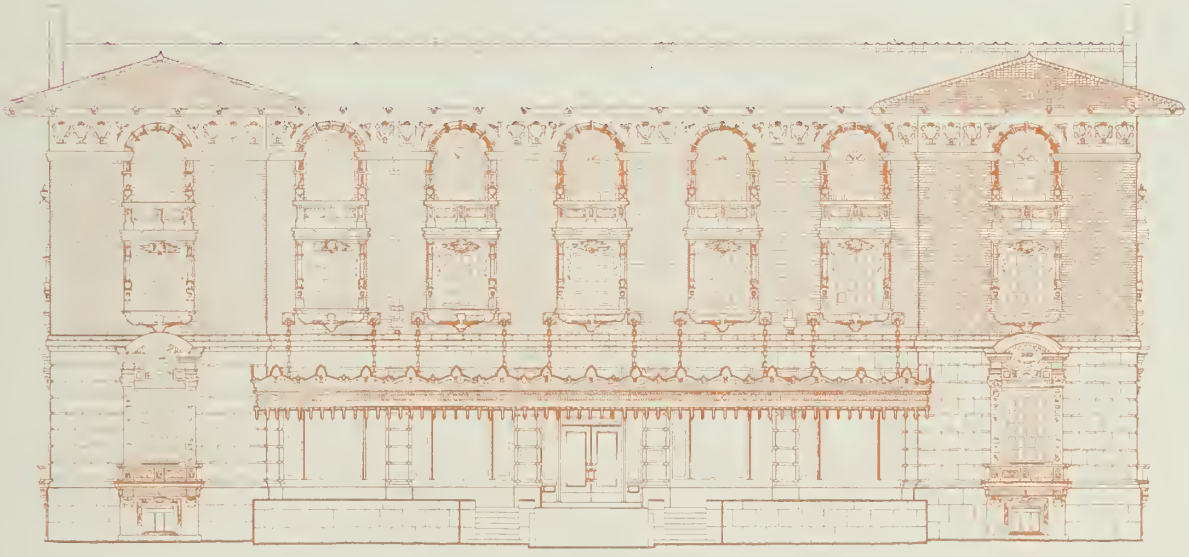
Bathhouse Row Adaptive Use Program

The Fordyce Bathhouse: Technical Report 5

hot springs national park



BATHHOUSE ROW ADAPTIVE USE PROGRAM

THE FORDYCE BATHHOUSE: TECHNICAL REPORT 5

HOT SPRINGS NATIONAL PARK
Garland County, Arkansas

June 1985

U.S. Department of the Interior / National Park Service

CONTENTS

PLANS AND FIGURES

TABLES

INTRODUCTION

The National Park Service is proposing to offer vacant bathhouses within the Bathhouse Row historic district at Hot Springs National Park for adaptive use. The leasing of historic properties was authorized by Congress in 1980 by amending Section 111 of the National Historic Preservation Act. The National Park Service has established procedures for the program "Leases and Exchanges of Historic Property" (36 CFR 18) and in the "Historic Property Leasing Guideline" (NPS-38). Proposed uses that would provide accommodations, facilities, or services to a substantial number of park visitors would be accomplished through concession contracts under the authorities of the Concessions Policy Act of 1965.

The purpose of the adaptive use program at Hot Springs is to preserve the historic bathhouses through compatible use and maintenance of the buildings by private businesses or individuals. The National Park Service also intends that such use will help restore the traditional levels of visitor activity along Bathhouse Row to maintain the historic scene and to contribute to the revitalization of downtown Hot Springs. Additional information on the park, Bathhouse Row, and National Park Service management proposals for the area is contained in the draft General Management Plan/Development Concept Plan which is available at the address below.

This report is number five in a series of seven technical reports (listed below) prepared by the NPS Denver Service Center to provide technical information for use in the development of proposals by prospective lessees or concessioners and in the evaluation of proposals by the National Park Service. The reports describe the Bathhouse Row landscape and structures and provide detailed information on historical development, significance, and present conditions of the landscape and each vacant bathhouse.

