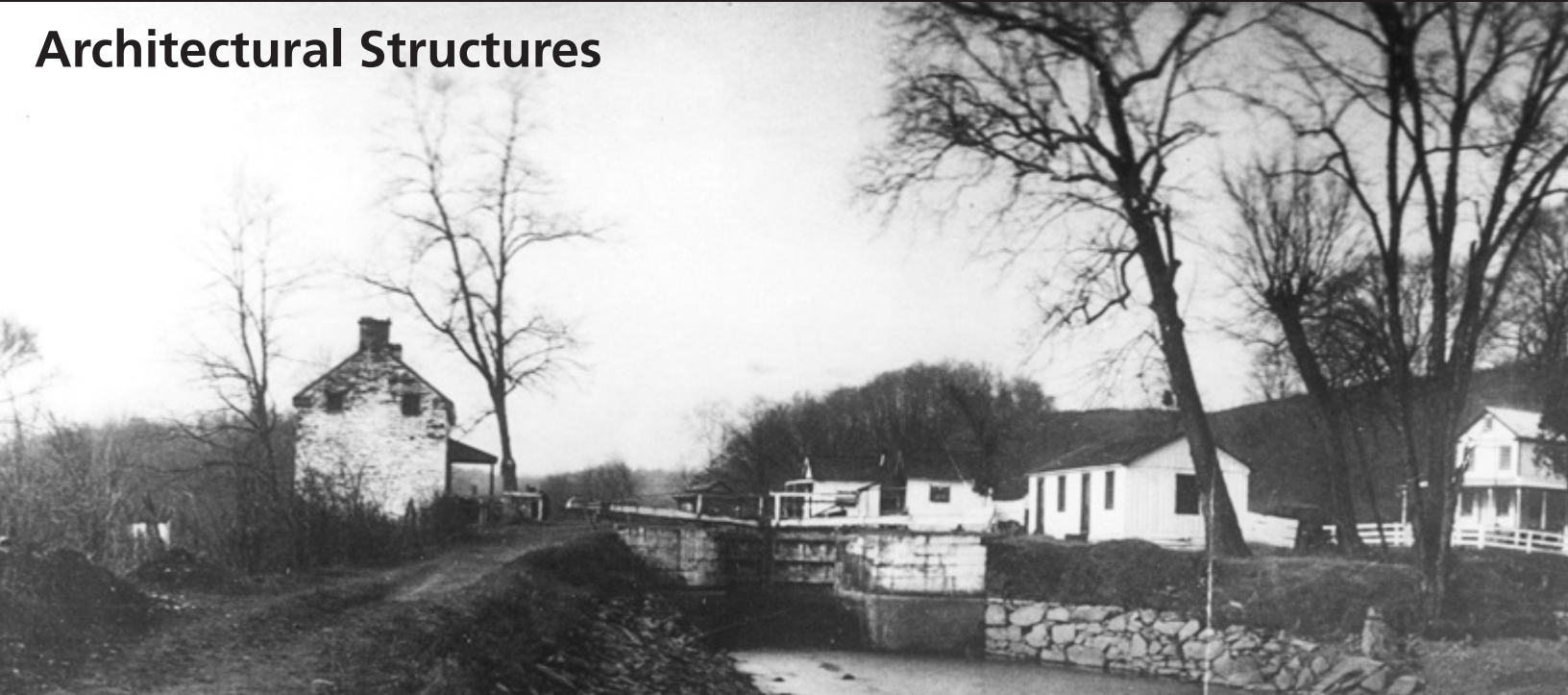




Architectural Structures



Welcome to Lockhouse 22. Named Pennyfield for the last lockkeeper, this lockhouse is one of 27 lockhouses still standing along the canal. Explore the area surrounding the lockhouse and notice some of the unique architectural features of the C&O Canal.

History

The Potomac River is rife with obstacles that thwart water transportation. Rapids and waterfalls, products of the river's elevation change, prompted C&O Canal visionaries to invest in a flat-level water route to run alongside the river: a canal. Although

the idea was simple, the construction quickly proved to be arduous. The area at Pennyfield illustrates some of the architectural features of the canal such as locks, aqueducts, and flumes built to overcome these obstacles.

