

Stave Falls Power House

Mission, British Columbia

Description

The Stave Falls Power House is a large rectangular building constructed of reinforced concrete and steel and located in Mission, British Columbia. Its south elevation has three rows of paired windows; its north elevation only one row. The building sits wedged between the steeply banked gorges of Stave Falls on a switchyard tailrace deck.

Heritage Values

Built in phases over a period of time from 1909 – 1925, the Stave Falls Power House is valued for its historic, architectural and cultural significance.

Historic:

The Stave Falls Power House is important for its age and for its continuing use as a generating station along Stave River. It is one of three stations in a hydroelectric system begun by Western Canada Power and continued by its successor, B.C. Electric Railway Company. The Alouette, Stave and Ruskin generating systems together form an impressive and powerful service to the Lower Mainland.

The Stave Falls Power House is important for its association with the use of a relatively new hydroelectric technology that was first used at Niagara Falls (Ontario) in 1889. Stave Falls' regional predecessors were the B.C. Electric Railway Company power houses at Goldstream River, near Victoria, and Buntzen Lake, near Coquitlam. By 1913, Stave Falls was supplying power to 1,157 customers in the Lower Mainland and by 1926 it was the largest source of power in the B.C. Electric system. In 1927, when Alouette Lake was diverted by a tunnel to Stave Lake, Stave Falls Power House became the first automated powerhouse in the entire Commonwealth.

The Power House is important for its relationship to a number of important men who, in the early part of the Twentieth Century, provided vision, expertise and funds to ensure that the project went forward and was successful. The most significant of these men were: John Hendry, Vancouver's lumber and railway baron, who supplied the necessary finances; Robert F. Hayward, the General Manager of Western Canada Power; and electrical engineer William R. Bonnycastle, who designed the intake dam and the first phase of the Power House.

Architectural:

The Stave Falls Power House is important for its architectural design, in particular the architectural richness and elegance that is rarely found in industrial buildings. The Western Canada Power Company constructed the first portion in 1909-12 to accommodate two turbine units and two generator units. They added the second portion in 1916 to accommodate two additional units. The B.C. Electric Railway Company, which merged with the Western Power Company in 1921, constructed the next section in 1925 to provide room for a larger fifth unit.

Phase 1 of the building was designed with Italianate style elements, Phases 2 and 3 with

Gothic Revival style elements. Despite this difference in architectural design influences, the overall impression is one of integration and unity.

The main generator hall is an impressive space that is the heart of the Power House. The large turbines and generators that turned water into electricity for so many decades reside in a setting that is both monumental and elegant. The concrete arches in relief on the upstream wall are a graceful reflection of the circular turbines directly below and reinforce the rhythm of the large machinery. The clerestory windows and the exposed steel trusses continue this rhythm at the top. Of equal importance is the story that the interior space and each piece of equipment tells of how water was turned into electricity, and the ability to discern the progress of generator technology as one walks from east to west through the Generator Hall.

Cultural:

The Stave Falls Power House has provided electrical power to the Lower Mainland and the Fraser valley for most of the Twentieth Century and has considerably contributed to their ability to prosper during the early years of urbanization.¹ This building is significant for its longevity through the infancy of B.C.'s hydroelectric industry through to the building's rehabilitation in 2001 as a public educational centre.

Its longevity and nearly one hundred years of power production could only have been achieved through the operators, mechanics and electricians who passed on their knowledge from one generation to the next. The Stave Falls Power House is a physical reminder of all the people who built and maintained the building and who took care of the machinery throughout nearly all of the Twentieth Century, first with the Western Canada Power Company, then the B.C. Electric Company, and finally with B.C. Hydro. The building tells their stories every bit as much as it tells the story of electricity.

The building is a monument to British Columbia and to Canadian enterprise, built entirely by Canadians using Canadian material. It is a remarkable symbol of science over nature; one that endured in the face of changing technology.

Character-defining Elements

General:

- Impressive monolithic structure
- Architectural richness unusual in an industrial building
- Location on the narrow and steeply-banked course of the Stave River
- Poured-in-place concrete wall
- Expressive pilasters that punctuate the structural bays
- Repetition of windows
- Clear cornice line
- Loosely Italianate style of phase one of building
- Loosely Gothic Revival style of phases two and three of building
- Stepped parapets at each gable end

South Elevation only:

¹ Stanley, Meg and Hugh Wilson, Station Normal, Douglas & McIntyre, Vancouver, 2001, p. vi.

- Clear cornice lines at both roof levels
- Switchyard tailrace deck with one tower
- Line of lamp standards and steel railings that mark the south edge of the deck
- Vista looking south
- Segmented structural arches of lower portion of deck

North Elevation only:

- Penstock deck
- View to intake dam
- Penstocks snaking downwards from the dam to the underside of the deck and building

Interior:

- Main Generator Hall, in particular:
- Large, column-free space
- Elegant proportions
- Poured-in-place concrete walls with an internal steel frame that supports a steel truss roof structure which produces spans of 21m.
- West and east walls are poured against the modified rock faces of the river canyon
- Clerestory windows
- Graceful relief arches on north wall
- Exposed steel trusses in the ceiling
- Mezzanine gallery along west wall
- Generators and turbines
- Penstock No. 5
- Travelling ceiling crane
- Set of steep stairs in southeast corner
- Evident progress of generator technology
- The generators and other machinery
- Control room and its equipment
- High tension room
- Historic urinals