

**Outline of Architecture**  
**February 4, 2012**

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**Note:** To look up references, see the Consciousness Bibliography, listing 10,000 books and articles, with full journal and author names, available in text and PDF file formats at [http://www.outline-of-knowledge.info/Consciousness\\_Bibliography/index.html](http://www.outline-of-knowledge.info/Consciousness_Bibliography/index.html).

**ARTS>Art>Architecture**

**architecture**

Art {architecture} can be about buildings and building parts.

**ARTS>Art>Architecture>Building Parts**

**cornerstone**

commemorative stone {cornerstone} placed at main building corner just after building has begun.

**fixture**

Living room, bathroom, kitchen, and bedroom items {fixture}, such as sink, bathtub, toilet, ceiling lights, and power outlets, attach to house.

**millstone**

Circular stones {millstone} can grind grain.

**moat**

Ditches {moat} can be around castles.

**scaffold**

Temporary platforms {scaffold} can be for construction or execution.

**woodwork**

moldings, doors, and ornamental pieces {woodwork}.

**ARTS>Art>Architecture>Building Parts>Arch**

**arch of building**

Stones {arch, building}| can curve over space between two stone columns. To build, stones rise from column tops. Scaffolding holds stones. Top middle has a stone {keystone}, added last. Arches have side and downward pressures. Steel arches use steel rectangles. Beams or bridges can be on arch tops.

**post and lintel**

Straight beams {lintel} can lie across two column tops {post} {post and lintel}|.

**truss of arch**

Visible frames {truss, roof}| can support roofs over halls.

**vousoir**

Semicircular arches can have wedge-shaped blocks {voussoir}, not overlapping stones.

**ARTS>Art>Architecture>Building Parts>Arch>Kinds**

**corbel**

First arches {corbel} had center point.

**Gothic arch**

Gothic cathedrals had pointed arches {Gothic arch}.

**Romanesque arch**

Romanesque churches had round arches {Romanesque arch}.

**ARTS>Art>Architecture>Building Parts>Basement**

**crypt**

Church basements {crypt}| can store the dead.

**foundation**

concrete building base {foundation}.

**sepulcher**

tomb {sepulcher}.

**ARTS>Art>Architecture>Building Parts>Beam**

**beam**

main horizontal wood or steel board {beam, building}.

**butt joint**

flat end connector {butt joint}.

**girder**

main horizontal beam {girder}.

**I beam**

steel beam {I beam}.

**joint of beam**

metal beam connector {joint, building}.

**mortise**

Holes {mortise} can receive tenons to make joins.

**quoin**

Blocks {quoin} can make angles on building exteriors.

**rafter**

Sloping beams {rafter} can go from top horizontal beam to roof edge, under joists.

**ridgepole**

Horizontal beams {ridgepole} can be along rooftops.

**scantling**

Short light wood beams {scantling} can insert vertically in building frames.

**tenon**

Points {tenon} can insert into mortises to make joins.

**two-by-four**

Wood beams {two-by-four} are 1-5/8 inch by 3-3/8 inch.

**ARTS>Art>Architecture>Building Parts>Column****abutment**

bridge-end support {abutment}.

**caryatid**

Columns can have woman shape {caryatid}.

**pendentive**

Byzantine churches can have buttressed main columns {pier, column}, with rim {pendentive} at dome.

**pilaster**

square pillar {pilaster}|.

**piling**

Large wood, steel, or concrete posts {piling} {pile, building}, deep in ground, can support buildings.

**pillar**

Columns or beams {pillar, column} can support roofs.

**pontoon**

floating-bridge support {pontoon}.

**pylon as pole**

wire-carrying steel pole or ceremonial gateway {pylon, column}.

**spandrel of arch**

Triangular regions {spandrel, building} can be between two arches or from column tops to arch tops.

**stanchion**

vertical post {stanchion}.

**totem pole**

North-American tree trunks {totem pole} can have carved animal totems.

**ARTS>Art>Architecture>Building Parts>Door****doorjamb**

Wedges {doorjamb} can hold doors open.

**Dutch door**

Doors {Dutch door} can have top and bottom halves that open separately.

**French door**

Doors {French door} can have glass.

**jamb of door**

doorframe side {jamb, door}.

**mullion**

vertical door divide {mullion}.

**portal door**

entranceway {portal}.

**postern**

rear gate {postern}.

**pylon as gateway**

Egyptian New Kingdom temples had ceremonial gateway {pylon, gateway} between two walls at entrance.

**rail of door**

horizontal door side {rail, door}.

**shoji**

Japanese light sliding or folding door {shoji}.

**snubber**

A chain and spring {snubber, door} can prevent doors from opening too wide.

**stile of door**

vertical door side {stile, door}.

**stoop**

small entrance stairs {stoop}.

**storm door**

heavy door {storm door}.

**threshold as door**

entrance or under-door wood or stone panel {threshold, door} {saddle, door}.

**torii gate**

Shinto shrine gate {torii, gate}.

**ARTS>Art>Architecture>Building Parts>Floor****joist**

Parallel horizontal beams {joist} can hold floors or ceilings.

**parquet**

Wood flooring {parquet} can have checkerboard look.

**rostrum**

public speaker's raised platform {rostrum}.

**terrazzo**

Polished stone chips {terrazzo} can be in marble floors.

**ARTS>Art>Architecture>Building Parts>Furnace****briquette**

charcoal square {briquette}.

**clinker**

burned coal remains {clinker}.

**ember**

hot burned wood remains {ember}.

**hearth**

Brick areas {hearth} can be in front of fireplaces.

**ARTS>Art>Architecture>Building Parts>Greek Temple****Greek temple**

Greek Archaic had different temple styles {Greek temple}: Doric, Ionic, and Corinthian. Temple stones fit together, with no clay, concrete, or cement. Temple roofs were terra-cotta tiles on wood rafters over wood beams.

**entablature**

Archaic temples had stepped platform, platform columns, and stones above columns {entablature}.

**capital of column**

Doric columns had tops {capital, column} including echinus and abacus.

**echinus**

Doric columns had capitals including lower flared piece {echinus} and abacus.

**abacus of column**

Doric columns had capitals including echinus and higher thick piece {abacus, column}.

**volute**

Ionic columns had bottom flat base, capital, deeper fluting, and curved piece {volute} between echinus and abacus. Corinthian columns had more-elaborate volutes.

**entasis**

Doric columns taper and are slightly convex {entasis}, but Ionic columns are cylindrical.

**architrave**

Entablature included stone blocks {architrave}| {epistyle}, resting on columns, around top. Entablatures had stone-block friezes over architraves.

**triglyph**

Doric friezes had regularly repeated blocks {triglyph}.

**glyph of frieze**

Doric friezes had triglyphs with two vertical grooves {glyph, frieze}.

**chamfer**

Doric friezes had triglyphs with two half-grooves {chamfer} alternating with metope.

**metope**

Doric friezes had triglyphs with glyph and two chamfer alternating with blank spaces {metope}. Ionic friezes had three vertical small rectangles alternating with reliefs.

**pediment**

Entablatures had triangles {pediment}| between flat ceiling and sloping roof sides, on short sides.

**frieze**

Entablatures had bands {frieze}| around building tops, on long sides.

**facade of temple**

Entablatures had horizontal pieces on long sides and triangular stones on short sides {facade, temple}, projecting over cornice.

**cornice**

Entablatures had horizontal pieces on long sides and facades projecting over frieze tops {cornice}|.

**cella**

Temples had a central room {cella} {naos} for god image. In front of cella was a pronaos walled porch with two front columns. Closed porches can be behind cella. Cella and pronaos were like megaron of Mycenaeans.

**colonnade**

In large temples, columns {colonnade}| {peristyle} went around naos and pronaos.

**ARTS>Art>Architecture>Building Parts>Greek Temple>Kinds****Doric temple general**

Archaic temples {Doric temple} had an oldest style.

**Ionic temple**

Archaic temples {Ionic temple} had a newer style.

**Corinthian temple**

Archaic temples {Corinthian temple} can vary Ionic style.

**ARTS>Art>Architecture>Building Parts>Pipe****conduit**

pipe {conduit}.

**duct**

pipe {duct}.

**penstock**

Pipes {penstock} can carry water to turbines.

**standpipe**

Vertical pipes {standpipe} can hold water to make pressure.

**water main**

street water pipe {water main}.

**ARTS>Art>Architecture>Building Parts>Roof****crenel**

battlement {crenel}.

**fascia of roof**

overhang and beam end {fascia, building}.

**flashing**

Metal or plastic {flashing, roof joints} can be over roof joints, such as where chimney meets roof.

**hip**

Convex edges {hip, building} can be where two sloping roofs meet.

**plenum roof**

Spaces {plenum, roof} can be between suspended ceilings and roofs or raised floor and ground.

**rake**

roof slope {rake, roof}.

**ridge of roof**

sloping-roof horizontal top {ridge, roof}.

**soffit**

under overhangs and beams {soffit, roof}.

**valley**

Concave edges {valley} can be where two sloping roofs meet.

**vault**

Roofs {vault} can have arches.

**ARTS>Art>Architecture>Building Parts>Roof>Ornaments****belfry**

bell tower {belfry}.

**belvedere**

raised turret or pavilion {belvedere}.

**cupola**

small roof dome {cupola}.

**dormer**

roof-window gable {dormer}.

**eave**

Roof edges {eave} can extend beyond wall.

**gable in roof**

Triangles {gable, roof} can be at rooftop ends.

**gargoyle**

fantastically carved drain spout or beam {gargoyle}.

**pinnacle**

point {pinnacle}|.

**sky lick**

Temple roof points can have upward curved metal points {sky lick}.

**skylight**

Roof openings {skylight} can have transparent material to let in light.

**windsock**

Sleeves {windsock} can rotate in wind.

**yak on roof**

tall plaster demon {yak, roof}.

**ARTS>Art>Architecture>Building Parts>Roof>Kinds****canopy**

Cloth roofs {canopy} can be on poles.

**hipped roof**

Russian Orthodox cathedrals {tented church} can have roofs {hipped roof} {tented roof} with small arches in tiers.

**mansard**

Roofs {mansard} can have two levels on all four sides, with lower roof steeper than upper.

**marquee**

large tent or theater-entrance small roof {marquee}.

**shake**

wood roof tiles {shake}.

**shingle**

Thin wood, rubber, composite, brick, or terra cotta rectangles {shingle} can overlap to cover roof.

**ARTS>Art>Architecture>Building Parts>Roof>Vault****barrel vault**

cylindrical roof {barrel vault}.

**cross vault**

Early Romanesque church vaults had groined vaults {cross vault}.

**groined vault**

intersecting barrel vault {groined vault}.

**ribbed groin vault**

Later Romanesque church vaults {ribbed groin vault} used wood or masonry in intersecting groined-vault lines {rib, vault}.

## **ARTS>Art>Architecture>Building Parts>Room**

### **ambulatory dome**

Column rings can hold domes, with aisles {ambulatory, building} between inside columns and outer wall.

### **anechoic chamber**

Closed rooms {anechoic chamber} can prevent echoes.

### **antechamber**

small waiting room {antechamber}.

### **anteroom**

small waiting room {anteroom}.

### **atrium**

Houses can have hall rooms {atrium, building}. Churches can have colonnaded end courts.

### **attic**

Spaces {attic} can be under roofs and above top floors.

### **campanile**

Romanesque churches can have bell towers {campanile}.

### **chamber room**

room {chamber}.

### **comfort station**

bathroom/restroom {comfort station}.

### **darkroom**

Rooms {darkroom} can be for developing photographs.

### **den room**

home study room {den, room}.

### **drawing room**

living room or special reception room {drawing room}.

### **foyer**

lobby or entrance hall {foyer}.

### **garret**

attic loft or room {garret}.

### **grandstand for field**

Rising plank seats {grandstand, building} can be beside reviewing areas or playing fields.

### **lavatory**

bathroom {lavatory}.

### **lobby entrance**

government or business building entrance hall {lobby, building}.

**lounge**

bar {lounge}.

**megaron**

Mycenaean palaces had centers with audience halls {megaron}.

**mezzanine**

Theaters can have lowest balconies or half stories {mezzanine}.

**narthex**

Churches can have an entrance hall {narthex} between atrium and nave.

**nave**

Long halls have ends {nave}|.

**parlor**

Businesses or houses have visiting rooms {parlor}.

**patio**

uncovered paved recreation area {patio}.

**penthouse**

Apartments {penthouse} can be on top stories, or sheds can use building walls.

**portico**

Covered areas {portico}| with two parallel column rows can be at entrances.

**powder room**

ladies restroom {powder room}.

**privy latrine**

latrine {privy}.

**root cellar**

Basement areas {root cellar} can be for keeping vegetables.

**rotunda**

domed round large room {rotunda}.

**salon**

drawing room or fancy shop {salon}.

**scullery**

Rooms {scullery} can be beside kitchens for dish washing and food preparation.

**solarium**

windowed south room or porch {solarium}.

**study**

reading or writing room {study}.

**suite of rooms**

room set {suite, building}.

**sun parlor**

windowed south room {sun parlor}.

**transept**

Churches can have crosswise halls or side halls {bema} {transept} between apse and nave.

**verandah**

Roofed open porches {verandah} {veranda} can be along building sides.

**vestibule**

small lobby, small entrance hall, or train-car enclosed end {vestibule}.

**vestry**

sacristy or church meeting room {vestry}.

**ARTS>Art>Architecture>Building Parts>Room>Parts****alcove**

small extra space {alcove}.

**apse**

Long halls can have two large circular end niches {apse}.

**chancel**

Areas {chancel} around alter can be for choirs.

**corncrib**

corn holder {corncrib}.

**cubicle**

Enclosed square areas {cubicle} in large rooms can be for office workers.

**gable as porch**

triangular-ended porch {gable, porch}.

**kitchen midden**

garbage area {kitchen midden}.

**larder**

Rooms or closets {larder, room} can be for meat and other foods.

**midden**

house garbage dump {midden}.

**module of building**

Standardized building units {module, building} have functions.

**mow**

Raised racks {mow} can be for grain or hay storage.

**nook**

room corner {nook}.

**ARTS>Art>Architecture>Building Parts>Sewer****cleanout**

Waste drain systems have extensions {cleanout} from lowest drain to above-house trap, with covers.

**septic tank**

Tanks {septic tank} can receive house wastewater and have anaerobic bacteria. They do not connect to public sewer systems.

**soil stack**

Waste drain systems can have main pipes {soil stack} that lead from lowest drain to roof.

**vent stack**

Waste drain systems can have branch pipes {vent stack} that lead from toilet to roof.

**ARTS>Art>Architecture>Building Parts>Theater****bleacher**

stadium plank seats {bleacher}.

**box seat**

enclosed theater seat {box seat}.

**footlight**

Stages can have lights {footlight} in front at stage level.

**house lights**

theater lights {house lights}.

**loge**

Theaters can have enclosed seating rooms {loge}. Theater mezzanines can have front rows.

**proscenium arch**

Theater stages can have arches {proscenium arch} over front.

**tableau curtain**

Curtains {tableau curtain} can draw sideways and upward, as on theater stages.

