT Bldg.</i> |
| 2. <i>Makati Stock Exchange</i> | 12. <i>NPC Center</i> |
| 3. <i>Manila Mandarin Hotel</i> | 13. <i>Greenbelt Square</i> |
| 4. <i>Manila Hotel</i> | 14. <i>Manila Intercon Hotel</i> |
| 5. <i>Benguet Center</i> | 15. <i>Ayala Museum</i> |
| 6. <i>Davao Insular Hotel</i> | 16. <i>Locsin Bldg.</i> |
| 7. <i>Philippine Plaza Hotel</i> | 17. <i>Church of St. Andrew</i> |
| 8. <i>Ninoy International Airport</i> | 18. <i>Chapel of Holy Sacrifice</i> |
| 9. <i>Phil. Int'l. Convention Center</i> | 19. <i>Folk Arts Theater</i> |
| 10. <i>Palace of Brunei "ISTANA NURUL IMAN"</i> | |

B. Francisco 'Bobby' Manosa:"Architecture must respond to local conditions."The Philosophy started out w/ the "Nipa Hut". Local conditions include, the climate, the materials on hand, the techniques & the budget available.

Famous Works :

1. *San Miguel Head Office near Megamall*
2. *Coconut Palace known as "Tahanang Pilipino" at CCP Complex*
3. *Las Pinas Bamboo Church*
4. *14 Station LRT Metrorail Transit*
5. *Our Lady of peace shrine at Edsa*
6. *Moonwalk Church in Las Pinas*
7. *National Eucharistic Congress Altar*

C. Gilbert Yu : **"A Pragmatic Approach to Architecture"**

His famous equations : $0 + 0 + 0 = 100$

First 0 = The land owner who owns property but idle & undeveloped.

Second 0 = The man who has money in the bank but inflation is eroding its real worth faster than the interest it accrues.

Third 0 = The Architect w/o land and money and still considered = 0.

Add up all the 0's and it =to Perfect 100 (Land Owner, The Financier & the Archt.).

Famous works :

1. *Manila Stock Exchange Center*
2. *Golden Bay Condominium, Manila*
3. *Chateau De Balle I and II, Ortigas & Roxas Blvd.*
4. *Landmark Shopping Center, Makati*
5. *Ever – Gotesco Grand Central, Caloocan*
6. *28 Storey Asian Trade Center Tower, Greenhills, Ortigas*
7. *Orient Pearl Plaza, Manila*
8. *New City Plaza, Manila*
9. *Y.E.T. Bldg., Manila*
10. *Gaisano Country Mall, Cebu City*
11. *SM Manila*
12. *Manila Diamond Hotel*

D. Ramon S. Licup : “ **Good Architecture is not based on Design but on the bldg’s. function.**”**Good Architecture is not based on design but on the bldg’s. function, the environment, the people’s needs, the budget, & the climate.**

Famous works :

1. Garden Island, N. Domingo, San Juan
2. Rainbow Garden, Ortigas
3. Bayview Park Plaza Hotel, Roxas Blvd.
4. Golden Bay Condominium, Manila
5. Princeville Condominium, Ortigas
6. Verde De Pasadena Condominium, Ortigas
7. Knots Realty Town House, San Juan
8. Makati Palace
9. San Juan Regency
10. Pasig Tri Condominium

E. Felipe Mendoza : “ **He Makes the fullest possible use of natural light & ventallation.**”

Famous works :

1. Batasang Pambansa Bldg. in Q.C.
2. Development Academy of the Phil. Bldg., Pasig, Rizal
3. RCBC Bldg., Buendia Makati, & 23 other branches
4. PCI Bldg., T.M. Kalaw, Mla.
5. National Library, T.M. Kalaw, Mla.
6. Feu Hospital, Nicanor Reyes, Morayta, Mla.
7. The Assumption School Bldg. , Antipolo Rizal
8. Mormon Temple, Green Meadows, Q.C.
9. San Jose Seminary Bldg. , Ateneo De Mla. University Campus, Q.C.
10. Library & Science Center of Xavier University, Cagayan De Oro
11. 7 New Bldgs. For the Int’l. Rice Research Institute, Los Banos (1976-1991)
12. National Government Center Constitution Hills, Q.C.
13. Central Mindanao University, Museum Bukidnon
14. Mariano Marcos Memorial College of Science & Technology, Batac, Ilocos Norte
15. 250 Rooms Suehiro Hotel & Safeway Market, Guam

