

Architecture Around Us

By Lu Donnelly

Celebrating the Triumph of Science over Sewage

Most visitors to the Waterworks Mall near Aspinwall can probably guess that it's named for the water works buildings across the road. Despite their unkempt appearance, they were built in a grand style. Why would something so utilitarian be designed with a Classical cornice and elaborate window surrounds and entries?

Filtration plants, so taken for granted today, have insulated us from the fact that, at the turn of the 20th century, people still regularly died from water-borne illnesses. Typhoid and cholera killed thousands of Americans every year.



The water works at Aspinwall from an early 20th century postcard.

As early as 1822, citizens petitioned the Pittsburgh city council to build a water works along the Allegheny River. After all, Philadelphia had a beautiful Greek Revival water works along the Schuylkill. That complex was designed in 1812 by Frederick Graff, a former draftsman for Benjamin Henry Latrobe who was, in turn, the first fully trained architect to work in the United States. At the time, water was treated only for aesthetic and functional purposes. Municipalities wanted water that was clear, not cloudy, had no apparent smell, and could be delivered into their homes.

When Pittsburgh finally opened a water works in 1828, its construction was the largest municipal expenditure until that time. The sewage system, however, was overtaxed as the city struggled to keep up with the annexations of territory and the influx of immigrants to new neighborhoods. Sewers were seen as necessary to remove excess storm run-off, but the connection to illness had not yet been proven. It was not until 1855 that Dr. John Snow proved that a cholera outbreak in London originated in a public well contaminated by sewage.

In 1879, Pittsburgh built another water works to draw water from the Allegheny River to reservoirs on Highland Avenue and Herron Hill. It was Louis Pasteur's germ theory that finally awakened city officials to the fact that the water supply could cause disease, but it wasn't until the late 1880s that water treatment in some cities began to include tests for microbes invisible to the human eye. In the 1890s, Pittsburgh had the highest death rate from typhoid fever of any of the nation's large cities. Most northern cities lost 35 people per 100,000 of population; Pittsburgh lost 130 people per 100,000. An 1899 mayorally-appointed Pittsburgh Filtration Commission recommended that the city build a slow-sand filtration plant as soon as possible.

The restored Erie water works on Presque Isle Bay, Lake Erie.



Photo by Art Becker



Aerial view of
Erie water works.

Photo by MAA Design

The city hired Frank E. Rutan and Frederick A. Russell, who had both trained with H.H. Richardson, the preeminent architect of the 19th century. His beaux arts training colored their later designs. After Chicago's Columbian Exposition of 1893, progressive citizens turned to architecture to inspire urban immigrants with "American" dignity and values, and to display the civilization of their progressive cities. In Pittsburgh, the Oakland neighborhood showcased this "City Beautiful Movement"; the water works dressed in classical guise continued that impulse.

With the 500-mile increase in the network of water supply pipes in the city, building a new filtration system was no easy feat. It was further complicated by political wrangling that delayed its implementation until 1907. The effect, however, was immediate; by 1912, typhoid deaths in Pittsburgh had dropped to an average rate for a large American city.

Water works in Erie, Pa., evolved similarly. The city built its first pumping station at the foot of Chestnut Street in 1868 and took water directly from Presque Isle Bay. The water in the bay had, at one time, been able to cleanse itself, but by the late 19th century, was being overwhelmed by the increasing fluid waste from the city and its suburbs.

Between 1912 and 1913, the Chester Engineering Company supervised the building of an elaborate water treatment complex consisting of a remodeled pumphouse, filtration station, and administration building. Clean water flowed into the city's pipes from the deeper recesses of Lake Erie rather than from the bay. The red brick buildings in this complex reflect a major change in the civic attitude toward the water supply. The buildings all have rows of arched

windows and deeply overhanging eaves characteristic of the Italian Renaissance. The stone Gibbs surrounds and a four-story corner tower with round-arched windows distinguishes the filtration plant from a merely industrial building and grant it the same revered civic/institutional status achieved by the Pittsburgh water works.

Erie's 20th century treatment of its water works differs considerably from Pittsburgh's. Weber Murphy Fox, an Erie architectural firm, renovated the administration building with its spectacular bay-front views between 1994 and 1995. The following year, the Erie firm Crowner/King Architects brought the offices inside the filtration plant just north of the highway up to modern requirements. The hip-roofed pumphouse south of the Bayfront Highway with its red tile roof and enormous two-story arched windows was renovated in 2001 by architects Roth Marz.

The public is invited by appointment to see the four-story tall Big Bertha steam driven pump, which is a Pennsylvania Mechanical Engineering Landmark. Philadelphia's Fairmount Water Works is also renovated and open for touring. What began as architectural statements of man's triumph over nature have evolved into exciting 21st-century workplaces and tourist destinations in Erie and Philadelphia. In Pittsburgh, the water works buildings sit neglected and ignored amid the bustle of the surrounding shopping center.

Lu Donnelly is one of the authors of *Buildings of Pennsylvania: Pittsburgh and Western Pennsylvania*, a forthcoming book in the 58-volume series on American architecture sponsored by the Society of Architectural Historians titled *Buildings of the United States*. She has authored several books and National Register nominations on Allegheny County topics.