**ARTS>Art>Architecture>Building Parts>Walkway****baluster**

banister or railing vertical post {baluster}.

**balustrade**

walkway railing and posts {balustrade}.

**banister**

stair railing {banister}.

**breezeway**

Roofed open walkways {breezeway} can be between two buildings.

**catwalk**

Narrow walkways {catwalk} can be beside bridges or posts.

**loggia**

Buildings can have front or side open-sided galleries or arcades {loggia}, above street level.

**newel**

Posts {newel} can be at upper or lower staircase banister ends.

**railing**

hand rail {railing}.

**riser**

Vertical boards {riser, stairs} can be under staircase steps.

**stringer**

Vertical boards {stringer, stairs} can be on staircase sides.

**tread of stair**

staircase step {tread, stairs}.

**ARTS>Art>Architecture>Building Parts>Wall****baseboard**

5-centimeter to 10-centimeter wood boards {baseboard} can be on walls beside floors.

**buttress**

Arched roof vaults can have outside wood or stone supports {buttress}|.

**clerestory**

Walls can go up to windowed walls {clerestory}| above one roof level.

**curtain wall**

Buildings can have steel skeletons and glass sides {curtain wall}.

**facade wall**

front wall {facade, building}.

**facing**

Materials {facing} can be on building outside surfaces.

**firewall**

insulated wall {firewall}.

**flying buttress**

Gothic cathedrals had outside arch supports {flying buttress}|, from ground to clerestory.

**furring strip**

wall-frame horizontal board {furring strip}.

**mantle of fireplace**

Horizontal wood board or bricks {mantle, fireplace} can be over fireplace tops.

**niche**

Temples can have concave wall recesses {niche, wall}, to hold sculptures.

**rampart**

Walls or banks {rampart} can guard soldiers against attack.

**scarce ment**

wall or embankment ledge {scarce ment}.

**shoe molding**

baseboard horizontal molding {shoe molding}.

**siding**

Aluminum or wood boards or panels {siding, wall} can attach to frames to make walls.

**sole plate**

wall-frame bottom board {sole plate}.

**stud of wall**

wall-frame vertical board {stud, wall}.

**top plate**

wall-frame top board {top plate}.

**wainscot**

wall wood panel or wall lower half {wainscot} {wainscoting}.

**westwork**

Later Medieval chapels had tall monumental entrance {westwork} with two towers.

**ARTS>Art>Architecture>Building Parts>Wall>Fence****paling**

picket {pale, picket} {paling}.

**picket post**

Fence sticks {picket, post} can have point pounded into ground.

**sunk fence**

Ditches {sunk fence} can be beside walls at land borders.

**ARTS>Art>Architecture>Building Parts>Wall>Niche****mihrab**

Mosque qibla has a center niche {mihrab}, to cause illusion of limitless horizontal distance.

**qibla**

A Mosque side {qibla} faces Mecca.

**stupa**

Hindu temples can have bell-shaped reliquary niches {stupa}.

**ARTS>Art>Architecture>Building Parts>Window****apron of window**

Supports {apron, window} can be under window stools.

**bay window**

Windows {bay window} can curve outward from walls.

**blind**

Horizontal or vertical window slats {blind} can turn or slide.

**casing**

Decorative trim {casing, window} can be around window frames.

**embrasure**

door or window recess or wall gun opening {embrasure}.

**grate**

Parallel or crossed bars {grate over opening} can be over openings.

**jamb of window**

window-frame side {jamb, window}.

**louver**

Movable slats {louver} can be over windows or over roof or wall openings.

**molding**

surface decorative strip {molding}.

**muntin**

vertical or horizontal window divide {muntin}.

**pane of window**

glass window {pane}.

**picture window**

large living-room window {picture window}.

**rail of window**

movable-sash horizontal wood side {rail, window}.

**sash**

window-frame movable frame {sash, window}.

**shutter**

Outer window covers {shutter, window} can be on hinges or hooks.

**sill of window**

window-frame and outer window-ledge bottom horizontal part {sill, window}.

**stile of window**

movable-sash vertical wood side {stile, window}.

**stool of window**

inner window ledge {stool, window}.

**storm window**

Second windows {storm window} can hook outside windows.

**transom**

Windows {transom} above doors or windows can be on hinges, or windows can have horizontal pieces.

**triforium**

Gothic cathedrals had windows in openings {triforium} between arches.

**weather stripping**

Cloth or rubber strips {weather stripping} can be between door and door jamb or window and window sill.

**windowsill**

Horizontal boards {windowsill} can be below windows.

## **ARTS>Art>Architecture>Buildings**

### **annex building**

added building {annex, building}.

### **complex of buildings**

single-purpose building set {complex, building}.

### **edifice**

building {edifice}.

### **field house**

stadium end building {field house}.

## **ARTS>Art>Architecture>Buildings>Church**

### **abbey**

monastery building {abbey}.

### **baptistery**

Domed round or polygonal buildings {baptistery} are for baptizing.

### **basilica**

Churches can have long halls {basilica}.

### **central plan church**

Early Renaissance churches {central plan church} had polygon shapes.

### **chapel**

Domed round or polygonal buildings {chapel} are for funerals.

### **cloister**

monastery, convent, or covered columned walkway {cloister}.

### **convent**

nuns' building {convent}.

### **madrasah**

Mosques {madrasah} can have open squares with four rectangular, vaulted side halls. Domes can be over open squares.

### **megalith stones**

Late New Stone Age peoples built large stone monuments {megalith}, using tall massive stones, with stones {cromlech} across tops, arranged in concentric rings.

### **minster**

cathedral or monastery church {minster}.

### **monastery**

monks' building {monastery}.

### **nunnery**

nuns' building {nunnery}.

### **pagoda**

Buddhist temple or tower {pagoda}.

**parsonage**

parson's home {parsonage}.

**priory**

monastery or convent {priory}.

**rectory**

school-headmaster or parish-priest home {rectory}.

**sacristy**

Church rooms {sacristy} can be for ceremonial utensils and clothes.

**sanctuary**

church {sanctuary}.

**tabernacle**

large temple or Eucharist-items holder {tabernacle}.

**Wailing Wall**

Jerusalem wall remnant {Wailing Wall} can be old-temple remains.

**ARTS>Art>Architecture>Buildings>Home****abode**

living place {abode}.

**barracks**

Buildings {barracks} can house soldiers, who sleep together in a large room.

**brownstone**

brick townhouse {brownstone}.

**bungalow**

small house {bungalow}.

**cabin house**

small rough wood house or ship living quarters {cabin}.

**chalet**

Houses {chalet} can let snow slide off roof.

**condominium**

One-story apartments {condominium} can be in homeowner associations and have monthly fees for maintenance, security, insurance, and recreation facilities.

**diggings**

living place {diggings}.

**duplex**

Houses {duplex} can have two similar-size living quarters.

**habitation**

house {habitation}.

**hovel**

shack {hovel}.

**igloo**

domed ice-block house {igloo}.

**keep**

castle {keep}.

**lean-to**

Shacks {lean-to} can have sloping roofs and open fronts.

**lodge**

large cabin {lodge}.

**manor**

estate house {manor}.

**pad**

house or apartment {pad}.

**ranch house**

single-story house {ranch house}.

**rest home**

Houses {rest home} can be for old people unable to care for themselves.

**row house**

townhouse {row house}.

**tenement**

poorly maintained apartment {tenement}.

**townhouse**

Two-story houses {townhouse} can be in homeowner associations and have monthly fees for maintenance, security, insurance, and recreation facilities.

**villa**

large estate {villa}.

**walk-up**

Apartments or office buildings {walk-up} can have no elevators.

**wickiup**

Temporary dwellings {wickiup} can have wood frames covered by bark, hides, twigs, or grass.

**wigwam**

Dome-shaped or cone-shaped dwellings {wigwam} can have wood frames covered by bark, hides, twigs, or grass.

**ARTS>Art>Architecture>Buildings>Home>Animal And Plant Housing**

**apiary**

bee buildings or hives {apiary}.

**arboretum**

enclosed trees and plant building {arboretum}.

**aviary**

enclosed bird building {aviary}.

**dovecote**

dove building {dovecote}.

**hutch**

small house or domesticated-rabbit holder {hutch}.

**kennel**

dog building {kennel}.

**paddock**

Fenced areas {paddock} can be for horses to wait for races.

**stable**

horse house {stable}.

**ARTS>Art>Architecture>Buildings>Inn****boardinghouse**

Houses {boardinghouse} can rent rooms and provide meals.

**caravansary**

traveler lodging {caravansary}.

**flophouse**

cheap hotel {flophouse}.

**hospice**

travel shelter or rooms {hospice}.

**hostel**

backpacker inn or rooms {hostel}.

**hostelry**

inn or hotel {hostelry}.

**roadhouse**

inn {roadhouse}.

**ARTS>Art>Architecture>Buildings>Prison****calaboose**

prison {calaboose}.

**hoosegow**

prison {hoosegow}.

**house of correction**

prison {house of correction}.

**oubliette**

Prisons {oubliette} can have ceiling entries.

**penitentiary**

federal or state prison {penitentiary}.

#### **ARTS>Art>Architecture>Buildings>Public Area**

##### **concourse**

Open areas {concourse} can be for many people to gather or pass through.

##### **courtyard**

enclosed yard {courtyard}.

##### **labyrinth maze**

Walls or hedges {labyrinth, maze} can form mazes.

##### **longhouse**

communal house {longhouse}.

##### **monolith**

large stone {monolith}.

##### **obelisk**

tall thin four-sided stone tower {obelisk}.

##### **pantheon building**

Buildings {pantheon} can showcase famous people statues.

##### **quad**

Campuses can have quadrangular central areas {quad}, typically with four surrounding buildings.

##### **terrace**

Porches, balconies, patios, or flat areas {terrace} can be on raised earth or mountainsides.

#### **ARTS>Art>Architecture>Buildings>Restaurant**

##### **automat**

Rooms {automat} can be for buying food from machines.

##### **bistro**

small restaurant {bistro}.

##### **cafe restaurant**

small restaurant {café, restaurant}.

##### **canteen**

eating hall {canteen}.

##### **coffeehouse**

Restaurants {coffeehouse} can serve mainly specialty coffees.

##### **delicatessen**

Shops {delicatessen} can sell cold meats, cheeses, and prepared vegetables.

##### **refectory**

cafeteria {refectory}.

##### **soup kitchen**

Buildings {soup kitchen} can be for poor people to receive free food.

**teahouse**

Japanese buildings {teahouse} can be for tea ceremonies.

**tearoom**

Restaurants {tearoom} can have refreshments.

**ARTS>Art>Architecture>Buildings>Restaurant>Bar****cabaret**

nightclub {cabaret}.

**dive**

low-class nightclub {dive}.

**gin mill**

bar {gin mill}.

**public house**

bar {public house}.

**saloon**

bar {saloon}.

**ARTS>Art>Architecture>Buildings>Theater****amphitheater**

large outdoor theater {amphitheater}.

**arena**

large sports or theatrical-event building {arena}.

**band shell**

Clamshell-shaped enclosures {band shell} can be behind outdoor stages.

**clamshell**

Stages can have semispherical backdrops {clamshell}.

**coliseum**

ancient large arena {coliseum}.

**discotheque**

dance hall {discotheque}.

**hippodrome**

horse-show arena {hippodrome}.

**stadium**

large roofless sports arena {stadium}.

**theater-in-the-round**

Theaters {theater-in-the-round} can have stage in middle, with seats all around.

**ARTS>Art>Architecture>Buildings>Tomb****beehive tomb**

Tombs {tholos} {beehive tomb} can have deep shafts with conical stone chambers.

**catacomb**

tomb {catacomb}.

**hecatomb**

tomb building {hecatomb}.

**mausoleum tomb**

burial chamber {mausoleum}.

**ARTS>Art>Architecture>Buildings>Transportation**

**apron of airport**

airplane parking area {apron, airport}.

**autobahn**

German highway {autobahn}.

**boardwalk**

raised wooden walkway {boardwalk}.

**causeway**

Elevated roads {causeway} can be across wetlands or water.

**cloverleaf**

Highway interchanges {cloverleaf}, in which vehicles do not cross paths but only merge, can look like four-leaf clovers from above.

**gantry**

tall supporting frame {gantry}, as for rockets.

**trunk line**

main telephone line {trunk line}.

**ARTS>Art>Architecture>Buildings>Transportation>Train**

**ell**

elevated train structure {ell}.

**metro**

city or subway {metro}.

**railhead**

railroad track beginning {railhead}.

**roundhouse**

Train engines turn around in buildings {roundhouse}.

**semaphore**

Towers {semaphore} can have flags, arms, or lights that can go up or down.

**trestle**

Structures {trestle} can be under bridges, or horizontal bars can have end legs.

## **ARTS>Art>Architecture>Buildings>Waterway**

### **aqueduct waterway**

Sluices {aqueduct} can transport water over long distances using steady grade.

### **cistern**

water storage pond or tank {cistern}.

### **culvert**

Pipes {culvert} can go under roads or earth berms.

### **drawbridge bridge**

Machines {drawbridge} can raise or tilt bridge middle sections, to allow ships through.

### **millrace**

Channels {millrace} to water wheels can speed water.

### **seaway**

Waterways {seaway} can go from ocean inland.

### **sluice**

Sloping water channels or troughs {sluice} can have gates.

### **spillway**

reservoir water-overflow channel {spillway}.

### **Turkish bath**

Buildings {Turkish bath} can have steam baths, massage, and cold showers.

### **viaduct**

Roads or railroads {viaduct} can be above valleys on arches.

### **waterworks**

water-processing buildings {waterworks}.

## **ARTS>Art>Architecture>Buildings>Waterway>Dam**

### **breakwater**

Rocks or concrete {breakwater} can block tides at sea inlets.

### **cofferdam**

People can build enclosures {cofferdam} from bottom to surface, to empty of water and allow work on bottom.

### **embankment**

Earth or stone piles {embankment} can hold back water.

### **jetty**

Concrete or rock lines {jetty} can block tides or currents at harbors or shorelines.

### **levee**

Earth or concrete banks {levee} can prevent river overflow.

### **seawall**

Earth or concrete banks {seawall} can be at shore.

### **weir**

River dams {weir} can change water flow or trap fish.

## **ARTS>Art>Architecture>Buildings>Waterway>Dock**

### **dock**

Walkways and vehicle ways {dock, building} can lead into water for tying ships and boats.

### **dry dock**

Docks {dry dock} can lift boats out of water for work on hulls.

### **pier**

Vertical columns or beams {pier, building} can support buildings or platforms for boat docking.

### **quay**

wharf {quay}.

### **wharf**

Platforms {wharf} can allow boat docking.

## **ARTS>Art>Architecture>Buildings>Workplace**

### **atelier**

artist workshop {atelier}.

### **athenaeum**

library or education building {athenaeum}.

### **bandstand**

raised roofed outdoor platform {bandstand}.

### **bazaar**

Outdoor/indoor marketplaces {bazaar} can have vendor stalls.

### **boutique**

Shops {boutique} can sell rare or fancy goods.

### **cabana**

beach bathhouse {cabana}.

### **capitol**

legislative building {capitol}.

### **casino**

high-class-gambling building {casino}.