Bathhouse Row Adaptive Use Program
Technical Report Series

The Bathhouse Row Landscape: Technical Report 1

The Superior Bathhouse: Technical Report 2

The Hale Bathhouse: Technical Report 3

The Maurice Bathhouse: Technical Report 4

The Fordyce Bathhouse: Technical Report 5

The Quapaw Bathhouse: Technical Report 6

The Ozark Bathhouse: Technical Report 7

For additional information on the Bathhouse Row Adaptive Use Program, please contact the following individuals:

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(505) 988-6385

Superintendent
Hot Springs National Park
P.O. Box 1860
Hot Springs, Arkansas 71901-1860
(501) 624-3383

DESCRIPTION

The Fordyce Bathhouse is the largest and most ornate structure on Bathhouse Row. It was designed by the architectural firm of Mann and Stern of Little Rock in the Spanish Renaissance Revival style with lavish interior appointments and detailing (see figures 1, 2, and 4). Most of the exterior of the first floor is cream-colored glazed-brick and tile; the entire west or front facade and the northwest and southwest corners have terra cotta cladding. The second and third floors are also of brick. The west facade and north and south sides of the pavilions are composed of losenge- or diaper-patterned light-yellow and brown tapestry brick.

Flat portions of the roof were originally covered with a felt/asphalt roofing; now they are coated with tar and gravel. Square concrete slabs have been placed on top of the third floor roof and the courtyard roof over the first floor is inlaid with red quarry tile. Red Spanish tile lines the rest of the partially pitched roof and its overhang, along with the elevator penthouse and non-skylighted portion of the museum. Under the cornice the heavy frieze is embellished with a vase design, and the first floor is treated with rustication in terra cotta. Most of the decorative elements carry an aquatically inspired motif.

The entrance is marked by a concrete ramp which leads to an open porch with a tiled floor. Like the foundations, the porch is concrete faced with high quality Arkansas Batesville stone; above it is a glass-roofed copper marquee with a parapet enriched with Greek motifs. Slightly protruding pavilions capped by parapet walls are on the north and south ends of the porch area.

The windows are of special interest. Four large plate-glass windows with narrow casement windows on either side overlook the porch. A highly decorative terra cotta window is adjacent to the porch on either side. The second floor windows have a common terra cotta frame which arches at the top and forms a richly worked balcony at the third story (figure 3). A terra cotta frieze runs between the arches of each window with a terra cotta dentil moulding above it. Somewhat in the manner of the Spanish Plateresque, these windows have colonettes on either side of the lintel which is enriched with a carved head. Seven of these windows occur in front and one on each side at the front. The third-story windows are arcuated and are treated with the Gibbs surround. All the other windows, except the stained glass found above the porch and on the south side, are of painted-wood trim with terra cotta sills.

The Fordyce is a three-story building with basement and contains about 28,000 square feet of space. As originally built, the concrete-walled and concrete-floored basement held two duck-pin bowling lanes, attendant's quarters, and rooms for various boilers, machinery, and heating and ventilating systems. The bowling lanes have been removed, but the rest of the basement remains relatively unchanged (figure 5). The Fordyce spring has been enclosed in a closet-like tile room with arched ceiling, and sealed with a plate-glass window looking into the spring.

Figure 1: Fordyce Bathhouse, 1984 (Source: Historic American Buildings Survey)

Figure 2: Fordyce Bathhouse, 1984 (Source: Historic American Buildings Survey)

