

Brief History of the Roman Empire

- Establishment of Rome in 753 BC (or 625 BC)
- Etruscan domination of Rome (615-509 BC)
- Roman Republic (510 BC to 23 BC)
- The word 'Republic' itself comes from the Latin (the language of the Romans) words '*res publica*' which mean 'public matters' or 'matters of state'.

Social System

- Rome knew four classes of people.
- The lowest class were the slaves. They were owned by other people. They had no rights at all.
- The next class were the *plebeians*. They were free people. But they had little say at all.
- The second highest class were the *equestrians* (sometimes they are called the 'knights'). Their name means the 'riders', as they were given a horse to ride if they were called to fight for Rome. To be an equestrian you had to be rich.
- The highest class were the nobles of Rome. They were called 'patricians'. All the real power in Rome lay with them.

Emperors of the Roman Empire

-Imperial Period (27BC-395AD)

Augustus: Rome's first emperor. He also added many territories to the empire.

Nero: He was insane. He murdered his mother and his wife and threw thousands of Christians to the lions.

Titus: Before he was emperor he destroyed the great Jewish temple of Solomon in Jerusalem.

Trajan: He was a great conqueror. Under his rule the empire reached its greatest extent.

Diocletian: He split the empire into two pieces - a western and an eastern empire.

-Imperial Period (27BC-395AD)

Hadrian: He built 'Hadrian's Wall' in the north of Britain to shield the province from the northern barbarians.

Constantine: He was the first Christian emperor. He united the empire again chose his capital to be the small town Byzantium, which he renamed Constantinople.

-Etruscan Influence in
Northern Italy and in
Rome, too

-Etruscan domination of
Rome (615-509 BC)

-Multiplicity of culture and
society

The Etruscan and the Greek Influences

Model of Temple of Juno Sospita, Lanuvium, 5th Century BC

Etruscan architecture

- The Etruscans spoke a non-Indo-European language
- Its language has not yet been deciphered. Their ethnic origin is unclear.
- They might have come from Asia Minor.
- Rome was dominated by Etruscans during the archaic period (750-509 BC)
- They established themselves on the right bank of the Tiber.

Etruscan architecture

-In the cities which made up the Etruscan confederation the first building given monumental form was the temple.

-Characteristic features of Etruscan temples were a high podium and constructed of rough brick.

-The temple had a deep colonnaded portico, with often two and sometimes three rows of columns. -

The portico is believed to have had a wooden entablature protected by an elaborate terracotta facing.

Etruscan architecture

- The plan was almost square.
- The temple was never peripteral as were Greek temples.
- A colonnade was never attached to the rear of a temple and rarely to the sides.
- Greek temples had their short sides resemble each other, the Etruscan temple rarely did that.
- This strong axial directionality was carried into the Roman temple architecture.
- The cella was often divided into three parallel rooms, consecrated to a divine trinity.
- it was approached frontally by a flight of steps, axial disposition, closed back wall and strong frontality, often made more emphatic by a large columnar pronaos.

Tomb of the Montagnola, Quinto Fiorentino, 600 BC

Etruscan tomb

- This tomb was dated 600 BC.
- An access passage (dromos) leads to an oblong, corbel-vaulted antechamber
- The antechamber has two small side rooms
- at the end there is a circular room.
- Its corbel vault is propped up by a central pillar

Etruscan tomb, known as The
Doric Columns, Cerveteri (Caere)

Etruscan tomb, known as Doric Columns,
Cerveteri (Caere)

-Shows the influence of Greek architecture on
Etruscan architecture

-the animated arris flutings have been reduced
to a few flat surfaces

-the echinus, a very thick square slab, is very
similar to Greek capitals of the early 6th century
BC.

Greek cities in southern Italy; founded ca. 700BC

- Greek colonial cities in the southern part of Italy
- However, in the case of Rome, it was through Rome's military involvement with Asia Minor and Greece around 146 BC
- Greek architects were brought to Rome and had them build in Greek manners.
- From Greek architecture, it adopted the order system.
- The Romans added a new order Composite Order.
- The Composite Order has a capital which fuses Ionic and Corinthian characteristics.

Newly Established Features of Roman Architecture

1. The Roman Composite Order

2. The Pier

-A pillar, generally rectangular in cross section, supporting an arch or roof

-The pier became more commonly used as a structural support.