### **clinic**

Buildings {clinic} can be where several doctors practice most specialties.

### **conservatory**

arts-education building {conservatory}.

### **customhouse**

border tax-collection building {customhouse}.

### **dispensary**

Buildings {dispensary} can be where people get medical supplies and medicines.

**emporium**

large shop {emporium}.

**experiment station**

Buildings {experiment station} can hold measuring apparatus.

**finishing school**

Schools {finishing school} can be for learning manners and etiquette.

**flea market**

Outdoor/indoor markets {flea market} can be for used or discounted items.

**foundry**

Buildings {foundry} can be for molding or casting metal.

**gallery**

Buildings {gallery} can be for exhibiting art works.

**kiosk**

Very small buildings {kiosk} can be for selling small items.

**machine shop**

Shops {machine shop} can cut and grind metal.

**mall**

Enclosed or open shops {mall} can have parking areas.

**midway**

Ride and amusement areas {midway} can be at fairs or circuses.

**natatorium**

swimming pool {natatorium}.

**observatory**

Buildings {observatory} can hold telescopes.

**package store**

liquor store {package store}.

**penny arcade**

old-time amusement center {penny arcade}.

**pharmacy**

Shops {pharmacy} can dispense drugs.

**planetarium**

Domed buildings {planetarium} with projectors can display star and planet positions on ceilings.

**sanatorium**

Buildings {sanitarium} {sanatorium} can be for people with chronic diseases or tuberculosis, or can be resorts for exercise and rest.

**shed**

small storage building {shed}.

**statehouse**

state legislative building {statehouse}.

**station**

Buildings {station} can be for waiting for trains or buses.

**stoa**

Greek Classical towns had municipal halls {stoa} near market.

**studio room**

Buildings {studio} can be for producing entertainments or can be artist workshops or practice rooms.

**sweatshop**

Workplaces {sweatshop} can have large rooms where underpaid and overworked workers work.

**wind tunnel**

Cylindrical chambers {wind tunnel} can have large fans.

**windmill**

Buildings {windmill} can have four large blades on a rotor that turns in wind.

**ARTS>Art>Architecture>Buildings>Workplace>Death****crematorium**

Buildings {crematory} {crematorium} can be for cremation.

**funeral home**

Buildings {funeral home} can be where bodies wait for burial or cremation.

**morgue**

Buildings {morgue} can be for dead people waiting for autopsy or identification.

**mortuary**

Buildings {mortuary} can be for preparing bodies for burial or cremation.

**ARTS>Art>Architecture>Buildings>Workplace>Farm****abattoir**

slaughterhouse {abattoir}.

**creamery**

Buildings {creamery} can process dairy products.

**distillery**

Buildings {distillery} can make alcohol.

**granary**

Buildings {granary} can hold stored grain.

**hothouse**

Enclosed buildings {hothouse} can be for sensitive plants, with filtered light.

**packinghouse**

Slaughterhouses {packinghouse} can package meat.

**plantation**

Estates or farms {plantation} can have workers living there.

**silo**

Cylindrical buildings {silo} can hold fodder.

**stockyard**

Areas {stockyard} can hold livestock.

**truck farm**

Small farms {truck farm} can be for produce.

**ARTS>Art>Architecture>Buildings>Workplace>Military**

**bastion**

fort or fortified palace {bastion}.

**blockhouse**

fortified wood or concrete building {blockhouse}.

**commissary**

military grocery and general store {commissary}.

**presidio**

Military grounds {presidio} can have fort and quarters.

**ARTS>Art>Architecture>Buildings>Workplace>Prostitution**

**bagnio**

Buildings {bagnio} can hold working prostitutes.

**bordello**

Buildings {bordello} can hold working prostitutes.

**brothel**

Buildings {brothel} can hold working prostitutes.

**ARTS>Art>History>Architecture**

**White Temple**

architect

Uruk, Iraq/Warka, Iraq/Erech, Iraq

-3200 to -3000

White Temple [-3200 to -3000]

Sumerian temples had shrines, workshops, and storehouses around them.

**Hierakompolis**

architect

Hierakompolis, Egypt

-3200 to -2185

Hierakompolis [-3200 to -2185]

Egyptian Old-Kingdom tombs were rectangular earth mounds, with brick or stone sides, for kings and courts. Chapel in mound had shaft to burial chamber. Tombs had mummies, sculptures, household items, and paintings.

**ziggurat**

architect

Ur, Iraq

-3000 to -2340

ziggurat [-3000 to -2340]

Sumerians built high rising platforms {ziggurat}], with temples opposite stair tops. Sumerian temples had a narrow cella hall with small side chambers and had shrines, workshops, and storehouses around them. Sumerian buildings used rectangular sun-dried clay-and-straw mud bricks, as well as wood.

### **Beaker Folk**

architect

Wiltshire, England

-2800 to -2300

Avebury [-2800 to -2300: megalith]

Wiltshire is in Wessex, near Stonehenge.

### **Abu Temple**

architect

Tell Ismar, Iraq

-2700 to -2500

Abu Temple [-2700 to -2500]

Giant Sumerian statues had conical or cylindrical bodies and large inlaid eyes.

### **Imhotep**

architect/physician

Saqqara, Egypt

-2650

Pyramid of King Zoser [-2650: first step pyramid that used cut stones]

He lived -2635 to -2595, multiplied using times-two table, and built pyramid. Egyptian Old Kingdom 3rd Dynasty pyramids had temples, palaces, and tombs {funerary district}. Palaces had fluted columns.

### **Sumerian tombs**

architect

Ur, Iraq

-2600

Sumerian tombs [-2600]

Sumerian tombs contained harps and statues.

### **Pyramids**

architect

Giza, Egypt

-2570 to -2300

Pyramids [-2570 to -2300]

Egyptian Old Kingdom 4th Dynasty kings built pyramid burial chambers. First and largest pyramid was for Cheops. Second, next largest pyramid was for Chefron. Last, smallest pyramid was for Mycerinus. Pyramid sides had smooth dressed stone. Burial chamber is in pyramid middle. East of each pyramid is Old-Kingdom temple with causeway leading to another temple near Nile. One temple has giant diorite seated Chefron. Another temple has giant slate statue of Mycerinus standing with his queen. Third temple has giant limestone statue of seated Prince Rahotep and his wife Nofret. Bodies are rectangular in style, but faces are individualistic.

### **Beaker Folk**

architect

Salisbury Plain, England

-2550 to -1900

Stonehenge [-2550 to -1900: megalith]

Tall massive stones, with cromlechs, were in three concentric rings. Third ring was four meters high. Ditches were 100 meters diameter. Inner ring had no lintels. In center were five eight-meter-tall posts and lintels. Upright stones surrounded central altar stone. Stone alignments pointed to sunrise or sunset on some days each year. Main axis pointed to sunrise on June 24. Nearest quarries were 200 kilometers away.

### **Ur Great Ziggurat Sumer**

architect

Ur, Iraq

-2060

Great Ziggurat of Ur [-2060: Sumerian ziggurat to Moon goddess Nanna or Sin used sun-baked brick with bitumen mortar, had glazed and colored brick facing, and had three tiers with sloping walls]

Shulgi of Urim, second king of Sumer, built it [-2047 to -1999]. Shulgi was son of Ur-Nammu, Third Dynasty of Ur founder.

### **Minoan palaces**

architect

Phaistos, Crete/Malia, Crete

-2000 to -1400

Minoan palaces [-2000 to -1400]

Minoan palaces had stairs and airshafts and had low ceilings. Porticos were at entrances. Interiors had decorations and paintings. Palaces had no fortifications.

### **Carnac tombs**

architect

Carnac, France

-2000 to -1000

Carnac tombs [-2000 to -1000]

Late New Stone Age peoples built large dolmen tombs with stone walls and stone tops.

### **Beni Hasan tombs**

architect

Beni Hasan, Egypt

-1920

Beni Hasan tombs [-1920]

Egyptian Middle Kingdom kings built tombs.

### **Minos Palace**

architect

Knossos, Crete

-1900

Palace of Minos [-1900: cut stone with wooden columns]

Large Minoan palace was the labyrinth of Greek myth.

### **Mycenaean tombs**

architect

Mycenae, Greece

-1600 to -1100

Mycenaean tombs [-1600 to -1100]

Mycenaean beehive tombs were in deep shafts with conical stone chambers and contained mummies, golden facemasks, and household items.

### **Queen Hatsheput Temple**

architect

Deir el-Bahri, Egypt

-1485

Temple of Queen Hatsheput [-1485: Egyptian New Kingdom temple next to cliffs]

Deir el-Bahri is near Thebes.

### **Hittite Lion Statue**

architect

Bogazkoy, Turkey

-1400

Lion Statue [-1400]

Hittites built rough-cut stone fortresses, with gates flanked by lion statues.

### **Mycenaean fortresses**

architect

Crete

-1400 to -1200

Mycenaean fortresses [-1400 to -1200]

Mycenaean fortresses built hilltop fortresses with stone block walls, similar to Hittite fortresses.

### **Mycenaean palaces**

architect

Crete

-1400 to -1200

Mycenaean palaces [-1400 to -1200]

Mycenaean palaces had a center with a megaron audience hall.

### **Amon-Re Precinct**

architect

Karnak, Egypt

-1390 to -1290

Precinct of Amon-Re [-1390 to -1290: Egyptian New Kingdom temple complex had statues of Ramses II]

Amon-Re is largest of four parts of Karnak Temple Complex to north. Karnak is near Luxor. Theban kings conquered Hyksos 15th dynasty and ruled Egypt in New Kingdom, especially 18th dynasty. In older mythology {Theban mythology}, Thoth created Amen or Amon or Amun, god of creation in Theban mythology. Amun was main Theban god. Ra or Re is spirit. His original wife was Amenet. In New-Kingdom mythology, his wife was Mut, goddess of motherhood in Theban mythology. Khons was god of moon in Theban mythology and was Amen's and Mut's son.

Ptah was creation god {Memphis mythology}. Re-Harakhte was sun god {Heliopolis mythology}. After New-Kingdom Aten-cult, Amen, Ptah, and Re-Harakhte merged to make Amen.

### **Amen-Re Temple**

architect

Karnak, Egypt

-1355 to -1335

Temple of Amen-Re [-1355 to -1335]

Egyptian New Kingdom temple had gateway between two walls at pylon entrance, then court with low walls, then hall of pillars, and then second court. Halls and chapels were around square room with four columns. High walls were around main temple and halls. Columns were massive and had top lintels.

### **Ramses II Temple**

architect

Abu Simbel, Egypt

-1275 to -1225

Temple of Ramses II [-1275 to -1225: It has statues of Ramses II carved out of rock]

Ramses II Temple is for Amen, Ptah, and Re-Harakhte.

### **Atreus Treasury**

architect

Mycenae, Greece

-1250

Treasury of Atreus [-1250]

Atreus Treasury is largest tholos beehive tomb. Mycenaeans used cut stones to make arched vaults, with outside wood or stone buttresses. They also built first corbel arches.

### **Jerusalem Temple built**

architect

Jerusalem, Palestine

-1000 to -900

Temple at Jerusalem [-1000 to -900]

Over rock, King Solomon of Israel built temple, which Babylonians destroyed later.

### **Ashurbanipal II Palace**

architect

Nimrud, Iraq/Calah, Assyria

-875

Palace of Ashurbanipal II or Palace of Assurnasirpal II [-875: Assyrian palace]

Relief shows Ashurbanipal II Killing Lions.

### **Sargon II Palace**

architect

Dur Sharrukin, Iran/Khorsabad, Iran

-742 to -706

Palace of Sargon II [-742 to -706: Two gates had relief sculptures, and wall reliefs showed Sargon's conquests in historical sequence]

Brick walls with turrets surrounded Assyrian palaces.

### **Hunting and Fishing Tomb**

architect

Tarquinia, Italy

-700 to -400

Hunting and Fishing Tomb [-700 to -400]

Etruscan tombs were stone house imitations in conical earth mounds. Sarcophaguses had sculptured clay lids with reclining figures in happy poses. Etruscan tombs had bird and dolphin paintings.

### **Etruscan houses**

architect

Italy

-700 to -200

Etruscan houses [-700 to -200]

Etruscan houses had an atrium.

### **Etruscan towns**

architect

Italy

-700 to -200

Etruscan towns [-700 to -200]

Etruscan towns had north-south road and east-west road. Narrow aqueducts transported water over long distances. They built fortifications, bridges, and drainage systems.

### **Doric temple began**

architect

Greece

-650 to -480

Doric temples [-650 to -480]

Archaic Style had different temple styles: older Doric, newer Ionic, and Corinthian Ionic variant.

### **Ashurbanipal Palace**

architect

Nineveh, Iraq

-645

Palace of Ashurbanipal [-645: Assyrian palace with reliefs of royal lion hunts and garden parties]  
Nineveh is in north Iraq.

### **Tower of Babel**

architect

Babylonia

-612 to -539

Tower of Babel [-612 to -539]

Nebuchadnezzar II built Tower of Babel. New Babylonians put smooth transparent glossy hard surface glazes on baked bricks.

### **Ur Great Ziggurat Babylon**

architect

Ur, Iraq

-612 to -539

Great Ziggurat of Ur [-612 to -539: seven-tier tower 50 meters high, with 70-meter by 50-meter base and special staircase]

Nebuchadnezzar rebuilt Sumerian ziggurat to Moon goddess.

### **New Babylonian bridges**

architect

Near East

-600

New Babylonian bridges [-600]

New Babylonians built first wood bridges, with stone piers.

### **Petra**

architect

Jordan

-600 to -400

Petra [-600 to -400: pink tombs cut into sandstone cliff, with largest 15 stories tall with 13-meter-high door]

Petra was capital of Nabatean Arabs and is east of Wadi Musa in southwest Jordan.

### **Artemis Temple Corfu**

architect

Corfu Island, Greece

-590

Temple of Artemis [-590: Doric temple had porch columns carved as female figures, and pediment and frieze had reliefs]

Corcyra is Corfu.

### **Ishtar Gate**

architect

Babylon

-575

Ishtar Gate [-575: New Babylonian city gate had large colored molded-brick animals]

Babylon had eight gates.

### **Paestum Basilica**

architect

Paestum, Italy

-550

Basilica or Temple of Hera I [-550: Doric temple]

Paestum is near Salerno in Campania in southwest Italy.

### **Siphnians Treasury**

architect

Delphi, Greece

-525

Treasury of Siphnians [-525: Greek Archaic building with frieze reliefs]

Pediment has Contest of Herakles and Apollo. Delphi is on Mount Parnassus in Phocis (Fokis) in central Greece.

### **Darius I Palace**

architect

Persepolis, Iran

-518

Palace of Darius I [-518]

Old-Persian palace was on a raised platform. Rooms, halls, and courts had many slender, fluted columns. Wooden roofs had beams fitted into column capitals. Relief sculptures had solemn ceremonial figures, mixing nomadic ornamentation styles with Greek and Sumerian styles.

### **Portonaccio Temple**

architect

Veii, Italy/Etruria

-510 to -500

Portonaccio Temple or Sanctuary of Minerva [-510 to -500: Etruscan temple had four roof terra-cotta statues]

It includes Vulca's muscular and aggressive terracotta Apollo of Veii. Etruscan is Tuscan. Veii was in south Etruria, north of Rome.