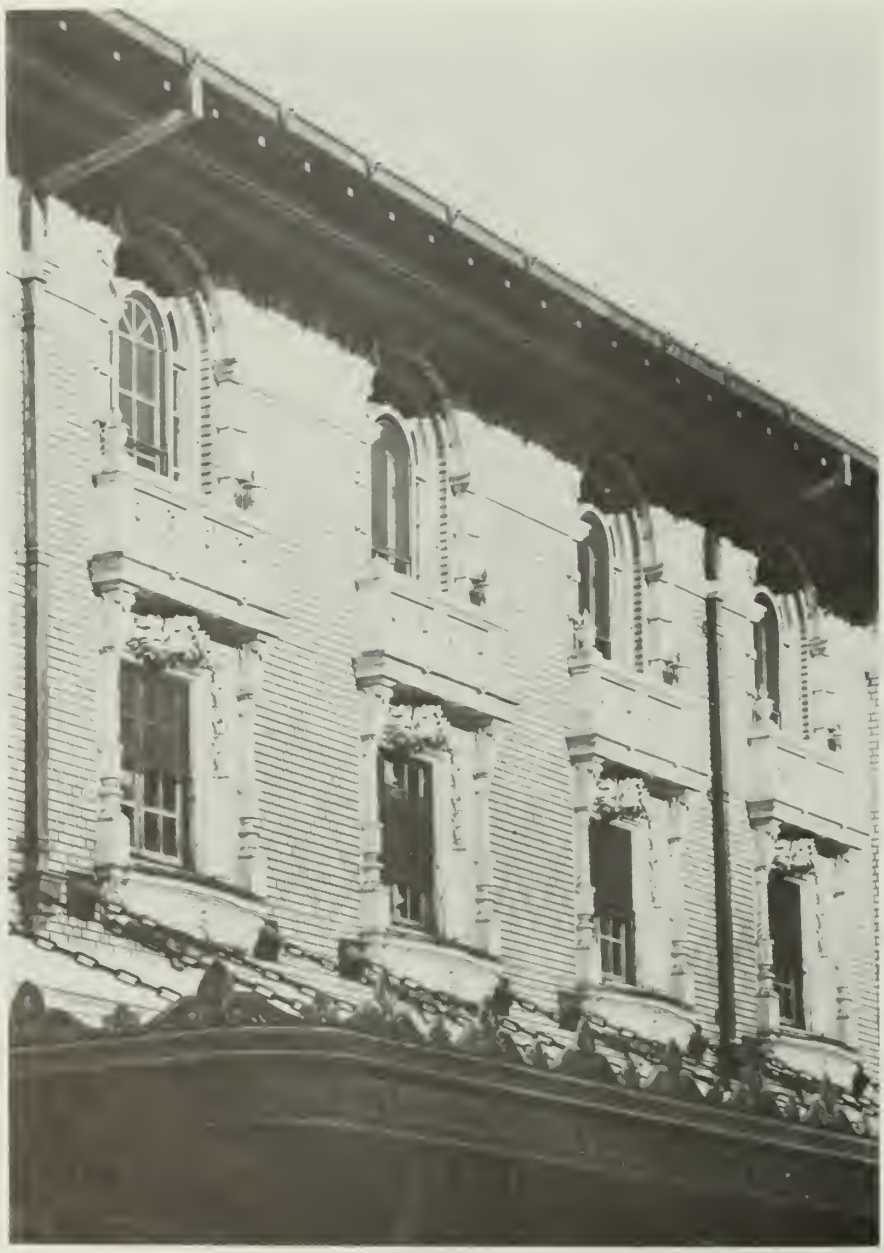
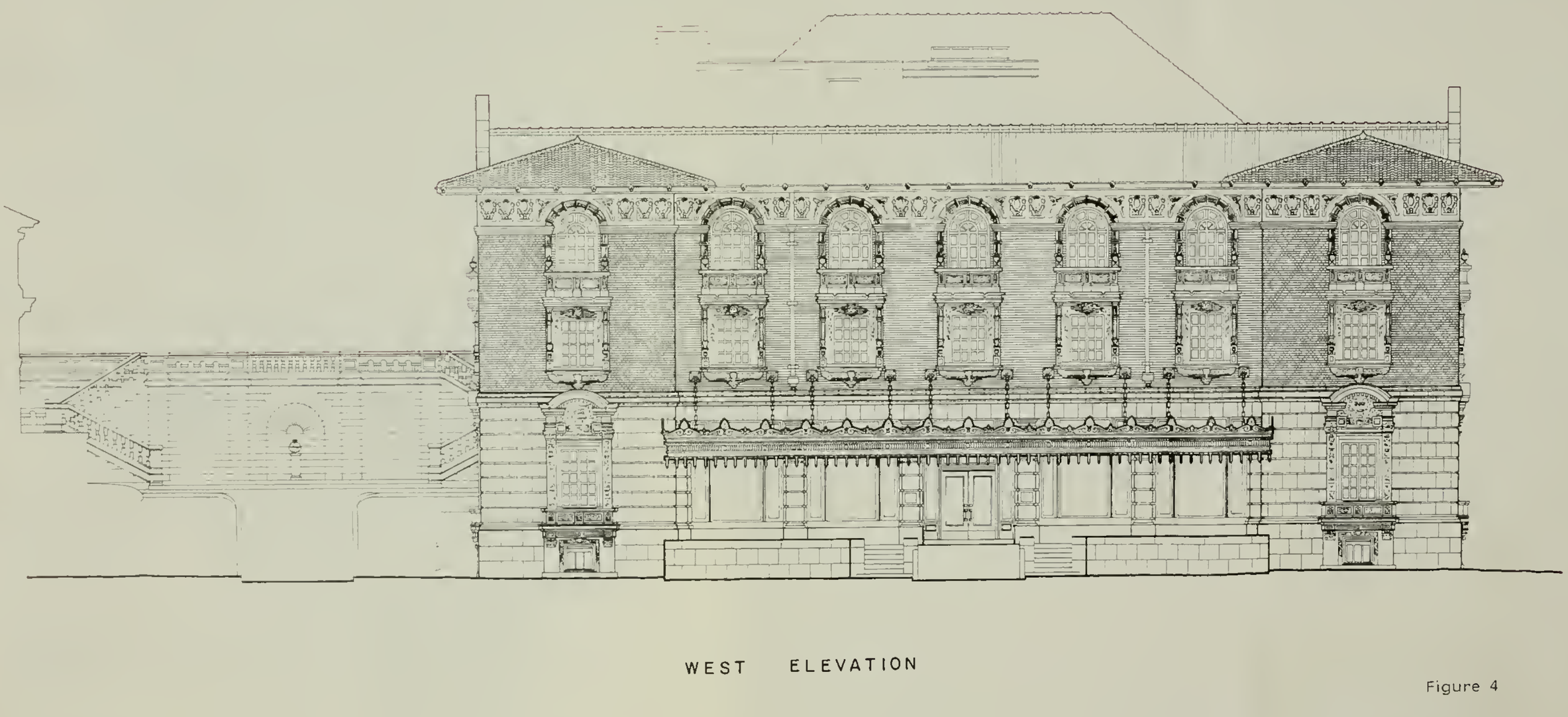
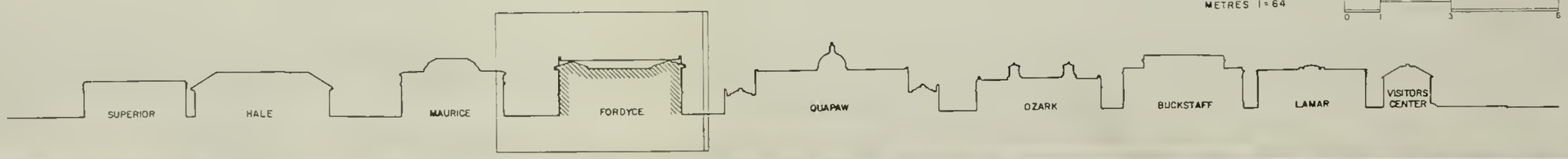