-It was used for utilitarian structures such as bridge and aqueducts

-The pier was developed into an applied articulation of half columns or pilasters.

-They were used as the basic elevational component of theatres, amphitheatres, honorific arches and gateways.

-Moreover, rows of piers could be used for the vaults of cisterns, the substructures of theatres and amphitheatre, and the platforms of villas.

3. The marrying of the traditional orders to the pier and arch/ vault constructional system

Newly Established Features of Roman Architecture

4. Sculptural Wall surfaces

-the peristyle, a rectangular court lined with columns, was used in a variety of constructions ranging from the large paved city forum to the public courtyards attached to entertainment complexes, and to the gardens of modest house.

-With a roof carried from the columns to the perimeter walls, the peristyle was adaptable to both moderate and hot climates and was soon used throughout the Empire.)

5. The use of colonnade in urban streetscape

–not only for stage buildings of theatres but also for the showpiece facades of fountain buildings and bath complexes

-development in the application of the traditional colonnades, increasingly used to line streets, while ever more elaborate column compositions were employed not only for stage buildings of theatres but also for the showpiece facades of fountain buildings and bath complexes.

Peristyle courtyard

Newly Established Features of Roman Architecture

6. The peristyle courtyard

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Newly Established Features of Roman Architecture

7. Multi-vaulting system

-Roman architecture created new structural systems such as the arch and the vault Roman builders were capable of the most remarkable feats of engineering, Equipped with only the simplest machines (e.g. the multi-block hoist), and with power sources limited to man, beast and the elements, the results are astonishing.

-Among the most impressive achievements were the aqueducts, tunnels and the immense moles for ports projecting from featureless shores

-Rome was noted for its engineering abilities and was the undisputed leader in its utilization.

-What distinguished Roman architecture was the exploitation of the arch and the subsequent development of the barrel vault and the dome.

-Both the arch and the vault had already been invented in Assyria and Babylon, but were further developed in Roman architecture through the invention of concrete.

-The Greek knew the arcuated system but did without, probably because of architectural conservatism

Pont du Gard, near Nimes (end of the 1st century BC)

-This bridge which is constructed over the river Gard, is 275 meters (900 feet) long and 49 meters (160 feet) high

-It was part of an aqueduct nearly 50 kilometers (30 miles) long which supplied Nimes with water.

-On its first level it carries a road.

-The top of the third level is a water conduit.

-The conduit is 1.8 meters (6 feet) high and 1.2 meters (4 feet) wide.

-It also has a gradient of 0.4 per cent.

-The three levels were built in dressed stone without mortar

-The projecting blocks supported the scaffolding during construction

Roman Concrete Facings: (a) opus incertum, (b) opus reticulatum, (c) opus

Roman Engineering and New Material Basis: Concrete

Massive concrete structures with vaults and arches

-Although the Greek tradition of carefully cut stone wall construction never died out (particularly in the East), concrete became a new material

-Concrete: a Roman invention

-Concrete's greatest properties are its compressive strength and its plasticity.

-Concrete allowed the creation of two unique building types: the Amphitheatre and the Theatre.

-Both were curvilinear and multistoried and would have been very difficult to construct given the limitations of stone.

-This enabled Roman architecture to exceed restrictions imposed on Greek architecture by the exclusive use of stone.

-Massive pillars were capable of supporting vast arches, then supplanted the columns as load-bearers.

Roman Engineering and New Material Basis: Concrete

-Concrete, was mixed from pozzolana, a volcanic ash mined on the slopes of Mount Vesuvius, which forms a natural cement when combined with lime.

-Roman work was often of brick or (especially in the West) of brick-faced concrete, which was usually then stuccoed, sometimes to look like drafted Greek-style masonry.

-Vaults, although sometimes of stone or brick, were frequently made of concrete, which would have been cast upon a timber framework.

-Subsequently the interior, freed from the restrictions imposed by transverse wooden beams, was conceived by architects in full spatial terms, a conception previously limited to the exterior.

-Roman architecture had from that point on to be judged and appreciated from the inside

Pantheon, section through portico and rotunda

City Planning:

Rome

Colonial City

Etruscan bronze she-wolf from Capitoline Hill; sixth-fifth century BC (twins, Romulus and Remus, added in Renaissance). Rome, Conservatori Museum.