### **Libon of Elis**

architect

Olympia, Greece

-470 to -456

Temple of Zeus [-470 to -456: large Greek Classical]

Olympia is on Greece west coast.

### **Miletus old town**

architect

Miletus, Ionia

-450

Miletus old town [-450]

Greek Classical town has stoa municipal halls near market.

### **Poseidon Temple**

architect

Paestum, Italy

-450

Temple of Poseidon or Temple of Hera [-450: Doric]

Paestum is near Naples.

### **Ictinus**

architect

Athens, Greece

-447 to -432

Parthenon [-447 to -432: large Doric marble temple on Acropolis]

He worked with Callicrates and Phidias on Parthenon.

### **Callicrates**

architect

Athens, Greece

-447 to -424

Parthenon [-447 to -432: large Doric marble temple on Acropolis]; Temple of Athena Nike [-427 to -424: small Greek Classical Ionic temple on Acropolis]  
He worked with Ictinus and Phidias on Parthenon.

### **Mnesicles or Mnesikles**

architect

Athens, Greece

-437 to -405

Propylaea [-437 to -432: Greek Classical marble entry gate is west of Acropolis. Small Doric temple has two side rooms and Ionic columns.]; Erechtheum [-421 to -405: Greek Classical Ionic temple on Acropolis has Porch of the Maidens, with roof supported by six female statues]

Plutarch mentions him.

### **Tomb of the Reliefs**

architect

Cerveteri, Italy

-400 to -300

Tomb of the Reliefs [-400 to -300]

Etruscan rock tombs looked like house insides, with square pilaster pillars.

### **Mausoleum Halicarnassus**

architect

Halicarnassus, Asia Minor

-359 to -351

Mausoleum [-359 to -351: Ionic tomb of King Mausolus]

Halicarnassus is on Aegean-Sea coast in southwest Asia Minor.

### **Polyclitus the Younger or Polykleitos**

architect

Epidaurus, Greece

-350

Tholos or Theater of Epidaurus [-350: Greek Classical theater has concentric seat rows, aisles with stairs, and bottom orchestra area]

He lived -365 to -320. Tholos is at Asclepius sanctuary.

### **Paeonius/Demetrios**

architect

Ephesus, Turkey

-340 to -250

Temple of Artemis [-340 to -250: large temple]

Artemis is Diana. Chersiphron and his son, Metagenes, built first temple [-550], but it burned [-356]. The replacement temple burned [262] and invaders destroyed it [401].

### **Great Wall of China built**

architect

China

-300 to -200

Great Wall of China [-300 to -200]

Eastern wall, begun by Ch'in Shih Hwang-ti, averages eight meters tall, is seven to ten meters wide at bottom, and is five meters wide at top. Western wall is an earth mound with stone facing and is in ruins. Complete wall goes from Shanhaikuan on Yellow Sea to Chaiyukuan in Gobi Desert, 2500 kilometers, with side branches, and has 24,000 gates and towers. Ming Dynasty did next major work. Wall is largest construction in size, labor, and weight.

### **Brazen Palace**

architect

Anuradhapura, Sri Lanka

-300 to -100

Brazen Palace or Loha Pasada [-200 to -100: brass roof]; Ruwanweli Pagoda or Ruwanveliseya Dagaba [-144: silver base is 50 square meters]; Thuparama Dagaba or Thuparama Pagoda [-300 to -200]

First capital [-500] had giant earth stupas, with stone facings, and a temple carved from solid rock. Some stupas were larger than the Pyramids. Anuradhapura is north of Columbo.

### **Porta Augusta**

architect

Perugia, Italy

-200 to -100

Porta Augusta or Augusta Gate [-200 to -100: Roman fortified city gate in Etruscan style]

Porta Augusta had two wide towers, with a semicircular arch of voussoir wedge-shaped blocks, not overlapping stones.

### **Great Stupa**

architect

Sanchi, India

-200 to 200

Great Stupa [-200 to 200: Kushana temple with carved gateways]

Great Stupa is in central India.

### **Zeus Alter**

architect

Pergamon, Asia Minor

-180

Alter of Zeus [-180: Ionic alter]

Eumenes II, king of Pergamon in northwest Asia Minor, built it. East pediment shows race between Pelops and Oenomaos.

### **Fortuna Virilis**

architect

Rome, Italy

-100

Temple of Fortuna Virilis or Temple of Portunus [-100: Roman Ionic temple with podium, deep porch, and wide cella]

Ionic temples can have high platform {podium, temple}. Portunus protected harbors.

### **Sibyl Temple**

architect

Tivoli, Italy

-100 to -50

Temple of the Sibyl [-100 to -50: round concrete Roman temple]

Roman temples were concrete covered with plaster.

### **Ixion Room**

architect

Pompeii, Italy

-100 to 1

Ixion Room of House of Vettii [-100 to 1: Roman house]

Pompeii is near Naples in Campania.

### **domus**

architect

Pompeii, Italy/Herculaneum, Italy

-100 to 100

domus [-100 to 100: house]

Roman private houses {domus, house} had central atrium and rectangular central hall, with outer rooms.

### **insula as apartment**

architect

Rome, Italy/Ostia, Italy

-100 to 100

insula [-100 to 100: apartments]

Roman apartments {insula, apartment} had small central court, then space open to sky, and then opening to street. Shops were on first floor, with living quarters above.

### **true arch**

architect

Rome, Italy

-100 to 100

true arch [-100 to 100: arch]

Romans built first semicircular true arches, which had no buttresses.

### **Fortuna Primigenia**

architect

Palestrina, Italy

-80

Sanctuary of Fortuna Primigenia [-80: Roman temple]

Roman temples had cylindrical-roof barrel vaults.

### **Roman Forum built**

architect

Rome, Italy

-40 to 200

Roman Forum [-40 to 200]

Imperial Rome civic center first had Forum of Caesar and then Forum of Peace, Forum of Nerva, Forum of Augustus, Forum of Trajan, and Column of Trajan.

### **Jerusalem Temple rebuilt**

architect

Jerusalem, Palestine

-20 to 1

Temple at Jerusalem [-20 to 1]

King Herod built temple over rock where Solomon had built temple. Romans destroyed it [70].

### **Pont du Gard**

architect

Nîmes, France

-15 to 14

Pont du Gard or Bridge on the Gard [-15 to 14: Roman aqueduct]

Aqueduct of Nîmes is 50 km long. Nîmes is between Provence and Languedoc in south France.

### **Colosseum**

architect

Rome, Italy

70 to 82

Colosseum [70 to 82: Roman amphitheater for 50,000 people]

Colosseum used barrel vaults and intersecting barrel groined vaults.

### **Vitruvius**

architect

Rome, Italy

80

On Architecture [80: book]

He lived -90 to -20.

### **Pantheon temple**

architect

Rome, Italy

118 to 125

Pantheon [118 to 125: Large Roman temple with hemispheric dome, opening at top, and deep porch]

Niches have sculptures.

### **Castel Sant'Angelo**

architect

Rome, Italy

135 to 139

Castel Sant'Angelo or Mausoleum of Hadrian [135 to 139: Hadrian's former mausoleum]

Castel Sant'Angelo was a fortress [271]. Nicholas II connected it to Vatican by corridor. First floor has long winding ramp. Fourth floor has papal apartment and loggia of Julius II, designed by Bramante.

### **Sassanid Palace**

architect

Ctesiphon, Iraq

242 to 272

Sassanid Palace [242 to 272: Sassanid-style palace with brick vaulted audience hall]

Arch of Ctesiphon is the 30-meter gate finished by Chosroes I of Sasanian Empire.

### **Diocletian Palace**

architect

Split, Yugoslavia

300

Palace of Diocletian [300: Roman palace with arcade]

Roman palaces had columns and arches {arcade}.

### **Constantine Arch**

architect

Rome, Italy

312 to 315

Arch of Constantine [312 to 315: stone arch with Constantine Style reliefs]

Constantine Style reliefs had no spatial perspective, flat background, immobile figures, large-headed figures, different measurement scales, and unrelated images.

### **Santa Costanza**

architect

Rome, Italy

320 to 330

Santa Costanza chapel [320 to 330: Constantine Style polygonal building]

Constantine-Style round or polygonal domed baptistery buildings were for baptisms. Constantine-Style chapels were for funerals. Column rings supported domes, with ambulatories. Santa Costanza has mosaics.

### **Constantine Basilica**

architect

Rome, Italy

326

Basilica of Constantine or Basilica of Maxentius [326: Constantine Style church in Roman Forum]

Constantine Style churches had three large aisles, with groined vault and wide wooden roof, copied after public baths. Basilicas had apses at naves and colonnades down sides.

**St. Peter's Basilica**

architect

Rome, Italy

333

St. Peter's Cathedral [333: Constantine style church]

On site of Nero's amphitheater, Constantine built small church with long nave and long side aisles and with windows separated by columns. Apse with altar was at one end. Atrium was at other end. Narthex was between atrium and nave. Transept was between apse and nave. Roof was wood. Outside was brick or mortar. Inside walls were marble. Inside had colored stone pieces, small colored-glass-cube tesserae, and glazed clay mosaics embedded in plaster or cement.

Much later, pope crowned Charlemagne and other kings there.

**St. Paul's outside the Walls**

architect

Rome, Italy

386

St. Paul's outside the Walls [386: Constantine Style church]

It is on Via Ostiense.

**Santa Maria Maggiore church**

architect

Rome, Italy

440

Basilica di Santa Maria Maggiore or Saint Mary Major Basilica or Basilica di Santa Maria della Neve or Basilica Liberiana [440]

Pope Liberius built it.

**San Vitale**

architect

Ravenna, Italy

526 to 547

San Vitale Church [526 to 547: Byzantine church in octagon shape, with large dome, large windows, and niches between ambulatory columns, was model for later Eastern Orthodox churches]

San Vitale has famous mosaics.

**Hagia Sophia**

architect

Byzantium

532 to 537

Hagia Sophia or Church of Holy Wisdom [532 to 537: Byzantine church, built by Justinian, has central, high, light dome with many windows, resting on four arches from central-square pillars, with spherical triangles between piers and pendentives. Half-domes are on opposite dome sides]

Byzantine churches can have buttressed main piers with pendentive rim at dome.

**Sant'Apollinaire**

architect

Ravenna, Italy

533 to 549

Basilica di Sant'Apollinaire in Classe [533 to 549: Constantine Style church]

Ravenna is in Emilia-Romagna region in northeast Italy.

**Shiva Temple Bombay**

architect

Bombay, India/Mumbai, India

550

Shiva Temple or Trimurti Temple [550: Hindu style cave temple]

Shiva Temple is on Elephanta Island in Bombay harbor. Trimurti is Brahma, Vishnu/Krishna, and Shiva. Main statue is Shiva as Maheshwara.

### **Anundshog**

architect

Anundshog, Sweden

600

Anundshog [600: megalith kings' burial place]

Anundshog is near Stockholm. In the Ynglingasaga, Yngvar's son Anundr became king after Yngvar died [600].

### **Shwedagon Pagoda**

architect

Rangoon, Burma/Yangon, Myanmar

600 to 1000

Shwedagon Pagoda [600 to 1000: Gold-plated towers up to 100 meters high are on a tiled terrace 500 meters in perimeter]

Buddhist temple is on Singuttara hill.

### **Mecca Mosque**

architect

Mecca, Saudi Arabia

632

Mecca Mosque or Masjid al-Haram [632: has six minarets]

It contains Kabaa and Zamzam Well.

### **Potala Palace**

architect

Lhasa, Tibet

641

Potala Palace [641: Tibetan palace has nine stories and is 330 meters wide]

Potala Palace is in Potala, a hill next to Lhasa (place of gods or Forbidden City), capital of Tibet, and is home of Dalai Lama. Songtsan Gambo, ruler of Tubo Kingdom, built it. 17th-century rulers built it again.

### **Sutton Hoo Ship Burial**

architect

Suffolk, England

655

Sutton Hoo Ship Burial [655]

Vikings buried leaders in ships.

### **Dome of the Rock**

architect

Jerusalem, Palestine

685 to 691

Mosque of Omar or Dome of the Rock or Haram al Sharif [691: First mosque has dome 30 meters high]

Abdul Malik ibn Marwan, eighth caliph, and Abd al-Malik, ninth caliph, built it.

### **Dravida style**

architect

Orissa, India

700 to 1300

Dravida temples [700 to 1300]

Dravida temples in south India were pyramids and had stories.

### **Nagara style**

architect

Orissa, India

700 to 1300

Nagara temples [700 to 1300]

Nagara temples in Khajuraho region in north India were Hindu curvilinear tower sikhara temples in cross shape.

### **sikhara**

architect

India

700 to 1300

sikhara or temples [700 to 1300]

After 700, main temple-architecture styles are Nagara in north India, Dravida in south India, and Vesara on Deccan peninsula. Hindu curvilinear tower temples {sikhara} were in cross shape and were in Khajuraho region in north India. Dravida temples were pyramids and had stories. Vesara temples had northern and southern influences.

### **Silpasastras**

architect

India

700 to 1300

Silpasastras or Scriptural Texts on Art [700 to 1300: books on art]

They are scriptural texts about art.

### **Vesara style**

architect

India

700 to 1300

Vesara temples [700 to 1300]

Deccan-peninsula Vesara temples had northern and southern influences.

### **Damascus Great Mosque**

architect

Damascus, Syria

706 to 715

Great Mosque [706 to 715: open rectangle plan]

It is on a Roman-temple platform {temenos}.

### **Mont-Saint-Michel abbey**

architect

Normandy

708

Mont-Saint-Michel abbey [708]

One mile offshore in English Channel, a village has a high stone wall and a Benedictine Abbey with a spire. An earthquake and tidal wave [725] washed surrounding plains away and created a tidal marsh, with 13-meter tides. France built a stone causeway to French coast for the 250 inhabitants [1875].

### **Khirbat al-Mafjar Palace**

architect

Jordan River Valley, Jordan

724 to 743

Palace of Khirbat al-Mafjar [724 to 743: Umayyad Islamic style]

Khirbat al-Mafjar Palace is near Jericho.

### **Mshatta Palace**

architect

Jordan

743 to 744

Mshatta Palace or al-Mshatta Palace or Mushattah Palace [743 to 744: Islamic style]

Mshatta Palace is southeast of Amman.

### **Kailasanatha Temple**

architect

Elura, India

757 to 790

Kailasanatha Temple [757 to 790]

Hindu and Buddhist sculptures are in 34 cave temples. Ellora is Elura.

### **Ukhaydir Palace**

architect

Ukhaydir, Iraq

778

Palace of Ukhaydir [778: Islamic style]

Ukhaydir Palace is south of Karbala.

### **Cordoba Mosque**

architect

Cordoba, Spain

784 to 987

Mosque [784 to 987: open rectangle plan]

It is now La Mezquita cathedral. Cordoba is in Andalucia in south Spain.

### **St. Riquier**

architect

Centula, France

790 to 799

Abbey Church of St. Riquier [790 to 799: Medieval church at monastery]

Medieval basilicas have westworks, with two round towers, vaulted narthex, and tower over transept and nave crossing. Square choir space separates apse and transept. Centula is near Abbéville.

