

Architectural Elements

The Arch

by ZoAnn Campana

This installment of Elements will provide a brief overview of the arch. Although arches are now considered to be a decorative device accentuating doorways and windows, at one time they functioned as a structural element that absolutely transformed architecture.

In the early days of the Roman Empire, monumental architecture such as temples and civic buildings was limited by the technology of the time, namely post-and-lintel construction. The stereotypical Greek temple, with its triangular pediment resting upon a beam (lintel) that in turn is balanced upon massive columns (posts), is a classic example of post-and-lintel construction. While the exteriors of these temples were impressive, the interiors were dark and cramped with numerous posts supporting the immense weight of the roof. Essentially, the exterior evoked a sense of wonder while the interior was merely dedicated to structural support. This all changed with the advent of the arch.

The Romans are mistakenly credited with inventing the arch, which they appropriated from the Etruscans. However, it is entirely appropriate to credit the Romans with perfecting the arch form through extensive experimentation, including vaults (i.e., arches multiplied in depth) and domes (i.e., arches rotated 360 degrees), which culminated in the Pantheon—which had an interior that was as impressive as its exterior.

A true arch is composed of wedge-shaped blocks, or voussoirs, that are held in place by a central keystone. True arches can span greater distances than post-and-lintel structures, as structural weight is transferred from one voussoir to the next, from the top of the arch to the bottom. Roman aqueducts are one such example of long-spanning arched structures.

Through the ages, as the world's cultures adopted the arch, they also adapted it to suit their own architectural needs and aesthetic tastes. An example is the Gothic cathedral, which transformed the rounded

Roman arch into a tall pointed arch to match its heavenward aspirations. This pointed arch was integrated into the lofty interior, which created the sharp vaulted ceilings that we associate with the Gothic style. More than a structural element, the pointed arch also served an aesthetic function, as evidenced by the doorways and windows of these churches.

As building technology progressed, there was less of a need for the structural arch. However, arches remain a stylistic feature of architecture, particularly in the form of door and window openings. In fact, the type of arch employed in a given building is one of several indicators as to architectural style.

There is an almost endless variety of arches, from the common to the obscure. The following is a list, by no means exhaustive, of arches that are most commonly seen in the built environment.

Round Arch

Also called a semicircular arch, round arches are curved in the shape of a full semicircle. This arch is common to the following historic styles: Italian Renaissance, Italianate, Richardsonian Romanesque, and Spanish Colonial Revival.

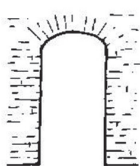
Segmental Arch

A segmental arch is a circular arch with a curve that is less than a semicircle. It is a defining characteristic of the Italianate and Second Empire styles. It is also found in the following styles: French Eclectic, Georgian, Federal, Colonial Revival, Mansard, and Styled Ranch.

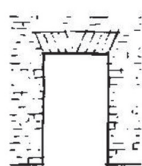
Syrian Arch

Like the round arch, a Syrian arch is also semicircular. The difference is that a round arch is set on perpendicular posts, whereas Syrian arches are curved

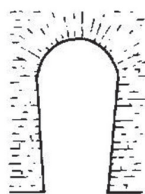
Arch Styles



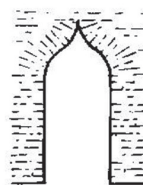
Elliptical



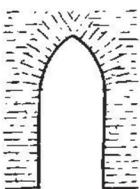
Flat (jack)



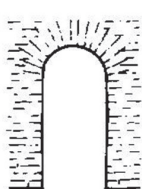
Horseshoe
(Moorish)



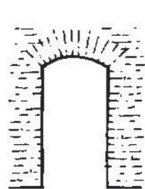
Ogee (ogive)



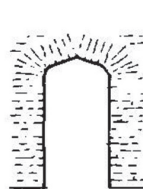
Pointed



Round



Segmental



Tudor

from the ground up. Styles associated with this arch include the Shingle and Richardsonian Romanesque.

Pointed Arch

Also known as the Gothic arch, pointed arches include any arch with a point at its apex. Naturally, it is most closely associated with the Gothic Revival style.

Tudor Arch

Also known as a flattened Gothic arch, a Tudor arch is a somewhat flat, slightly pointed arch common to the architecture of Tudor England. Styles associated with this arch include the Tudor Revival and Gothic Revival.

Elliptical Arch

Also known as a basket-handle or semielliptical arch, as its curve is half an ellipse. This arch is common to the following historic styles: Chateausque, Beaux-Arts, and Italianate.

Ogee Arch

This is a pointed arch composed of reversed curves (i.e. the lower concave and upper convex curves). The ogee arch is commonly associated with exotic revival architecture, as well as the Chateausque style.

Horseshoe Arch

Also known as an Arabic or Moorish arch, this arch has a curve that is more than a semicircle, which makes the opening at the bottom narrower than its greatest span. In the United States, this arch is most common to Exotic Revival styles.

Flat Arch

Although it seems like an oxymoron, there is such a thing as a flat arch. It is an arch, complete with voussoirs, but its lower face is horizontal rather than curved. It is also known as a Dutch arch, French arch, jack arch, or straight arch. Flat arches are associated with the Federal, Beaux-Arts, French Eclectic, and Italian Renaissance styles. 



4 Elm Street displays a round-arched door opening and segmental-arched window openings.



970 Joaquin Miller features a dramatic pointed arch window. Photo courtesy ZoAnn Campana.

ZoAnn Campana is a local Historic Preservation Consultant who serves on the HRPS Board of Directors and is the architectural historian on the City of Reno's Historical Resources Commission.

HRPS at Reno's 150th Celebration

n May 9, the City of Reno celebrated its 150th birthday at the Greater Nevada Field, and HRPS was there to help celebrate. We had a booth at the sesquicentennial celebration, where we quizzed our fellow citizens on local history trivia and hosted a button-making station for the kids. Trivia questions were divided into 11 categories (e.g., People, Streets, Reno's Underbelly, etc.), and these categories were added to a full-size spin wheel. Folks spun the wheel to deter-

mine their trivia category, and those who answered correctly received a prize.

HRPS offers a special thanks to Karalea Clough for donating the spin wheel, Jen Johanson for running the button-making activity, and our cadre of volunteers who made the event so successful. We also offer a hearty thanks to those who donated prizes, including Chris Klaich, Away We Go Travel, Sharon Honig-Bear, Constance Hanson, and Karalea Clough. 