Roman Mythology

Romulus and Remus, founders of Rome, 753 BC

Romulus et Remus, painting by Paul Pieter Rubens, ca. 1615

Rome

- Archaeology has informed us that Rome had already been occupied well before the traditional date of Rome of foundation by Romulus.
- 753 BC: traditional date for the foundation of Rome
- during the 8th century, the seven hills of Rome were occupied by
- During the 7th century BC, they became unified and set the forum as the civic center. This moment was the birth of Rome.
- Republic was formed in 509 BC with the first arrangement of the Forum

Basic Topography of Rome

Basic Rome City Topography

- Traditionally Rome is said to be founded on seven hills, (although the history and the topography of Rome is a bit more complicated than that)
- Rome's Seven Hills
- The hills are not really isolated hills.
- Rather they are a series of ridges eroded from a plain above the floodplain of the Tiber river.
- Erosion has separated the ends of some of the ridges into freestanding heights.
- It's easy to understand if you look at the contour map below.
- Note also that the slopes of the hills and ridges were much steeper in ancient times and the valley bottoms were much closer to the level of the Tiber than they are today-- both natural action and human intervention have smoothed the contours and softened the edges.

Palatine Hill (Palatium = Palatino)

-The central hill and where the city of Rome was founded by Romulus according to legend.

-The myth is corroborated by archaeological finds from the iron age (10th century through 8th century BC) of huts and primitive defensive walls around the hill.

-The Palatine remained the center of power throughout the history of Rome, first as the residential area of choice of the most wealthy patricians, later as the residence of the emperors.

Capitoline Hill (Capitolium = Campidoglio)

-This hill was very steep and soon became the fortified stronghold of Rome.

-When the Gauls sacked Rome in 390 BCE, only the Capitol held out.

-Later it became the religious center, due to the presence of the Temple of Jupiter Capitolinus Best and Greatest.

-The Capitoline Hill has two summits, the Capitoline proper to the south and the Arx to the north, with the Asylum on the ridge between them.

-The Arx is now occupied by the church of Santa Maria in Aracoeli and the modern Vittoriano.

-The Asylum is now the Piazza di Campidoglio.

Trans Tiberium (across the Tiber
or Trastevere)

-Trastevere is the modern Italian name for the part of Rome on the western bank of the Tiber river, and from ancient times it was an area outside the Pomerium where foreigners were allowed to live.

-In the first century BC, Trans Tiberium was where the Jewish international traders settled

-It later became the center of early Christian activity.

-The Janiculum Hill

-The Vatican Hill

- Where there are hill, there are valleys:
- The Forum Romanum is in the valley between the Palatine, the Capitoline and the Esquiline hills.
- The Republican Forum was built in the valley bottom and the Imperial Forums were built a little to the north on and into the slopes of the Quirinale Hill.

- The Velabrum is the area between the Palatine and the Capitoline hills.
- In ancient times there was a slight rise here which made the area now covered by the Republican Forum (= Foro Romano) an unusable swamp.
- To drain the swamp a large sewer tunnel, the cloaca maxima, was driven through the Velabrum down to the Tiber.
- This project was realized during the late monarchical period, ca. 600 BC.

- Between the Aventine and the Palatine is a long straight creek-bed depression where the Circus Maximus was later built.
- Where the Velabrum and the Circus Maximus meets, between the Capitoline, Palatine and Aventine hills were the first Roman harbor and the marketplace of Rome, the Forum Boarium (Cattle Forum) and the Forum Holitarium (Vegetable Forum).

- East of the Velia, between the Esquiline, Palatine, and Caelian hills, is the area of the Colosseum (=Colosseo) where there was a small lake before the construction of the Colosseum.
- Nero incorporated the lake into his Domus Aurea complex

Religious Architecture

- The Roman temple, like the Greek and Etruscan, was primarily designed to house the statue of the deity to which it was dedicated.
- The fact that it was not designed for a congregation meant that temple builders were generally more interested in impressive exteriors than spacious interiors.
- After the expulsion of the Etruscan kings in 510 BC, the Romans continued to build their temples in the Etruscan style as late as the 2nd century BC.
- The Greek builders brought to Rome also built first marble temples in Hellenistic style.
- But, despite this direct influence from Greece, in general, Roman temples usually followed the traditional Etruscan plan and were normally built in such local materials as travertine and tufa.
- The column and colonnade continued to be basic components of building design, especially for temples. They maintained the basic layout of a cella (central sanctuary) with a frontal or peripheral colonnade.