### **Palatine Chapel Aachen**

architect

Aachen, Germany

796 to 805

Palatine Chapel or Palace Chapel [796 to 805: Medieval chapel with massive piers and westwork]

Later Medieval chapels had a tall monumental westwork entrance, with two towers.

### **Chichen Itza**

architect

Yucatan Peninsula

800

Chichen Itza [800: Mayan pyramid]

Mayans also built other buildings nearby.

### **Shiva Temple Java**

architect

Borobudur, Java

800 to 900

Temple of Shiva [800 to 900: Spiral path around seven square terraces, and then three circular terraces, shows sculptures of Buddha's life in stupas on circular platforms, and a large Buddha is on top terrace]

Path has 72 bell-shaped reliquary stupa niches. Java restored temple in early 20th century. It is near Jogjakarta.

### **Angkor Wat**

architect

Angkor, Cambodia

800 to 1400

Angkor Wat [800 to 1400: Khmer main temple is world's largest temple, has towers 82 meters high that look like inverted acorns, and has a moat]

It has many sacred seven-headed cobra images.

### **Mayan pyramids**

architect

Yucatan Peninsula

800 to 1400

Mayan and Toltec pyramids [800 to 1400]

Mayans and Toltecs built steep, stepped, symmetrical, stone pyramids, with a temple on top.

### **Qayrawan Great Mosque**

architect

Qayrawan, Tunisia

826 to 852

Great Mosque [826 to 852: open rectangle plan]

Qayrawan Great Mosque is by Aghlabids.

### **al-Mutawakkil**

caliph

Samarra, Iraq

847 to 861

Great Mosque of Samarra [847 to 852: Open rectangle plan has spiral minaret and columns to support wooden roof]

He lived 821 to 861, was Abbasid ruler [847 to 861], and built many palaces. Samarra is north of Baghdad on Tigris River.

### **Pranbanan Temple**

architect

Pranbanan, Java

850 to 950

Pranbanan Temple Complex [850 to 950: Hindu]

Pranbanan Temple is near Jogjakarta.

### **Corvey Abbey Church**

architect

Corvey, Germany

873 to 885

Abbey Church of Corvey Westwork [873 to 885: Medieval church westwork in Carolingian style]

Imperial Abbey of Corvey is east of Paderborn in Westphalia.

### **Ibn Tulun mosque**

architect

Cairo, Egypt

879

Mosque of Ibn Tulun [879: open rectangle plan]

Ibn Tulun, Tulunid-Dynasty founder, built it, on Mount Yashkur [868 to 905].

### **Jaina Temple Palitana**

architect

Palitana, India

960

Temple [960: Jaina style]

Palitana is in Gujarat.

### **St. Pantaleon Abbey**

architect  
Cologne, Germany  
980  
Abbey Church of St. Pantaleon [980: Ottonian church, Benedictine]  
It replaced a Benedictine abbey.

### **Samanid Mausoleum**

architect  
Bukhara, Afghanistan  
999  
Samanid Mausoleum or Mausoleum of Ismail [999: Islamic style]  
Samanid Mausoleum was for Ismail Samani [? to 999], founder of Samanids, and contains other Samanid ruler remains.

### **El Oued**

architect  
El Oued, Algeria/Sahara Desert/Great Eastern Erg  
1000 to 2000  
El Oued oasis [1000 to 2000]  
In driest part of Sahara Desert, an Islamic town has many domes.

### **St. Michael's church**

architect  
Hildesheim, Germany  
1001 to 1033  
St. Michael's church [1001 to 1033: Ottonian church]  
Ottonian churches had two transepts, large choir, small apse, and high walls. Walls went up to clerestory above roof level. Crypt under the choir stored the dead.

### **Gunbad-i Qabus Mausoleum**

architect  
Gorgan, Iran  
1006 to 1007  
Gunbad-i Qabus Mausoleum [1006 to 1007: tower tomb]  
Shams al-Ma'ali 'Abd al-Hasan Qabus of Gorgan and Tabaristan built it.

### **al-Hakim mosque**

architect  
Cairo, Egypt  
1013  
Mosque of al-Hakim [1013: open rectangle plan]  
Fatimid dynasty built it.

### **Hosios Loukas Monastery**

architect  
Phocis, Greece  
1020 to 1040  
Monastery of Hosios Loukas [1020 to 1040: Byzantine high-domed church in Greek-cross shape]  
It is on Mt. Helikon in Boeotia. Greek crosses can have four equal arms.

### **Imperial Cathedral**

architect  
Speyer, Germany  
1030 to 1061  
Imperial Cathedral [1030 to 1061: Romanesque church]  
Conrad II of Salic emperors began Imperial Cathedral.

**Vimala Sha temple**

architect

Mount Abu, India

1032 to 1039

Vimala Sha temple [1032 to 1039: Jaina temple]

Vimala Sha is for the 22nd Jainist saint.

**Westminster Abbey**

architect

London, United Kingdom

1045 to 1400

Westminster Abbey [1045 to 1400: English Late Gothic cathedral]

It is where Britain crowns monarchs and is near Houses of Parliament.

**Cluniac style**

architect

Cluny, Burgundy

1049 to 1109

Abbey of Cluny [1049 to 1109: Romanesque church, Benedictine order]

Romanesque reliefs used primary colors, swirling clothes, body twists, and many people, with sharp and deep cutting {Cluniac style}.

**Romanesque architecture**

architect

Europe

1050 to 1200

Romanesque architecture [1050 to 1200]

Romanesque architecture depended on Roman architecture, with Byzantine and Islamic ornamentation. Romanesque churches had Romanesque arches. Vaulted roofs used stone masonry. Early Romanesque church vaults had groined cross vaults. Later Romanesque churches used ribbed groin vaults, to make wider and higher vaults. Vaults had solid, heavy walls. Exteriors had carvings and decorations. Church shapes were Latin crosses, with entrance facade, long nave, single transept, choir, and apse.

**Florence Baptistry**

architect

Florence, Italy

1059 to 1128

Florence Baptistry [1059 to 1128: Romanesque chapel]

North Doors are by Ghiberti. South Doors are by Pisano.

**St. Mark's Cathedral**

architect

Venice, Italy

1063

St. Mark's Cathedral [1063: large and lavish Byzantine church in Greek-cross shape, with high wooden domes and gilt copper over cross arms]

St. Mark's Cathedral is in Piazza San Marco (St. Mark's Plaza).

**Pisa Cathedral**

architect

Pisa, Italy

1063 to 1272

Pisa Cathedral [1063 to 1272: Romanesque church]

It is near Pisa Campanile [1174] and Baptistry. Pisa is in Tuscany.

**Saint Etienne church**

architect  
Caen, France  
1068 to 1120  
Saint Étienne church [1068 to 1120: Romanesque church]  
Étienne is Stephen.

**St. Sernin**

architect  
Toulouse, France  
1070 to 1080  
St. Sernin basilica [1070 to 1080: largest Romanesque church]  
Toulouse is in Midi-Pyrénées in south France.

**Canterbury Cathedral**

architect  
Canterbury, England  
1070 to 1185  
Canterbury Cathedral [1070 to 1185: Gothic cathedral with Romanesque East End]  
Canterbury Cathedral is on site of original cathedral built by St. Augustine [597] and destroyed by fire [1067].

**St. Savin-sur-Gartempe**

architect  
Gartempe, France  
1080 to 1112  
Abbey Church of St. Savin-sur-Gartempe [1080 to 1112: Romanesque church]  
Gartempe is in Vienne department of former province of Poitou in west France.

**Gloucester Cathedral**

architect  
Gloucester, England  
1089 to 1450  
Gloucester Cathedral [1089 to 1450: English Late Gothic cathedral]  
English Late Gothic cathedrals had steeply curved vaults with ribs passing through clerestory, in Perpendicular style.

**Isfahan Great Mosque**

architect  
Isfahan, Iran  
1092  
Great Mosque [1092: four-ivan plan, with high-walled gate and Gunbad-i Kharka dome]  
Seljuk Turks built it.

**Durham Cathedral**

architect  
Durham, England  
1093 to 1130  
Durham Cathedral [1093 to 1130: Romanesque church]  
Cathedral Church of Christ, Blessed Mary the Virgin, and St. Cuthbert of Durham is in northeast England.

**Sainte Foy at Conques**

architect  
Conques, France  
1100  
Sainte Foy at Conques [1100: Romanesque church]  
Conques is in Midi Pyrénées province in southwest France.

**St. Pierre church**

architect

Moissac, France

1100

Abbey Church of St. Pierre [1100: Romanesque church contained statues with Moorish, Irish, and Persian influences]

St. Pierre church is in southwest France.

**Notre-Dame-la-Grande**

architect

Poitiers, France

1100 to 1200

Notre-Dame-la-Grande [1100 to 1200: Romanesque church]

It was Benedictine abbey before. Poitiers is in west-central France.

**Saint Martin of Tours**

architect

Tours, France

1100 to 1200

St. Martin of Tours church [1100 to 1200: Cluniac pilgrimage church]

Tours is in northwest France.

**Mudejar style**

architect

Aragon, Spain

1100 to 1700

Mudejar architecture [1100 to 1700]

Islamic architecture style {Mudejar style} used brick and glazed tiles.

**Autun Cathedral**

architect

Autun, France

1120 to 1146

Cathedral of St. Lazare at Autun [1120 to 1146: Romanesque church]

Autun Cathedral is near Bourgogne.

**Tintern Abbey**

architect

Monmouthshire, England

1131 to 1300

Tintern Abbey [1131 to 1300: Romanesque church ruins in Cistercian style]

Tintern Abbey is in southeast Wales.

**Tournai Cathedral**

architect

Tournai, Belgium

1146 to 1325

Cathedral Notre-Dame of Tournai [1146 to 1325: Romanesque church with Gothic choir]

Largest church in Belgium is 134 meters long.

**French Gothic cathedrals**

architect

France

1150 to 1550

French Gothic cathedrals [1150 to 1550]

Gothic cathedrals in France were for the Virgin Mary, envisioned as young girl, rather than matron as before. Gothic cathedrals had ribbed groin vaults, Gothic pointed arches, flying buttresses, slender inner columns, triforia, choir, and niches around apse. Column clusters flowed smoothly into pointed arch and across vault. Large colored-glass-piece windows {stained glass window} often had rose shape {rose window}.

### **hallenkirche**

architect

Germany

1150 to 1550

German Gothic cathedral or hallenkirche [1150 to 1550]

In most Gothic churches {hall church} {hallenkirche} in Germany, nave and side aisles were at same height.

### **Italian Gothic cathedrals**

architect

Italy

1150 to 1550

Italian Gothic cathedrals [1150 to 1550]

Most Gothic cathedrals in Italy were in Cistercian style.

### **Pisa Baptistry**

architect

Pisa, Italy

1152 to 1363

Battistero or Pisa Baptistry [1152 to 1363: Romanesque chapel]

It is near Pisa Campanile [1174] and Campo Santo [1278 to 1283]. Pisa is in Tuscany.

### **Le Mans Cathedral**

architect

Le Mans, France

1158 to 1430

Le Mans Cathedral or Cathedral St-Julien [1158 to 1430: Gothic]

First it was Cathedral of St. Julian of Mans. Le Mans is in northwest France.

### **Maurice de Sully**

architect

Paris, France

1163 to 1250

Notre-Dame Cathedral [1163 to 1250: Gothic]

He lived 1120 to 1196.

### **Leaning Tower of Pisa**

architect

Pisa, Italy

1173 to 1250

Leaning Tower of Pisa [1173 to 1250: Romanesque bell tower of Cathedral of Pisa, 60 meters tall, with six columned galleries and belfry. It leans five meters out of line, to south, so north-side galleries are higher]

Romanesque churches can have campaniles.

### **Guichard of Lyons**

archbishop/architect

Lyons, France

1175 to 1550

St. Jean Cathedral [1175 to 1550: Gothic]

Lyons is Lugdunum or Lyons.

### **Maestro Mateo**

architect

Compostela, Spain

1188 to 1211

Santiago de Compostela Cathedral or Saint James of Compostela Cathedral [1188 to 1211: Romanesque church has Portico de la Gloria]

Church was north Spain destination for medieval Way of Saint James (Camino de Santiago) pilgrimage. Santiago is Saint James.

### **Chartres Cathedral**

architect

Chartres, France

1194 to 1220

Chartres Cathedral [1194 to 1220: Gothic]

It has a floor labyrinth.

### **Koutoubia Minaret**

architect

Marrakech, Morocco

1195

Koutoubia Minaret [1195: 77-meter Islamic style square minaret celebrates Sultan Yakub al-Mansur's victory over Alphonso VIII at Alarcos, Spain. Musk is in mortar.]

Koutoubia Gardens are beside it. Marrakech is also Marrakesh.

### **Henri de Sully [Sully, Henri de]**

archbishop/architect

Bourges, France

1195 to 1220

Cathedral of St. Etienne of Bourges [1195 to 1220: Gothic]

He lived 1103 to 1195 and was archbishop of Bourges [1183 to 1195].

### **Rouen Cathedral**

architect

Rouen, France

1200 to 1280

Rouen Cathedral [1200 to 1280: Gothic with Albaine Tower]

Bishop Mellon built first one. Rouen is in northwest France.

### **Aztec pyramids**

architect

Mexico City, Mexico

1200 to 1400

Aztec pyramids [1200 to 1400]

Aztecs built stepped, symmetrical, stone pyramids.

### **Meenakshi Sundareswarar**

architect

Madurai, India

1200 to 1600

Meenakshi Sundareswarar Temple or Temple of Shiva [1200 to 1600: ten pyramid towers 20 stories high have gods and monsters in red and green plaster, and temple walls are 300 meters long]

Temple is in capital of Tamil kingdom. King Tirumula built it. Madurai also has the name Mathurai. Meenakshi is consort of Sundareswarar, who is Shiva.

### **Fossanova Abbey Church**

architect

Fossanova, Italy

1208

Abbey Church of Fossanova [1208: Gothic cathedral in Cistercian style with no towers, no vault ribs, and small windows]

Fossanova is in Lazio, south of Rome, Italy.

### **Salisbury Cathedral**

architect

Salisbury, England

1220 to 1258

Salisbury Cathedral [1220 to 1258: Gothic]

Early English Gothic cathedrals were lower than in Europe.

### **Robert de Luzarches/Thomas de Cormont/Renaud de Cormont**

architect

Amiens, France

1220 to 1269

Amiens Cathedral Notre-Dame [1220 to 1269: Gothic, tallest in France]

Luzarches lived ? to 1223. Thomas de Cormont lived ? to 1228.

### **Alaeddin mosque**

architect

Nigde, Turkey

1223

Alaeddin Mosque [1223: domed]

Seljuk Turks built it.

### **Rheims Cathedral**

architect

Rheims, France

1225 to 1299

Rheims Cathedral [1225 to 1299: Gothic cathedral has tall statues, called Kings and Queens, on porches]

French Gothic cathedrals had west facade with triangular-ended gable porches with pinnacle points.