Locks

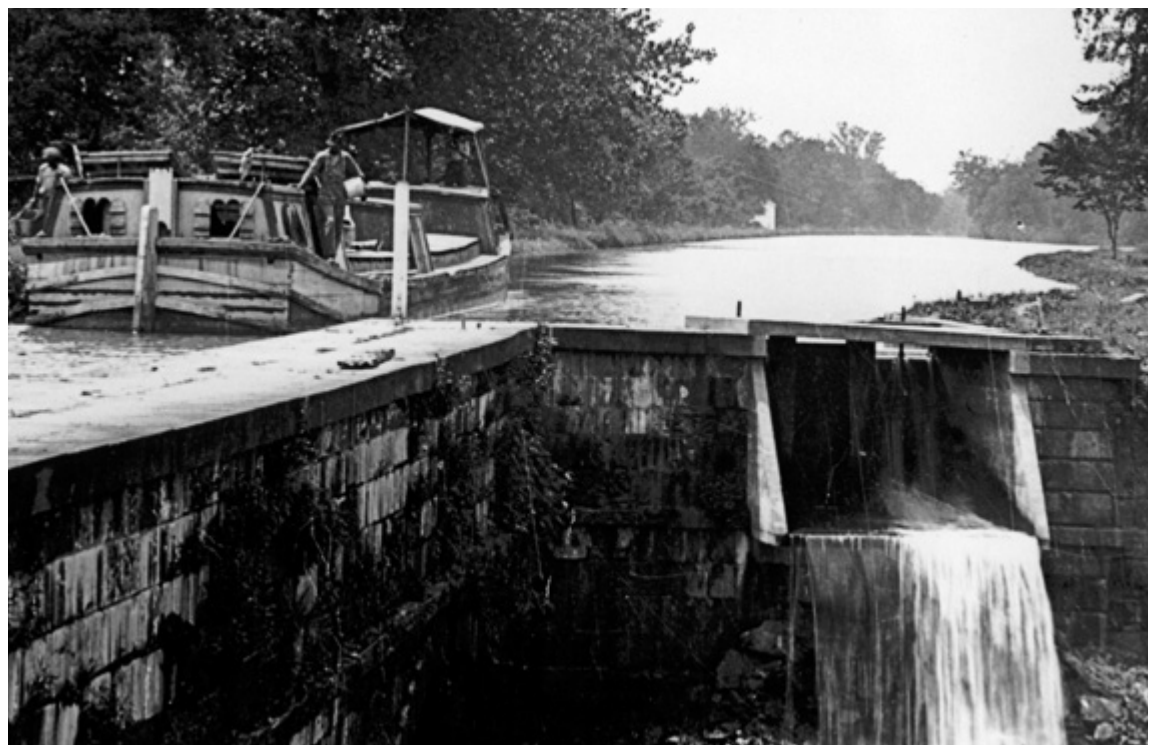
In order to move boats over an elevation change of 605 feet, lift locks were built. Like stairs, they moved boats up and down in elevation as they traversed the canal. This is called "locking through" and took about 10 minutes. The lock at

Pennyfield is a typical lock in its dimensions: 15 feet wide, 16 feet deep and 100 feet long. Today, you can take a boat ride at Great Falls, located 5 miles downstream from here, and experience first hand locking through a lock.

Bypass Flumes

Today, you can see the bypass flume at Pennyfield as a dry channel situated next to the lock on the berm side of the canal. The bypass flume was used to regulate the water downstream of the lock even

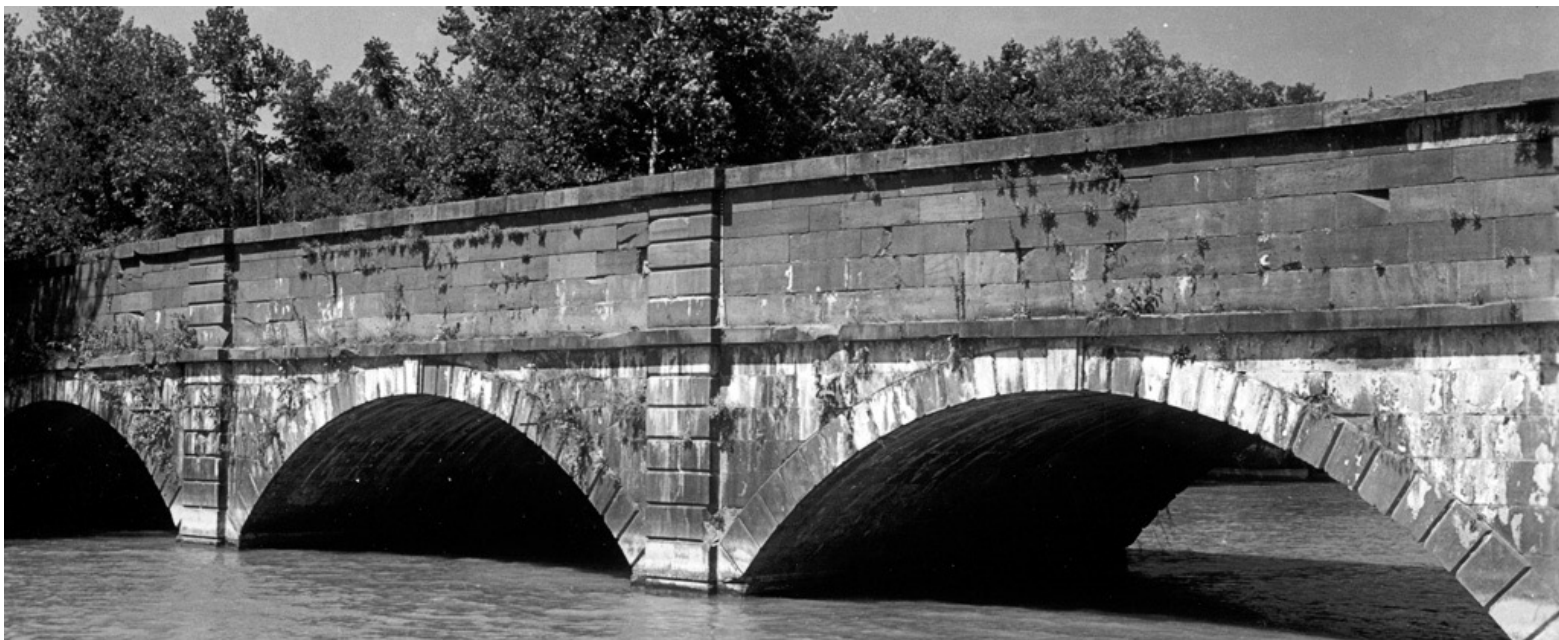
when the lock was not in use. This created a 3-4 mile per hour flow of water making it easier for the mules to tow the boats.



