

Definition: **Arch** from *Merriam-Webster's Collegiate(R) Dictionary*

Archbishop

Summary Article: **arch**

From *The Columbia Encyclopedia*

the spanning of a wall opening by means of separate units (such as bricks or stone blocks) assembled into an upward curve that maintains its shape and stability through the mutual pressure of a load and the separate pieces. The weight of the supported load is thus converted into downward and outward lateral pressures called thrusts, which are received by the solid piers (abutments) flanking the opening. The blocks, called voussoirs, composing the arch usually have a wedge shape but they can be rectangular with wedge-shaped joints between them. The underside of the arch is the intrados or soffit and the upper surface above the crown block (keystone) of the arch is the extrados. The point where the arch starts to curve is the foot of the arch, and the stones there are the springers. The surface above the haunch (just below the beginning of the curve) contained within a line drawn perpendicular to the springing line (from which the arch curves), and another drawn horizontal to the crown is the spandril. In modern fireproof construction the word *arch* is also used for the masonry that fills the space between steel beams and acts as a floor support. The arch was used by the Egyptians, Babylonians, and Greeks, chiefly for underground drains, and also by the Assyrians in the construction of vaulted and domed chambers. In Europe the oldest known arch is the Cloaca Maxima, the huge drain at Rome built by Lucius Tarquinius Priscus c.578 B.C. The Romans developed the semicircular arch, modeled on earlier Etruscan structures, in the vaults and domes of their monumental buildings. Its use was continued in early Christian, Byzantine, and Romanesque architecture. In the 13th cent. the pointed arch (used as early as 722 B.C. in Assyrian drains) came into general use. The contact of Europeans with Saracenic architecture during the Crusades is offered among other theories for its introduction into Europe. But it is likely that the pointed arch may have been independently rediscovered in Europe in the Middle Ages as a device for solving many of the mechanical difficulties of vault construction. Its adoption was an essential element in the evolution of the Gothic system of design. With the Renaissance there was a return to the round arch, which prevailed until the 19th-century invention of steel beams for wide spans relegated the arch to a purely decorative function. Although the circular and pointed forms have predominated in the West, the Muslim nations of the East developed a variety of other arched shapes, including the ogee arch used in Persia and India, the horseshoe arch used in Spain and North Africa, and the multifoil or scalloped arch used especially in the Muslim architecture of Spain. In the 20th cent. arches often take a parabolic shape. They are usually constructed with laminated wood or reinforced concrete, materials that give greater lightness and strength to the structure. See triumphal arch.

**APA**

Chicago

Harvard

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arch. (2018). In P. Lagasse, & Columbia University, *The Columbia encyclopedia* (8th ed.). New York, NY: Columbia University Press. Retrieved from <https://search.credoreference.com/content/topic/arch>

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## APA

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## Harvard

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## MLA

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