### **Kubadabad Palace**

architect

Lake Beysehir, Afghanistan

1227

Kubadabad Palace [1227: Islamic style]

It was summer palace of Sultan Alaeddin Keykubad, who reigned 1220 to 1236 over Seljuk Turks. Lake Beysehir is in central Turkey.

### **Alhambra Palace**

architect

Granada, Spain

1230 to 1391

Alhambra Palace [1230 to 1391: Islamic palace of Moorish kings has open rectangle plan and many slender columns with symmetric designs and honeycomb arches]

Alcazaba is old Moorish section, with fountains, arcades, tiles, courtyards, Hall of Ambassadors, and Court of Myrtles. Palace of the Kings has central Court of Lions.

### **Strasbourg Cathedral**

architect

Strasbourg, France

1230 to 1439

Strasbourg Cathedral [1230 to 1439: Gothic cathedral with 150-meter tower with three clock faces and many figurines]

Strasbourg is in Alsace in east France.

### **Tejahapala/Vastupala**

architect

Mount Abu, India

1232

Delwara Temple or Dilwara Temple or Luna Vasahi [1232: Jaina temple]

Delwara Temple is in Gujarat. Tejahapala and Vastupala were brothers.

### **Cologne Cathedral**

architect

Cologne, Germany

1248 to 1880

Cologne Cathedral [1248 to 1880: French Gothic and tallest Gothic cathedral]

Domkirche St. Peter und Maria has Shrine of the Three Kings.

### **St. Mary Magdalene**

architect

Saint-Maximin, France

1250 to 1532

St. Mary Magdalene basilica [1250 to 1532: Romanesque and Gothic church]

Saint-Maximin is in Provence. Charles of Anjou sponsored it.

### **Dabhoi Temple**

architect

Dabhoi, India

1254

Dabhoi Temple [1254: Jaina temple]

Dabhoi is in Vadodara district of Gujarat. Dabhoi is Darbhavati.

### **Purandar Fort**

architect

Poona, India

1290

Purandar Fort [1290: Fortress built for Rajah of Bedar has gate with gold foundation]

It was capital of Shivaji Marathas and Murar Baji. Purandar is in north India.

### **Santa Croce**

architect

Florence, Italy

1295

Church of Santa Croce or Holy Cross Church [1295: Gothic cathedral in Cistercian style had no buttresses but was light and open]

Santa Croce was Franciscan and has Pazzi Chapel [1433 to 1461].

### **Florence Cathedral**

architect

Florence, Italy

1296 to 1436

Florence Cathedral or Santa Maria del Fiore or Il Duomo or Saint Mary's of Florence [1296 to 1436: Gothic and Early Renaissance central plan church in Florentine style]

Early-Renaissance central-plan churches had polygon shapes. Dome is by Filippo Brunelleschi.

### **Palazzo Publico**

architect

Siena, Italy

1297 to 1315

Palazzo Pubbico or Public Palace [1297 to 1315: Gothic palace]

Palazzo Pubbico is in Piazza del Campo (Campo Plaza) beside Torre del Mangia or Mangia Tower [1348].

### **Arnolfo di Cambio [Cambio, Arnolfo di]**

architect

Florence, Italy

1298

Palazzo della Signoria or Palazzo Vecchio or Vecchio Palace [1298: fortress-like Gothic palace with high square tower]

He lived 1245 to 1302. It was Piazza della Signoria or Leaders' Plaza. Signoria were leaders of Florence.

### **Oljeitu Mausoleum**

architect

Sultaniya, Iran

1313

Mausoleum of Oljeitu [1313: Islamic style]

Sultaniya is in south Azerbaijan in northwest Iran.

### **Taddeo Gaddi [Gaddi, Taddeo]**

architect

Florence, Italy

1345

Ponte Vecchio or Vecchio Bridge [1345: bridge]

He lived 1300 to 1366 [rebuilt 1564].

### **Kerman Friday Mosque**

architect

Kerman, Iran

1349

Great Mosque or Friday Mosque [1349: four-ivan plan]

Kerman is on Lut-Desert (Kavir-e lut) edge in south-central Iran. Kerman also has Ganj-Ali-Khan bazaar, bath, and caravanserai.

### **Inca Rope Bridge**

architect

Apurimac River, Peru

1350

Inca Rope Bridge or Bridge of San Luis Rey [1350: Pre-Columbian rope bridge is 50 meters wide and 40 meters above water]

Apurimac River is northwest of Cuzco.

### **Sultan Hasan Madrasah**

architect

Cairo, Egypt

1356 to 1361

Madrasah of Sultan Hassan or Madrasah of Sultan Hasan [1356 to 1361]

Buildings used open square with four rectangular vaulted side halls. Domes can be over open squares. Mausoleums can attach. Original one was from 757 to 762. Qalawun ruled after Babar and built Sharia al-Muiz [1284 to 1285]. His son Khalil ruled [1290]. His brother Sultan Muhammad al-Hasir ruled Egypt [1310 to 1341], dug canal between Alexandria and Nile [1311], and had son, Sultan Hassan bin Mohammad bin Qala'oun.

### **Kremlin**

architect

Moscow, Russia

1365 to 1830

Kremlin [1365 to 1830: Byzantine]

Ivan III ordered Kremlin built. Triangular wall surrounds it. Inside is white Palace of Facets. Spasskaya Tower is gate tower. The Great Bell Tower is 90 meters tall, with gold onion-shaped dome. The King of Bells weighs 216 tons, is seven meters high, rang for only three years [1733 to 1736], and now is on ground. World's largest cannon is also in Kremlin, but they never fired it. Largest building is Grand Palace, built in 19th century.

Kremlin is next to Red Square, Cathedral of St. Basil, and black marble Tomb of Lenin. Cathedral of St. Basil was built in late 16th century.

**Simone da Orsenigo [Orsenigo, Simone da]/Nicola di Bonaventura [Bonaventura, Nicola di]/Giovannino de' Grassi [Grassi, Giovannino de']/Giacomo da Campione [Campione, Giacomo da]/Filippino degli Ugoni [Ugoni, Filippino degli]/Giovanni Solari [Solari, Giovanni]/Guinforte Solari [Solari, Guinforte]/Pier Antonio Solari [Solari, Pier Antonio]/Giovanni Antonio Amadeo [Amadeo, Giovanni Antonio]/Pellegrino Pellegrini [Pellegrini, Pellegrino] or Tibaldi**

architect

Milan, Italy

1366 to 1485

Milan Cathedral [1366 to 1485: French Gothic]

Guinforte Solari lived 1465 to 1481. Amadeo lived 1447 to 1522. Pellegrini lived 1527 to 1596.

**Lorenzo Ghiberti [Ghiberti, Lorenzo]**

architect/sculptor

Florence, Italy

1401 to 1435

Florence Baptistery Dome [1401 to 1422: Gothic International style]; Gates of Paradise [1435: on Florence-Baptistry bronze doors]

He lived 1378 to 1455.

**Gur-i Amir Mausoleum**

architect

Samarkand, Uzbekistan

1405

Guri Amir Mausoleum [1405: Islamic style tomb]

It was for Muhammad Sultan, Timur's grandson, and includes Timur and his sons and grandsons.

**Forbidden City**

architect

Beijing, China

1406 to 1420

Forbidden City or Imperial Palace [1406 to 1420]

Ming Dynasty built Forbidden City.

**GoharShad mosque**

architect

Mashad, Iran

1418

Mosque of GoharShad [1418: four-ivan plan]

Goharshad, wife of Shahrokh, funded Timurid mosque [1405 to 1447].

**Green Mosque**

architect

Bursa, Turkey

1421 to 1424

Yesil Cami or Green Mosque [1421]; Green Mausoleum [1424]

Mehmet I was Ottoman sultan.

**Bartolomeo Bon [Bon, Bartolomeo]**

architect

Venice, Italy/Rome, Italy

1422 to 1434

Ca' d'Oro Palazzo or House of Gold or Saint Sofia Palace [1422 to 1434: Gothic palace, light and ornate]

He lived 1421 to 1464.

### **Filippo Brunelleschi [Brunelleschi, Filippo]**

architect

Florence, Italy

1434 to 1469

Santa Maria degli Angeli or Saint Mary of the Angels [1434: central plan church]; San Spirito [1434]; Dome of Florence Cathedral [1436: Octagonal ribbed dome has two lightweight shells and a small hole, through which light shines on a metal floor plate on June 21]; Pazzi Chapel of Santa Croce or Pazzi Chapel of Holy Cross [1460]; Old Sacristy of San Lorenzo [1469: small round columns and multiple spaces]; Foundling Hospital; Library of San Marco; Piazza of Florence Cathedral [drawing in linear perspective]

He lived 1377 to 1446 and invented Florentine style.

### **Filippo Brunelleschi [Brunelleschi, Filippo]/Luca Fancelli [Fancelli, Luca]**

architect

Florence, Italy

1440 to 1472

Pitti Palace [1440 to 1472: first construction phase used Renaissance style]

Brunelleschi lived 1377 to 1446. Fancelli lived 1430 to 1494. Bartolomeo Ammannati changed it from 1558 to 1570.

### **Topkapi Palace**

architect

Istanbul, Turkey

1459 to 1465

Topkapi Palace or Topkapi Saray [1459 to 1465: Islamic style, on Seraglio]

Sultan Mehmed the Conqueror built it. Ottoman sultans lived there until Abdulmecid I [1839 to 1860].

### **Luciano Laurana [Laurana, Luciano]**

architect

Urbino, Italy

1468

Palace of Urbino [1468: Renaissance style]

He lived 1420 to 1479.

### **Trinita dei Monti**

architect

Rome, Italy

1495

Church of the Trinità dei Monti or Church of the Holy Trinity [1495: Late Renaissance church at Santa Maria Maggiore has two cupolas]

Trinita dei Monti is at top of Spanish Steps, according to Papal town plan. It has the Descent from the Cross fresco by Daniele da Volterra.

### **Qaitbay Mausoleum**

architect

Cairo, Egypt

1496

Madrasah and Mausoleum of Qaitbay [1496: madrasah style]

al-Ashraf Qaitbay was sultan of Mamelukes [1468 to 1496] and who lived 1423 to 1496.

### **Inca Tunnel**

architect

Peru  
1500  
Inca Tunnel [1500]  
Inca tunnel goes 250 meters through cliff.

**Henry VII chapel**

architect  
London, United Kingdom  
1503 to 1519  
Henry VII chapel [1503 to 1519: at Westminster Abbey, contains tomb of Henry VII and Elizabeth of York and is in Perpendicular Gothic style]  
Henry VII lived 1491 to 1547.

**Donato Bramante [Bramante, Donato]**

architect  
Italy  
1506 to 1508  
Original Plan of St. Peter's Cathedral [1506: in Rome]; Tempietto of San Pietro or Saint Peter's small temple [1508: in Rome]  
He lived 1444 to 1514.

**Donato Bramante [Bramante, Donato]/Michelangelo**

architect  
Rome, Italy  
1506 to 1626  
St. Peter's Cathedral [1506 to 1626: Late Renaissance church is world's largest Christian church, 230 meters by 150 meters with roof 15 stories high]  
Michelangelo succeeded Bramante in 1547. Michelangelo lived 1475 to 1564.

**Baldassare Peruzzi [Peruzzi, Baldassare]**

architect  
Italy  
1510 to 1520  
Plan of St. Peter's [1510 to 1520]  
He lived 1481 to 1536.

**Antonio da Sangallo the Younger [Sangallo the Younger, Antonio da]/Michelangelo/Giacomo della Porta [Porta, Giacomo della]**

architect/sculptor  
Rome, Italy  
1517 to 1590  
Farnese Palace [1517 to 1589: Baroque]; Il Gesù Facade [1575 to 1584]; St. Peter's Cathedral Dome [1590: Dome is 20 meters higher than dome of Capitol Building in Washington]  
Porta lived 1533 to 1602 and completed collaborations with Sangallo and Michelangelo. Sangallo the Younger lived 1484 to 1546. Sangallo the Elder lived 1455 to 1534.

**Domenico Bernabei [Bernabei, Domenico] or Domenico da Cortona [Cortona, Domenico da]**

architect  
Italy  
1519 to 1539  
Chateau de Chambord [1519 to 1539: Early Renaissance castle]  
He lived 1470 to 1549.

**Francesco Primaticcio [Primaticcio, Francesco]/Sebastiano Serlio [Serlio, Sebastiano]**

architect  
France

1541 to 1545  
Fontainebleau Palace [1541 to 1545: French Mannerist]  
Primaticcio lived 1504 to 1570. Serlio lived 1475 to 1554.

**Pierre Lescot [Lescot, Pierre]**

architect  
Paris, France  
1546  
Louvre [1546: Court southwest side is High Renaissance]  
He lived 1510 to 1578.

**Giorgio Vasari [Vasari, Giorgio]**

architect/historian  
Florence, Italy  
1550 to 1560  
Uffizi Gallery [1559 to 1560]; Lives of the Most Excellent Architects, Sculptors, and Painters [1550: book]  
He lived 1511 to 1574.

**Barma or Postnik Yakovlev [Yakovlev, Postnik]**

architect  
Moscow, Russia  
1555 to 1561  
Cathedral of St. Basil the Blessed or Intercession Cathedral [1555 to 1561: Byzantine tented church next to Kremlin has bulb-shaped wood towers]  
Cathedral has hipped roof with small arches in tiers. Ivan the Terrible had it built after he captured Kazan Khanate. St. Basil has chapel built by Czar Fedor Ivanovich [1588].

**Carlo Borromeo [Borromeo, Carlo] or San Carlo Borromeo [Borromeo, San Carlo] or Charles Borromaeus [Borromaeus, Charles]**

cardinal/architect/saint  
Milan, Italy  
1564 to 1584  
Instructiones fabricae et supellectilis ecclesiasticae or Instructions for building and decorating churches [1573: book]  
He lived 1538 to 1584 and became Roman Catholic saint.

**Andrea Palladio [Palladio, Andrea]**

architect/designer  
Vincenza, Italy  
1565 to 1570  
San Giorgio Maggiore or Saint George Major [1565]; Villa Rotunda [1567 to 1570]; Palladian furniture style [1550: windows and columns had pediments and cornices, with eagle, scallop shell, and acanthus leaf decorations]  
He lived 1518 to 1580.

**Giacomo Barozzi da Vignola [Vignola, Giacomo Barozzi da]**

architect  
Rome, Italy  
1568  
Il Gesu church or Jesus church [1568: Late Renaissance and pre-Baroque church]  
He lived 1507 to 1573.

**Mimar Koca Sinan [Sinan, Mimar Koca]**

architect  
Edirne, Turkey  
1568 to 1574  
Selimiye Mosque [1568 to 1574]

He lived 1489 to 1588. It was for Selim II.

**Fathpur Sikri Mosque**

architect

Fathpur Sikri, India

1571 to 1575

Great Mosque at Fatehpur Sikri or Fathpur Sikri [1571]; Gate of Victory or Buland Darwaza [1575: mosque gate]  
Mogul emperor Akbar built Fathpur Sikri Mosque near Asra.

**Domenico Fontana [Fontana, Domenico]**

architect

Rome, Italy

1586

St. John Lateran or Cathedral of Rome [1586: Late Renaissance church]; Lateran Palace [1586]

He lived 1543 to 1607. Cathedral began in 324 under Constantine at place according to Papal town plan.