Temple of Jupiter Capitolinus (Capitoline Hill,
Capitolium=Campidoglio), Rome, inaugurated in 509 BC (by
Etruscans)

Temple of Portunus, Forum Boarium, Rome, late 2nd century
BC

Round temple of the Forum Boarium, Rome, dedicated 120
BC

The Round Temple of the Forum Boarium, Rome

-Dedicated about 120 BC TO Hercules Victor,
patron of the oil merchants

-It was dedicated by a wealthy merchant
named Marcus Octavius Hirsenus.

Merchants accumulated much wealth around
this time by dominating the Mediterranean

-This was the second marble temple built in
Rome and is the oldest to survive

-This *tholos* in Pentelic marble was almost
certainly designed by a Greek architect

The Round Temple of the Forum Boarium, Rome

- The cult state was also the work of a Greek artist
- Built on a tufa foundation with a marble facing, the temple is peripteral in form with 20 Corinthian columns, and an east-facing portal.
- nine columns and eleven capitals were reworked by Tiberius in Luna (Carrara) marble.
- The entablature and roof are now missing.

The Pantheon

- Pantheon (every god)
- It is one of the best preserved of all Roman buildings.
- was built by Hadrian between AD 118 and 25
- is one of the best known of all Roman temples and yet one of the most unusual
- Behind the traditional octastyle porch is an enormous domed rotunda (diam. 43.2m) built of brick-faced concrete.
- Although the Pantheon was influential, especially during the Renaissance, it was outside the mainstream of temple architecture.
- It affected the Temple of Asklepios Soter at Pergamon (AD. 145) and the Round Temple at Ostia (AD 230-40).
- But, except for these two, it had little impact upon temple architecture.
- It was not until the early Christian period that centralized domed buildings once again assumed importance in religious architecture.

- The building is circular with a portico of three ranks of huge granite Corinthian columns (eight in the first rank and two groups of four behind) under a pediment opening into the rotunda, under a coffered, concrete dome, with a central opening called oculus to the sky.
- Almost two thousand years after it was built, the Pantheon's dome is still the world's largest unreinforced concrete dome.
- The height to the oculus and the diameter of the interior circle are the same, 43.3 metres (142 ft).
- A rectangular structure links the portico with the rotunda.
- It has been in continuous use throughout its history, and since the 7th century, the Pantheon has been used as a Roman catholic church dedicated to "St. Mary and the Martyrs" but informally known as "Santa Maria Rotonda."

Pantheon, section through portico and rotunda

*WArm-029 Interior of the Pantheon by
Giovanni Pannini*

- The Basilica Ulpia (early 2nd century AD) has a large semi-circular apse at the end of each short side, and the large nave has two tiers of granite columns supporting the clerestory.
- It was built transversely across the main axis of Trajan's Forum, an arrangement followed by the Severan Basilica at Leptis Magna.

Basilica of Maxentius (and Constantine), Rome

-The basilica of Maxentius (AD 307-12) (and Constantine) has the most unusual plan of all Roman basilicas.

-Its nave is covered with a triple groin vault buttressed by lateral vaults

-this arrangement is similar to that found in the frigidarium (cold room) of great Imperial baths such as the Baths of Diocletian (AD 298-305/6).

-The central nave measures 80 meters (260 feet) in length, 25 meters (80 feet) in width, with a height of about 35 meters (115 feet).

Triumphal Arch

Triumphal Arches

- The most conspicuous honorific monuments in a Roman town were triumphal arches.
- They were erected to commemorate victories or to honor individual emperors.
- They were erected often at one of the exits from the forum.
- By means of inscriptions and narrative reliefs which tell of an emperor's conquests the triumphal arch was one of the principal means of spreading imperial ideology.
- Throughout the East, these arches symbolized the provinces' patriotism to Rome.

Augustan arch, Rimini, 27 BC

Triumphal Arches

- Early arches, such as the Augustan Arch in Rimini (27 BC), and the Arch of Augustus (Octavian) in the Forum Romanum (29 BC), had a single opening.
- A second arch built in the Forum Romanum in 19 BC

Triumphal Arches

- The Arch of Titus in Rome was erected in AD 70 to celebrate the capture of Jerusalem.
- It has a single opening flanked by engaged composite columns with reliefs of the triumph of Titus in the passageway.

Rome, Arch of Constantine (315)

-In the Arch of Constantine commemorates his victory over Maxentius.

