

Hot Springs National Park, Bathhouse Row:
Superior Bathhouse: Mechanical & Piping Systems
One mile North of US Highway 70
on State Highway 7
Hot Springs National Park
Garland County
Arkansas

HAER NO. AR-4-A

HAER
ARK,
26-HOSP,
3-A-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
P.O. Box 37127
Washington, D.C. 20013-7127

HAER
ARK,
26-HOSP,
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HISTORIC AMERICAN ENGINEERING RECORD

HOT SPRINGS NATIONAL PARK, BATHHOUSE ROW:
SUPERIOR BATHHOUSE: MECHANICAL AND PIPING SYSTEMS

HAER NO. AR-4-A

Location: Hot Springs National Park, Garland County, Arkansas. One mile north of US Highway 70 on State Highway 7 (Central Avenue).

Date of Construction: 1916

Present Owner: National Park Service

Present Use: Presently vacant.

Significance: The Superior Bathhouse is part of Bathhouse Row, which represents a typical American Spa. The spring piping, heating and ventilation systems are examples of early twentieth century state-of-the-art technology.

Historian: Diana Prideaux-Brune
August 1987

[See HAER No. AR-4 for an overview history of Bathhouse Row.]

[See HABS No. AR-28 (A through I) for documentation of the architectural features of the bathhouses on Bathhouse Row.]

The unique aspects of the Superior forced-air system were in the plenum. The mixing dampers were automatically adjusted, as in most of the other bathhouses, and the by-pass dampers under the heating coils were automatically controlled. As in the Maurice, the pneumatic thermostat in the plenum regulated the volume of air passing through the heating coils by controlling the by-pass dampers. In addition to the by-pass dampers, a hatch connecting the hot-air chamber with the tempered-air chamber was automatically regulated. When maximum heating is necessary, the hatch allowed heated air to enter the portion of the plenum normally restricted to tempered air. In this way, the maximum volume of heated air could enter the ducts through both the tempered and hot-air dampers. The air passage through tempering coils, blower, and heating coils was otherwise typical.

With the Lamar Bathhouse, the Superior provides the best remaining examples of the draft regulator, which played such an important role in the automatic control of each zone.

The specifications provided for a blower with a capacity of no less than 14,000 CFM, and the vitiated air was removed by means of vent risers, discharging into the attic space. The temperature of the hot room was to be 125 degrees, the bath halls 98 degrees, pack rooms 100 degrees, cooling rooms 85 degrees, and the balance of the building to be maintained at 70 degrees. The forced-air and radiant heat system was designed to maintain these temperatures with an outside air temperature of zero degrees.

The original upright sectional boilers have since been replaced with gas-burning units. Wall and floor-mounted radiators were the hospital loop type, and were cast iron in a rococo pattern. Separate thermostats were used to control the radiators and mixing dampers.

MECHANICAL EQUIPMENT INVENTORY

BOILERS:

Original boilers have been replaced by newer gas-burning boilers. Boilers supply steam to radiators and blower heating coils.

American Standard

no other markings

United States Radiator Corp.

Capitol Gas Boiler

900,000 BTU/HR input, 720,000 BTU/HR normal AGA output

720 lbs/hr minimum valve capacity

series #: 9-32

McDonnell and Miller #47 Boiler Water Control

25 lbs. maximum pressure

patent #: 1,934,486; 1,997,785; 19558

large-area spring-closing blow off valve

CONDENSATE RETURN:

A vacuum system returns condensate from the heating coils and radiators to the boiler. Pressure and water levels monitored by valves.

"Watchman" Condensate Pump

ITT Hoffman Specialty, Indianapolis, IN

Type: WC 12 20A

Serial #: 7412AG

EDR: 12000, PSI: 20

BLOWER:

The blower chamber and plenum are constructed of sheet metal on a concrete foundation. Blower of squirrel-cage type, 32-inch diameter. First patent: 1900. Tempered and heated air is directed by sheet-metal dividers within the blower chamber and plenum. The blower forces heated air to the various zones of the building.

Sirocco Blower

American Blower Co.

General Electric induction motor

serial #: 693223

Type: KT-4

5 HP, 3 phase, 220 volts

carbon brushes

TEMPERATURE CONTROL:

A pneumatic system controls the dampers of the forced-air system, and all radiators with the exception of those in the basement, corridors, and hot room. The compressor for the system is not evident.

RADIATORS:

Radiators with two pipes for condensate return and steam supply are used. Both wall and floor mounted units are used.

LAUNDRY:

Washing Machines:

Pellerin Milnor Corp.
25 lbs. Commercial Washer Extractor
Model #: CWE 25
60 cycle, 3 phase, 220 volts
Serial #: 5655, 5656

Dryers:

Pellerin Milnor Corp.
Serial #: 194410, 194411
Model: 37 x 30 AB
113,000 BTU/HR

Water Heaters:

Sentry Glass-Lined
State Industries, Ashland, TN
Model #: 80 199 ES
Serial #: E792 8708
199,000 BTU/HR input
automatic storage and circulation
Thermoglass Glasslined
Weben Manufacturers Inc. Dallas, TX
Model #: 250-336
Serial #: 14343
250,000 BTU/HR input
150 PSI working pressure

THERMAL WATER FLOW METER:

Bristol Metering Equipment
Meta-Flowmeter
6 psi line pressure

[See HAER No. AR-4 for bibliography.]