**Carlo Maderno [Maderno, Carlo]**

architect

Rome, Italy

1607 to 1626

St. Peter's Cathedral Facade and Nave [1607 to 1615: Baroque]; Santo Ignacio di Loyola a Campo Marzio or Saint Ignace of Loyola in the Field of Mars [1626: Baroque church]

He lived 1556 to 1629. Santo Ignacio has painting by Pozzo.

**Sedefkar Mehmed Aga**

architect

Istanbul, Turkey

1609 to 1616

Mosque of Sultan Ahmed I or Sultanahmet Cami or Blue Mosque [1609 to 1616: madrasah style]

He lived 1562 to 1622 and was Sinan's student. Ahmed I [1589 to 1617] was Ottoman sultan [1603 to 1617].

**Inigo Jones [Jones, Inigo]**

architect

London, United Kingdom

1619 to 1622

Royal Banquet Hall or Banqueting House of Whitehall Palace [1619 to 1622: Baroque and Classical Palladian style]

He lived 1573 to 1652.

**Jacques Lemercier [Lemercier, Jacques]**

architect

Paris, France

1627 to 1633

Tuileries Palace [1627]; Palais Royal [1633]

He lived 1585 to 1654. Tuileries Garden is near Louvre, where Tuileries Palace was.

**Jahan**

shah/architect

Agra, India

1629 to 1648

Taj Mahal [1629 to 1648: madrasah near Jumna River]

He lived 1592 to 1666 and ruled as Shah [1628 to 1658]. Taj Mahal is at old capital and is tomb of his wife Mumtaz Mahal. It has a square marble platform 100 meters on sides, octagon 60 meters on longest side, walls 23 meters high, and bulb-shaped dome 80 meters high. It has four minarets, at corners, 45 meters high. A walled garden, with reflecting pools and walkways, surrounds it.

**Carlo Maderno [Maderno, Carlo]/Gianlorenzo Bernini [Bernini, Gianlorenzo]**

architect  
Rome, Italy  
1630  
Palazzo Barberini or Barberini Palace [1630: Baroque palace]  
Maderno lived 1556 to 1629. Bernini lived 1598 to 1680.

**François Mansart [Mansart, François]**

architect  
Paris, France  
1632 to 1646  
Château de Maisons-Laffitte [1632 to 1646: Early Baroque palace]; Church of Val de Grace or Valley of Grace church [1640: in Paris]  
He lived 1598 to 1666.

**Isfahan Friday Mosque**

architect  
Isfahan, Iran  
1638  
Friday Mosque or Masjid-i-Jomi [1638: four-ivan plan]  
Shah Abbas of Safavid dynasty started final construction.

**Francesco Borromini [Borromini, Francesco]**

architect  
Rome, Italy  
1638 to 1663  
San Carlo alle Quattro Fontane or Saint Charles of the Four Fountains [1638 to 1641]; Santo Ivo della Sapienza or Saint Ives of Wisdom [1642 to 1660]; Facade of Santa Agnese [1653 to 1663: in Navona plaza]  
He lived 1599 to 1667.

**Louis Le Vau [Le Vau, Louis]**

architect  
Versailles, France  
1661 to 1688  
Palace of Versailles [1661 to 1688: Baroque palace has Hall of Mirrors, Salon de la Guerre, Salon de la Paix, and park]  
He lived 1614 to 1670 and worked for Louis XIV.

**Jules Hardouin-Mansart [Hardouin-Mansart, Jules]**

architect  
France  
1661 to 1709  
Versailles Palace [1661 to 1687]; Grand Trianon [1680: at Versailles]; Place Vendôme [1698: in Paris]; Dome of Les Invalides [1709: in Paris]  
He lived 1646 to 1708. His great-uncle was François Mansart.

**Guarino Guarini [Guarini, Guarino]**

architect  
Turin, Italy  
1666 to 1694  
San Lorenzo [1666 to 1687: in Turin]; Chapel of the Holy Shroud [1667 to 1694: in Turin]; Palazzo Carignano or Carignano Palace [1679: in Turin]  
He lived 1624 to 1683.

**Christopher Wren [Wren, Christopher]**

architect  
England

1666 to 1708

London town plan [1666: submitted after Great Fire]; St. Paul's Cathedral [1675 to 1708: in London]; Royal Hospital [1694: in Greenwich]; Octagon Room of Royal Observatory [1675: in Greenwich]

He lived 1632 to 1723. His clerk was Nicholas Hawksmoor.

**Claude Perrault [Perrault, Claude]**

architect

Paris, France

1667 to 1672

Louvre East Facade and Colonnade [1667 to 1670: Baroque and French Classical palace]; Paris Observatory [1667 to 1672]

He lived 1613 to 1688.

**Johann Bernhard Fischer von Erlach [Erlach, Johann Bernhard Fischer von]**

architect

Vienna, Austria

1694 to 1737

Dreifaltigkeitssäule or Holy Trinity Column [1694 to 1702: monument in Vienna]; University Church [1694 to 1707: in Salzburg]; Church of the Trinity [1694 to 1710: in Salzburg]; Imperial Palace Schönbrunn [1696 to 1711: in Vienna]; Karlskirche or Church of San Carlo Borromeo [1715 to 1737: Baroque church in Vienna]; Hofbibliothek or Imperial Library [1722: in Vienna]; Plan of Civil and Historical Architecture [1721: book]

He lived 1656 to 1723. San Carlo Borromeo is St. Charles Borromaeus.

**Charlottenburg Palace**

architect

Berlin, Germany

1695 to 1699

Charlottenburg Palace or Schloss Charlottenburg [1695 to 1699 Baroque]

Charlottenburg Palace was for Sophie Charlotte, wife of first Prussian king, Friedrich I. Johann Eosander von Goethe was architect as it expanded later. It added east wing [1740 to 1746].

**Berthold Dietmayr [Dietmayr, Berthold]**

abbot/architect

Melk, Austria

1702 to 1736

Melk Monastery [1702 to 1736: Baroque]

He lived 1670 to 1739.

**John Vanbrugh [Vanbrugh, John]**

architect

Oxfordshire, England

1705

Blenheim Palace [1705: Baroque palace shows Italian styling]

He lived 1664 to 1726.

**Egid Quirin Asam [Asam, Egid Quirin]/Cosmas Damian Asam [Asam, Cosmas Damian]**

architect/painter

Germany

1716 to 1733

Weltenburg Church [1716 to 1721: at Weltenburg]; Rohr Church [1716 to 1733: at Rohr]; St. Johann Nepomuk or Asamkirche or Asam Church [1729 to 1733: at Munich]

Egid Quirin Asam lived 1692 to 1750 and was architect. Cosmas Damian Asam lived 1686 to 1739 and was painter and architect.

**Balthasar Neumann [Neumann, Balthasar]**

architect

Bohemia/Würzburg, Germany  
1719 to 1772

Episcopal Palace [1719 to 1744: in Würzburg in Bavaria, Late Baroque palace has many windows, bright colored paintings, and hidden structural members, and Kaisersall paintings have Rococo style]; Vierzahnheiligen or Fourteen Saints [1743 to 1772]

He lived 1687 to 1753.

**Matthäus Daniel Pöppelmann [Pöppelmann, Matthäus Daniel]**

architect

Dresden, Germany

1722

Zwinger Palace [1722: Dresden Baroque]

He lived 1662 to 1737.

**Richard Boyle, Earl of Burlington [Burlington, Richard Boyle, Earl of]**

architect

London, United Kingdom

1725

Chiswick House [1725: Neoclassical house has landscaped garden and has style similar to Villa Rotunda]

He lived 1694 to 1753.

**Dominikus Zimmermann [Zimmermann, Dominikus]**

architect

Bavaria

1728 to 1757

Pilgrimage Church of Steinhausen [1728 to 1733: Late Baroque pilgrimage church has oval hall]; Die Wies Church or Wieskirche [1745 to 1757: has Rococo paintings]

He lived 1714 to 1786.

**François de Cuvillies [Cuvillies, François de]**

architect

France

1734 to 1739

Amalienburg Pavilion [1734 to 1739: beside Nymphenburg Palace near Munich, it has Hall of Mirrors]

He lived 1695 to 1768.

**Domenico Gregorini [Gregorini, Domenico]/Pietro Passalacqua [Passalacqua, Pietro]**

architect

Rome, Italy

1741 to 1744

Basilica of Santa Croce in Gerusalemme or Basilica of the Holy Cross in Jerusalem [1741 to 1744: Baroque church]

Gregorini lived 1700 to 1777. First built in 325, the stone columns remain.

**Nikolaus Pacassi [Pacassi, Nikolaus] or Nikolaus von Pacassi [Pacassi, Nikolaus von]**

architect

Vienna, Austria

1742

Schönbrunn Palace [1742: Rococo]

He lived 1716 to 1790. Johann Bernhard Fischer von Erlach designed and built the Early Baroque original [1696 to 1699].

**Jacques-Ange Gabriel [Gabriel, Jacques-Ange]**

architect

France

1755 to 1775

Place de la Concorde [1755 to 1775: in Paris between Champs Elysées and Tuileries Garden and beside Seine River, with Obelisk of Luxor]; Petit Trianon [1762 to 1768: at Versailles]  
He lived 1698 to 1782.

**Jacques-Germain Soufflot [Soufflot, Jacques-Germain]/Jean-Baptiste Rondelet [Rondelet, Jean-Baptiste]**

architect  
Paris, France  
1758 to 1780  
Le Panthéon or St. Genevieve Church [1758 to 1789: Neoclassical museum]  
Le Panthéon is in Latin Quarter. Soufflot lived 1713 to 1780.

**Robert Adam [Adam, Robert]**

architect  
London, United Kingdom  
1760 to 1773  
New Town of Edinburgh [1760: Neoclassical]; Home House [1773: Neoclassical, in London]  
He lived 1728 to 1792.

**Pierre-Alexandre Barthélémy Vignon [Vignon, Pierre-Alexandre Barthélémy]**

architect  
Paris, France  
1764 to 1807  
La Madeleine or Church of St. Mary Magdalene [1764 to 1807: Neoclassical]  
He lived 1763 to 1828.

**Emerald Buddha Temple**

architect  
Bangkok, Thailand  
1782  
Temple of the Emerald Buddha [1782: in Grand Palace area built for King Tiloka as center of Thailand religious life]  
Temple is part of Wat Phia Kaeo, walled religious complex containing Royal Pantheon, which has life-sized bronzes of former kings and contains many yaks. At roof points are sky licks. Across Chaophraya River is Wat Arun or Temple of the Dawn.

**Karl Gotthard Langhans [Langhans, Karl Gotthard]**

architect  
Berlin, Germany  
1788 to 1791  
Brandenburg Gate [1788 to 1791: Neoclassical]  
He lived 1732 to 1808.

**Pierre Charles L'Enfant [L'Enfant, Pierre Charles]**

architect  
France  
1791  
Washington DC town plan [1791]  
He lived 1754 to 1852 and designed Washington avenues and quadrants.

**Thomas Jefferson [Jefferson, Thomas]**

architect  
USA  
1798 to 1806  
Virginia State Capitol [1798: Neoclassical]; Monticello [1806: his Neoclassical house in Virginia]; University of Virginia [Neoclassical]  
He lived 1743 to 1826.

**Jean François Thérèse Chalgrin [Chalgrin, Jean François Thérèse]/Guillaume Abel Blouet [Blouet, Guillaume Abel]**

architect  
Paris, France  
1806  
Arc de Triomphe or Triumphal Arch [1806: Neo-Baroque arch]  
Chalgrin lived 1739 to 1811. Blouet lived 1795 to 1853.

**John Nash [Nash, John]**

architect  
Brighton, England  
1815 to 1823  
Royal Pavilion [1815 to 1823: House is in Georgian style with Motifs from India]  
He lived 1752 to 1835.

**Charles Bulfinch [Bulfinch, Charles]**

architect  
USA  
1818 to 1830  
State House [1818: Federal style, in Boston]; Massachusetts General Hospital [1820: Federal style, in Boston];  
Capitol Building [1818 to 1830: Federal style, in Washington]  
He lived 1763 to 1844.

**Thomas Telford [Telford, Thomas]**

architect  
Anglesey, England  
1825  
Menai Straits Bridge [1825: first large suspension bridge]; Aqueduct over the Dee; Design for London Bridge  
He lived 1757 to 1834. It is in north Wales.

**Isambard Kingdom Brunel [Brunel, Isambard Kingdom]**

architect  
England  
1829 to 1852  
Design for a Suspension Bridge at Clifton over the Avon River [1829]; Box Tunnel for the Great Western Railway [1833]; Great Western Steamship [1838]; Great Eastern Steamship [1852]  
He lived 1806 to 1859.

**Charles Barry [Barry, Charles]**

architect  
London, England  
1839 to 1859  
Houses of Parliament or Palace of Westminster [1839]; Big Ben [1859: Gothic clock]  
He lived 1795 to 1860.

**Henri Labrouste [Labrouste, Henri]**

architect  
Paris, France  
1843 to 1851  
Bibliothèque Sainte Genevieve or Sainte Genevieve Library [1843 to 1851: Cast iron building]  
He lived 1801 to 1875.

**Robert Mills [Mills, Robert]**

architect  
Washington, DC

1848 to 1855

Washington Monument [1848 to 1885: concrete and iron obelisk]

He lived 1781 to 1855.

**Joseph Paxton [Paxton, Joseph]**

architect

Sydenham, England

1851

Crystal Palace [1851: Three tiers of long parallel halls inside a glass and iron shell had a central entrance hall 35 meters high with trees inside]

He lived 1801 to 1865. Crystal Palace was at Great Exhibition, the first World's Fair. In 1854, it moved to Hyde Park until 1939. Sydenham is now in London.

**Thomas U. Walter [Walter, Thomas U.]**

architect

Washington, DC

1851 to 1865

Capitol Dome and Wings [1851 to 1865: Neoclassical]

He lived 1804 to 1887.

**William Smith [Smith, William]**

architect

Royal Deeside, Scotland

1856

Balmoral Castle [Gothic]

He lived 1817 to 1891. It is near Aberdeen.

**Ferdinand de Lesseps [Lesseps, Ferdinand de]/Alois Negrelli [Negrelli, Alois]**

diplomat/architect

France/Austria/Egypt

1858 to 1869

Suez Canal [1858 to 1869: iron canal from Port Said on Mediterranean to Suez on Red Sea]

Negrelli lived 1799 to 1858 and was from Austria. Lesseps lived 1805 to 1894 and was from France.

**Charles Garnier [Garnier, Charles]**

architect

Paris, France

1861 to 1875

Paris Opera House [1861 to 1875: Neo-Baroque theater]

He lived 1857 to 1874.

**Henry Hobson Richardson [Richardson, Henry Hobson]**

architect

Chicago, Illinois

1866 to 1887

Richardson House [1866: Romanesque]; Trinity Church [1872 to 1877: Romanesque]; Marshall Field Wholesale Store [1885 to 1887: Beaux Arts style seven-story building used iron and concrete and was dismantled in 1930]

He lived 1838 to 1886.