Aqueducts

Aqueducts are bridges filled with water that cross over intersecting streams and rivers. The Seneca Aqueduct, three miles upstream from Pennyfield,

was the first of eleven aqueducts to be built on the canal. It is built of Seneca Sandstone which was also used to build the Smithsonian Castle.



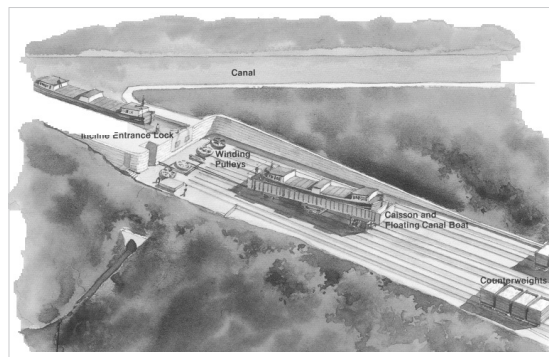
One-of-a-kind Architecture

One of a kind structures necessary for traversing the canal were built to overcome rugged terrain and man made obstacles. Engineering marvels,

these include the Inclined Plane, the Railroad Lift Bridge, and the Paw Paw Tunnel.

The Inclined Plane

In its heyday, there were over 500 boats in operation on the canal. Gridlock occurred near Georgetown where boats often waited up to three days to get to tidewater. The inclined plane was built to move boats from the canal into the Potomac River. Remains of this engineering marvel can still be seen at mile 2.3.



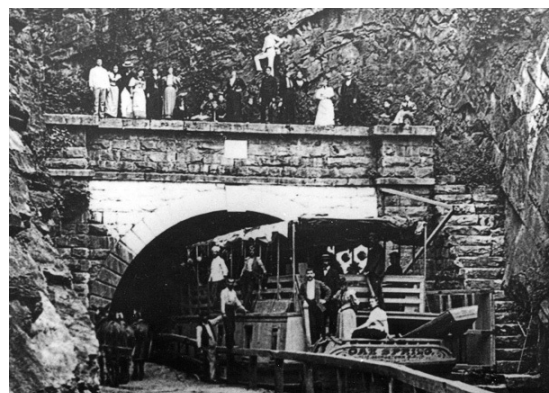
The Railroad Lift Bridge

Not all obstacles on the canal were due to the terrain. At Williamsport, the canal presented a barrier to trains needing to deliver goods and building materials to the power plant. Like a drawbridge, the railroad lift bridge was raised to allow boats to pass, and lowered when the train needed to cross the canal. Built in 1923, the railroad lift bridge was used for one season until the canal closed in 1924.



The Paw Paw Tunnel

Located at mile 155, the Paw Paw Tunnel is the most difficult engineering challenge on the canal. Beset with labor disputes, lack of funds, and the difficulty in blasting through 3,118 feet of solid rock, this labor-intensive work took twelve years to build. Wide enough for only one boat to pass at a time, boats traveling downstream were to yield the right of way, sometimes backing out of the tunnel. On one occasion, two boats met in the middle, neither one yielding until a fire was started at one of the tunnel to smoke them out.



Architectural Legacy

These features were integral in the daily operation of the C&O Canal. Today they stand as a testament to the ingenuity, hard work, and artistry of the men who designed and labored to build this waterway.

As you explore the area surrounding Pennyfield and further along the canal, look for more remnants of these features which allowed for easy traverse along the canal.