Figure 3. Upper Story Windows, Fordyce Bathhouse Facade, 1984 (Source: Historic American Buildings Survey)



WEST ELEVATION

Figure 4



SCALE FEET 3/16"=1'-0" METRES 1=64

0 5 10 20
0 1 3 6

DRAWN BY: LEONARD MKLIWINSKI 1984

HOT SPRINGS NATIONAL PARK
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

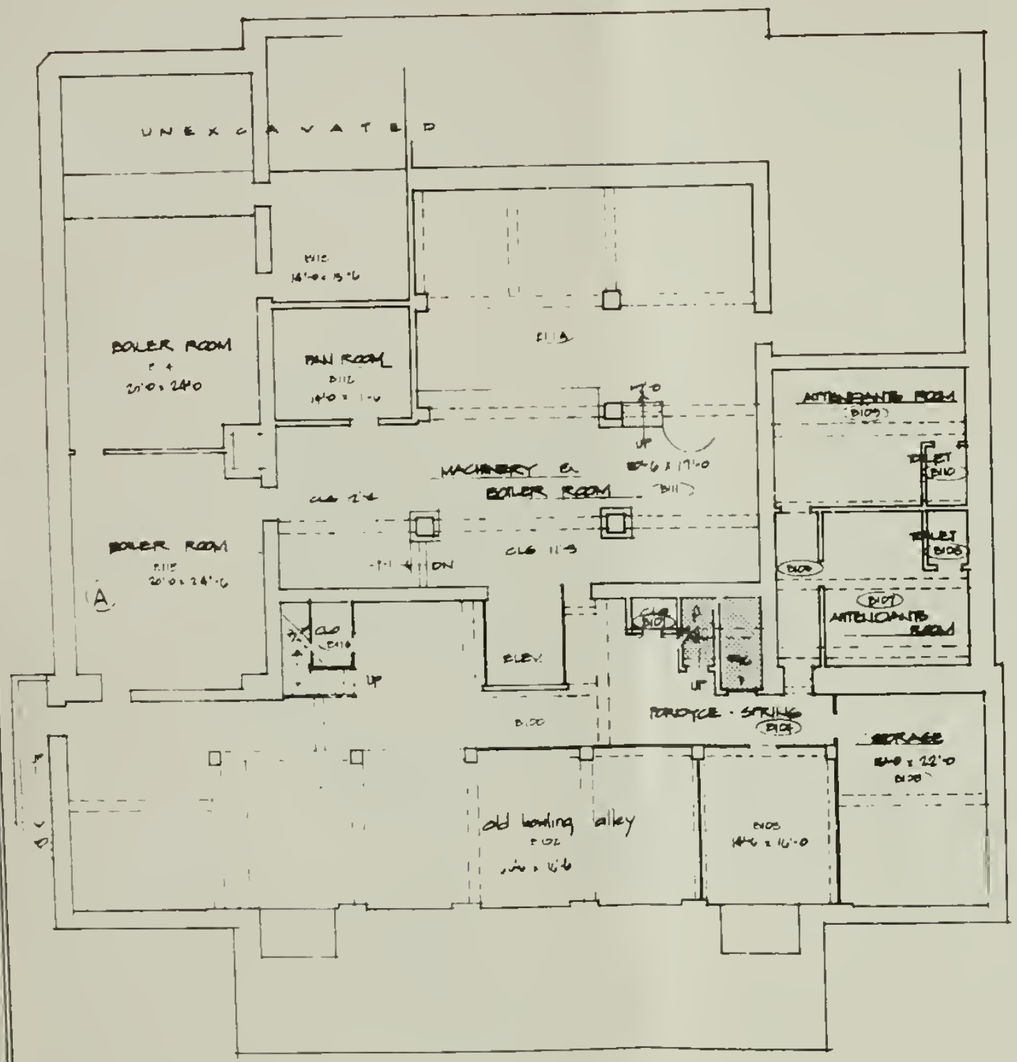
CENTRAL AVENUE

FORDYCE BATH HOUSE
GARLAND AVENUE