**John Augustus Roebling [Roebling, John Augustus]**

architect

Germany/New York, New York

1869 to 1883

Brooklyn Bridge [1869 to 1883: iron bridge has span of 160 meters from Manhattan Island to Brooklyn]

He lived 1806 to 1869 and patented wire rope, used in suspension bridges.

**Frederic-Auguste Bartholdi [Bartholdi, Frederic-Auguste]**

architect

Liberty Island, New York

1881 to 1886

Statue of Liberty or Liberty Enlightening the World [1881 to 1886: Iron statue is 50 meters tall, on a 50-meter pedestal, and is copper over an iron and steel frame]

He lived 1834 to 1904. Eiffel built the frame. Liberty Island is part of New York City.

**Sarah Winchester [Winchester, Sarah]**

owner/architect

San José, California

1884 to 1922

Winchester Mansion [1884 to 1922: Romantic-style wood house has eight stories and 160 rooms and cost five million dollars]

She lived 1837 to 1922.

**William LeBaron Jenney [Jenney, William LeBaron]**

architect

Chicago, Illinois

1885

Home Insurance Company Building [1885: first to use steel skeleton]

He lived 1832 to 1907. Home Insurance had ten stories.

**Alexandre Gustave Eiffel [Eiffel, Alexandre Gustave]**

architect

Paris, France

1889

Eiffel Tower [1889: International-Exposition iron tower is tallest building in Europe at 350 meters, with four base columns that merge 200 meters above ground into one tower]

He lived 1832 to 1923. Stephen Sauvestre [1874 to 1919] added design.

**Louis Sullivan [Sullivan, Louis]**

architect

USA

1890 to 1899

Wainwright Building [1890: steel-framed first skyscraper, in St. Louis]; Carson, Pirie, Scott and Co. [1899: in Chicago]

He lived 1856 to 1924 and was father of modernism. He was of Chicago school and founded Prairie School of architecture.

**Antoni Gaudí [Gaudí, Antoni]**

architect

Barcelona, Spain

1905 to 1907

Casa Mila or La Pedrera or Quarry [1905 to 1907: Art Nouveau apartment building]; Parque Güell or Güell Park [1900 to 1926]

He lived 1852 to 1926.

**Simplon Tunnel**

architect

Italy/Switzerland

1905 to 1922

Simplon Tunnel or Internationale Ausstellung [1905 and 1922: first one then two railroad tunnels running 20 kilometers through Alps]

It connects Brig with Domodossola.

**Ernest Flagg [Flagg, Ernest]**

architect  
New York, New York  
1906 to 1908  
Singer Building [1906 to 1908: iron skyscraper is 200 meters tall]  
He lived 1857 to 1947.

**Napoleon LeBrun [LeBrun, Napoleon]**

architect  
New York, New York  
1907 to 1909  
Metropolitan Life Insurance Tower [1907 to 1909: masonry and iron tower is 213 meters tall]  
He lived 1821 to 1901.

**Frank Lloyd Wright [Wright, Frank Lloyd]**

architect  
USA  
1909 to 1959  
Robie House [1909: in Chicago]; Taliesin [1911 and 1925: in Spring Green, Wisconsin]; Imperial Hotel [1916 to 1922: in Tokyo]; Fallingwater [1934, 1938, and 1948: Ohiopyle or Bear Run, Pennsylvania]; Johnson Wax Building [1936 to 1939: in Racine, Wisconsin]; Taliesin West [1937: in Scottsdale, Arizona]; Guggenheim Museum [1956 to 1959: in New York]; Marin Civic Center [1957: in San Rafael, California]; Organic Architecture [1939: book]  
He lived 1867 to 1959 and used Cubist ideas. Horizontal houses {prairie house} integrate with surroundings. Well-designed houses {Usonian house} can be affordable.

**Stanford White [White, Stanford]/Charles Follen McKim [McKim, Charles Follen]**

architect  
New York, New York  
1910  
Great Hall of Penn Station [1910: Beaux Arts Neoclassical building was dismantled in 1964]  
White lived 1853 to 1906. McKim lived 1847 to 1909.

**Cass Gilbert [Gilbert, Cass]**

architect  
New York, New York  
1910 to 1931  
Woolworth Building [1910 to 1913: iron skyscraper is 260 meters tall]; George Washington Bridge [1925 to 1931: iron and concrete suspension bridge connects New York and New Jersey across Hudson River]  
He lived 1859 to 1934.

**George Goethals [Goethals, George]**

architect  
USA  
1914  
Panama Canal [1914: between Atlantic and Pacific Oceans]  
He lived 1858 to 1928.

**Walter Gropius [Gropius, Walter]**

architect  
Dessau, Germany  
1928  
Bauhaus style or Staatliches Bauhaus school or House Building [1928: Modern style, at Dessau]  
He lived 1883 to 1969. Style {Bauhaus style} can unite art and craft, without distinction between worker and artist.

**Le Corbusier or Charles-Edouard Jeanneret-Gris [Jeanneret-Gris, Charles-Edouard]**

architect

Switzerland/USA

1928 to 1953

Villa Savoye [1928 to 1929: at Poissy-sur-Seine, France]; Unité d'Habitation or Housing Unit [1946 to 1952: in Marseilles, France]; United Nations Building [1947 to 1953: modern curtain wall building in New York]; Ronchamp or Nôtre Dame du Haut chapel [1955: with projecting sunscreens, at Ronchamp, France]; Towards a New Architecture [1917: book]

He lived 1887 to 1965 and designed "machines to be lived in" {machines à habiter}. He built curtain-wall buildings, with steel skeletons and glass sides.

### **William Frederick Lamb [Lamb, William Frederick]**

architect

New York, New York

1930 to 1931

Empire State Building [1930 to 1931: Iron and concrete Art Deco skyscraper is 102 stories and 400 meters tall]

He lived 1883 to 1958 and worked for Shreve, Lamb, and Harmon Company [1929], with Richmond Harold Shreve [1877 to 1946] and Arthur Loomis Harmon [1878 to 1958].

### **Hoover Dam built**

architect

Black Canyon/Arizona/Nevada

1931 to 1936

Hoover Dam or Boulder Dam [1931 to 1936: 70 stories high, 200 meters thick at bottom, 15 meters wide at top, and 400 meters from side to side, in northwest Arizona]

Lake Mead formed behind it.

### **Leon Moisseiff [Moisseiff, Leon]/Charles Alton Ellis [Ellis, Charles Alton]**

architect

San Francisco, California

1933 to 1937

Golden Gate Bridge [1933 to 1937: steel suspension bridge has span of 1300 meters]

Moisseiff lived 1872 to 1943. Ellis lived 1876 to 1949.

### **Richard Buckminster Fuller [Fuller, Richard Buckminster]**

architect

USA

1936 to 1950

Geodesic Dome [1948 to 1950: tetrahedral frames increase strength with size]

He lived 1895 to 1983.

### **George Bergstrom**

architect

Arlington, Virginia

1941 to 1943

Pentagon [1941 to 1943: Five-sided headquarters of USA Defense Department, world's largest office building, holds 30,000 people and has 300-meter sides, with five concentric pentagons five stories high.]

He lived 1876 to 1955.

### **Ludwig Mies van der Rohe [Rohe, Ludwig Mies van der]**

architect

Germany/USA

1948 to 1951

Lake Shore Drive Apartment Houses or Glass House apartments [1948 to 1951: twin towers in Chicago]

He lived 1886 to 1969.

### **Alvar Aalto [Aalto, Alvar]**

architect/sculptor

Finland

1955 to 1966

House of Culture [1955 to 1958: at Helsinki, Finland]; Student's Hostel [1962 to 1966: at Otaniemi, Finland]

He lived 1898 to 1976 and designed buildings and furniture.

### **Lake Pontchartrain Cause**

architect

Metairie, Louisiana/Mandeville, Louisiana

1956 to 1969

Lake Pontchartrain Causeway [1956 to 1969: iron and concrete bridge is 38 kilometers long, second causeway opened in 1969]

It is not on I-10 and US-90 Pontchartrain Expressway in New Orleans. Lake Pontchartrain is in south Louisiana, northeast of New Orleans.

### **St. Lawrence Seaway**

architect

Atlantic Ocean/Montreal, Canada

1959

St. Lawrence Seaway [1959: opened St. Lawrence River for navigation up to Montreal]

Now canals allow ocean traffic to go to Great Lakes.

### **Othmar Ammann [Ammann, Othmar]**

architect

Switzerland/New York, New York

1959 to 1964

Verrazano Narrows Bridge [1959 to 1964: iron and concrete bridge goes from Brooklyn to Staten Island, has 1400-meter span, has 70-story towers, and is 70 meters above water]

He lived 1879 to 1965.

### **Walter P. Moore [Moore, Walter P.]/John G. Turney [Turney, John G.]**

architect

Houston, Texas

1962 to 1966

Astrodome [1966: First domed stadium had dome 70 meters high and 230 meters diameter]

Moore lived 1937 to 1998.

### **Chesapeake Bay Bridge**

architect

Virginia/Delaware

1964

Chesapeake Bay Bridge-Tunnel [1964: 28 kilometers long, 10 meters above water, with two kilometer-long tunnels in middle underneath ship channels]

William Preston Lane, Jr., Memorial Bridge is on US 50 and 301.

### **Eero Saarinen [Saarinen, Eero]**

architect

Finland/USA

1965

Gateway Arch [1965: steel arch 200 meters tall and 200 meters wide in St. Louis, Missouri]

He lived 1910 to 1961.

### **Minoru Yamasaki [Yamasaki, Minoru]**

architect

New York, New York

1966 to 1977

World Trade Center [1966 to 1977: Two iron and concrete skyscrapers were each 450 meters tall.]

He lived 1912 to 1986. Towers burned down in 2001.

**Max O. Urbahn [Urbahn, Max O.]**

architect

Cape Canaveral, Florida

1968

Vehicle Assembly Building [1968: has the most space inside one room, 180 meters tall and 230 meters square, and has 150-meter tall doors]

He lived 1912 to 1995.

**Aswan High Dam built**

architect

Nile River, Egypt

1972

Aswan High Dam [1972]

Aswan High Dam is in upper Egypt.

**Shayad Monument**

architect

Tehran, Iran

1972

Shayad Monument [1972: iron and concrete monument]

Shah Mohammad Reza Pahlavi built it on west road to airport.

**Bruce Graham [Graham, Bruce]**

architect

Chicago, Illinois

1973

Sears Tower [1973: iron and concrete skyscraper is 480 meters tall]

He lived 1925 to ?.

**Alaska Pipeline**

architect

Alaska

1975 to 1977

Alaska Pipeline or Trans-Alaska pipeline [1975: runs 1300 kilometers from Arctic Ocean through middle Alaska to Valdez]

Alyeska Pipeline Service Company runs it.

**Christopher Alexander [Alexander, Christopher]**

architect

USA

1977 to 1999

Pattern Language [1977: with Sara Ishikawa and Murray Silverstein]; Timeless Way of Building [1999]; Oregon Experiment [1977 to 1999]

Towns and buildings built in natural, intuitive, organic, and evolving way are best. People in society can share ideas {pattern language}. Pattern-language patterns solve problems of living in environments, from large regions down to room parts. Patterns depend on each other.

Larger patterns are about town or community. They have independent regions. They have town distributions, city-country fingers, agricultural valleys, country streets, country towns, and countryside. They have subcultures, scattered work, and local transport areas. They have community of 7000, subculture boundary, identifiable neighborhood, and neighborhood boundary. They have public transportation webs, ring roads, learning networks, shopping webs, and minibuses. They have four-story limit, nine-percent parking, parallel roads, sacred sites, access to water, life cycle accommodation, and men and women. They have eccentric nuclei, density rings, activity nodes, promenades, shopping streets, nightlife, and interchanges. They have household mix, public and private mix, house clusters, row houses, housing hills, and old people everywhere. They have work communities, industrial ribbons, marketplace universities,

local town halls, community-project loops, large markets, health centers, and housing between. They have looped local roads, T-junctions, green streets, path and road networks, main gateways, road crossings, raised walks, bike paths and racks, and children. They have carnivals, quiet back areas, accessible greens, small public squares, high places, street dancing, pools and streams, birthplaces, and holy ground. They have common land, connected play, public outdoor rooms, grave sites, still water, local sports, adventure playgrounds, and animals. They have families and different-size houses. They have self-governing workshops and offices, small services without red tape, office connections, masters and apprentices, teenage society, shop-front schools, and homes. They have individually owned shops, street cafes, corner groceries, beer halls, traveler's inns, bus stops, and food stands.

Smaller patterns are for buildings. They have building complexes, several stories, shielded parking, circulation realms, main buildings, pedestrian paths, building thoroughfares, family entrances, and small parking lots. They have site repair, south-facing outdoor areas, outdoor spaces, light wings, connected buildings, and long thin houses. They have main entrances, half-hidden gardens, entrance transitions, car connections, open-space hierarchies, living courtyards, cascading roofs, sheltering roofs, and roof gardens. They have arcades, paths and goals, path shapes, building fronts, pedestrians not too crowded, activity pockets, and stair seats. They have intimacy gradient, indoor sunlight, common areas at heart, entrance rooms, flows through rooms, short passages, staircase stages, zen-style views, and light and dark tapestries. They have couple realms, children realms, sleeping to east, farmhouse kitchens, private terraces, own rooms, sitting spaces, bed clusters, bathing rooms, and bulk storage. They have flexible office space, communal eating, small work groups, reception areas, places to wait, small meeting rooms, and half-private offices. They have rooms to rent, teenager cottages, old-age cottages, settled workplaces, home workshops, and open stairs. They have light on two room sides, building edges, sunny places, north facing areas, outdoor rooms, street-level windows, openings to street, galleries, six-foot balconies, and connections to earth. They have terraced slopes, fruit trees, tree places, wild gardens, garden walls, trellised walks, greenhouses, garden seats, vegetable gardens, and compost. They have alcoves, window places, fireplaces, eating spots, workspace enclosures, cooking layouts, sitting circles, communal sleeping, marriage beds, bed alcoves, and dressing rooms. They have ceiling-height variety, indoor space shapes, large windows, half-open walls, interior windows, good staircase volume, and corner doors. They have thick walls, closets between rooms, sunny counters, open shelves, waist-high shelves, built-in seats, child caves, and secret places.

Building details have patterns. Buildings have structure that follows social spaces, efficient structure, good materials, and gradual stiffening. They have roof layouts, floor-and-ceiling layouts, outer wall thickenings, corner columns, and column distributions. They have root foundations, ground floor slab, box columns, perimeter beams, wall membranes, floor-ceiling vaults, and roof vaults. They have natural doors and windows, low sill, deep reveals, low doorway, and frames as thickened edges. They have column places, column connections, stair vaults, duct spaces, radiant heat, dormer windows, and roof caps. They have floor surfaces, lapped outside walls, soft inside walls, windows that open wide, solid doors with glass, filtered light, small panes, and half-inch trim. They have seat spots, front-door benches, sitting walls, canvas roofs, flower baskets, climbing plants, stone paving, tile, and brick. They have ornaments, warm colors, different chairs, light pools, and things from life.

Combining patterns gives deeper meaning.