-It has a triple arrangement

-But, it is more emphatic by the division of the attic into three compartments, the outer ones containing relief sculptures and the middle one as an inscription.

Rome, Arch of Constantine

Roman Baths

Therma of Caracalla, Rome

Historical Background

- The rich material base of the Empire allowed its citizens leisurely life style.
- They lived on free corn and became very much interested in the amusements of the amphitheatre and circus.
- Free entertainment gradually replaced traditional religious festivals and became a form of relaxation
- The thermae, or Baths, became one of the true symbols of Romanism.

Historical Background

- The oldest known examples of this type of architecture dates from the end of the Republic.
- From the 1st century AD, sports and conference rooms, promenades and private assembly rooms gradually clustered around the changing rooms (Apodyteria), the cold bath (Frigidarium), the tepid bath, the hot bath, the steam bath and the swimming pool.
- the variety of activities that baths had to offer made them very sociable places.
- Once the activities of the day were concluded at around 3 o'clock in the afternoon, it was there that one would go for relaxation, instruction and meeting people.
- Even small towns had several baths of different sizes.
- In Rome, besides countless suburban baths (952 in AD 354), it was the great buildings to put up in the 3rd century by Caracalla and Diocletian which represented the zenith of this thermal age.
- The use of vaults and arches together with a sound knowledge of building materials, for example, enabled them to achieve unprecedented successes in the construction of imposing structures for public use.

-The grandest of the public baths, or thermae built by successive emperors.

-Diocletian's Baths, dedicated in 306, were the largest and most sumptuous of the imperial baths and remained in use until the aqueducts that fed them were cut by the Goths in 537

-It was oriented to the southwest so that solar energy heated the caldarium (hot plunge bath) without affecting the frigidarium

-Axial layout from Calidarium to Tepidarium (6), then to Frigidarium, and then to Navatio

-Symmetrical layout of additional rooms such as Palaestra (training room for athletes), Ephebeum (gymnasium), individual suits of bathroom

Baths of Diocletian, Rome

Theatre

Rome, Colosseum (AD 72-80)

- The Colosseum or, The Coliseum, is an elliptical amphitheatre in the centre of the city of Rome, Italy
- the largest ever built in the Roman Empire
- It is considered one of the greatest works of Roman architecture and Roman engineering
- Occupying a site just east of the Roman Forum, its construction started between 70 and 72 AD under the emperor Vespasian and was completed in 80 AD under Titus with further modifications being made during Domitian's reign (81–96).
- Capable of seating 50,000 spectators, the Colosseum was used for gladiatorial contests and public spectacles such as mock sea battles, animal hunts, executions, re-enactments of famous battles, and dramas based on Classical mythology.
- The building ceased to be used for entertainment in the early medieval era
- It was later reused for such purposes as housing, workshops, quarters for a religious order, a fortress, a quarry, a Christian shrine

- Unlike earlier Greek theatres that were built into hillsides, the Colosseum is an entirely free-standing structure.
- It derives its basic exterior and interior architecture from that of two Roman theatres back to back.
- It is elliptical in plan and is 189 meters (615 ft / 640 Roman feet) long, and 156 meters (510 ft / 528 Roman feet) wide, with a base area of 6 acres (24,000 m²).
- The height of the outer wall is 48 meters (157 ft / 165 Roman feet). The perimeter originally measured 545 meters (1,788 ft / 1,835 Roman feet).
- The central arena is an oval 87 m (287 ft) long and 55 m (180 ft) wide, surrounded by a wall 5 m (15 ft) high, above which rose tiers of seating.

-The outer wall is estimated to have required over 100,000 cubic meters of travertine stone which were set without mortar held together by 300 tons of iron clamps.

-However, it has suffered extensive damage over the centuries, with large segments having collapsed following earthquakes.

-The north side of the perimeter wall is still standing; the distinctive triangular brick wedges at each end are modern additions, having been constructed in the early 19th century to shore up the wall.

-The surviving part of the outer wall's monumental façade comprises three stories of superimposed arcades surmounted by a podium on which stands a tall attic, both of which are pierced by windows interspersed at regular intervals. The arcades are framed by half-columns of the Doric, ionic, and Corinthian orders, while the attic is decorated with Corinthian pilaster

-Each of the arches in the second- and third-floor arcades framed statues, probably honoring divinities and other figures from Classical mythology