F. William Vargas Coscolluela : “ **More on Vertical Approach.**”

Famous works :

1. Robinsons Commercial Complex, Ortigas Q.C.
2. 32 Storey One Palace , San Juan, Mla.
3. 30 Storey Wackwack Twin Towers, Mandaluyong City
4. Quezon City Sports Club, E. Rodriguez, Q.C.
5. Atrium in Makati
6. 22 Hectare Tutuban Station, Divisoria

G. Ceasar Homero Concio : “ **The structure must be well oriented.**”

Famous works :

1. Diliman’s Palma & Melchor Hills, U.P. DILIMAN
2. U.P. College of Forestry Bldg.
3. Children’s Memorial Hospital, Q.C.

H. Claude Edwin Andrews : “ **Office bldgs. are no longer simply spaces but are now termed” Intelligent Bldgs.”**

Famous work :

1. 46 Storey Palladium Summit, Mandaluyong City

I. Ceasar Yatco, & Joey Rufino – chairman of URDEC Properties Corporation : “ **Creativity & Innovation in Real Estate.**”

Famous works :

1. Makati Cinema Square Tower
2. Rufino Tower, Makati
3. Golden Lion Townhouse, Mla.
4. Bel Air Place, Makati
5. Cuevas Tower Condominium, Mla.
6. Taft Office Center, Mla.
7. Crowne Place, Mla.
8. Azalean Row Center, Mla.
9. EGI- Rufino Plaza, Buendia corner. Taft Ave. , Mla

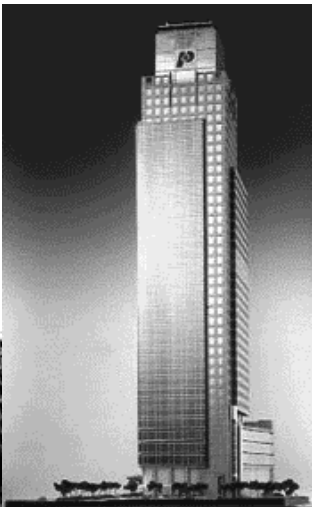
J. Ley Construction & Development Corporation:“**Laying the past, shaping the present, & framing the future.**”**Mr. Manuel & Janet Ley & Mr. Richard Hsu (Pres. & V. Pres.)**

Famous works :

- | | |
|---|---|
| 1. Twin Tektite Towers, Ortigas | 3. KP Tower Luxury Condominium, Divisoria |
| 2. 5- Star Shangri – la Hotel, Edsa Plaza | 4. Isetann Commercial Complex, Recto |
| | 5. Gotesco Regency Twin Towers, Malate |



PBCOM , Mkti



PETRON MEGA PLAZA , Mkti



G.T. Int'l. Tower , Mkti



ONE SAN MIGUEL TWR.



MLA. DIAMOND HOTEL



GARDEN ISLAND , San Juan



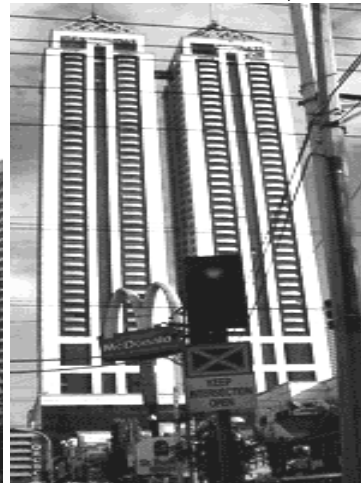
LKG TOWER , Mkti.



PACIFIC PLAZA



ROBINSONS TWR.



BSA TOWER



ROCKWELL MAKATI



1322 ROXAS BLVD.BLDG.



AYALA TOWER



ESSENSA EAST MKTI



TAIPAN PLACE, Ortigas

DISCOVERY Ctr. , Ortigas

RUFINO TOWER , MAKATI



RCBC YUCHENCO BLDG.

TEKTITE TOWERS

SHANGRI - LA , MANDALUYONG



BAYVIEW PARK HOTEL

METROPOLITAN MUSEUM



SM MEGAMALL , ORTIGAS CENTER

SHANGRI-LA , MANDALUYONG