HOT SPRINGS
ARKANSAS

SURVEY NO. AR-281D

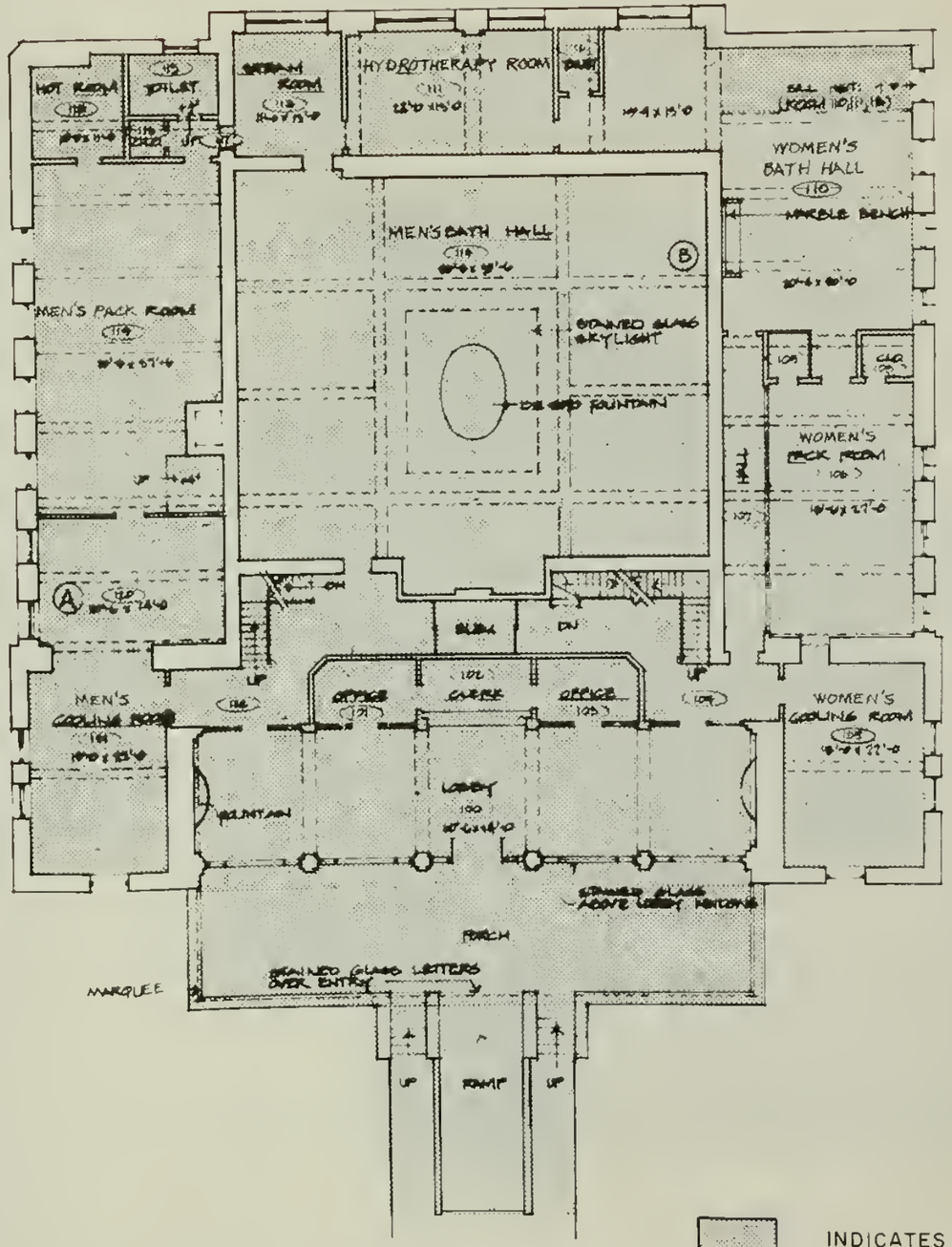
HISTORIC AMERICAN BUILDINGS SURVEY
SHEET 1 OF 1 SHEETS

NAME AND LOCATION OF STRUCTURE



BASEMENT PLAN

5,889.4 SQ. FT.



FIRST FLOOR PLAN

8,338.0 SQ. FT

8 0 8 16

SCALE OF FEET

INDICATES DISTINGUISHING HISTORIC INTERIOR SPACE.

Figure 5

BASIC DATA 128/26,000

DESIGNED EXISTING	SUB SHEET NO	TITLE OF SHEET: FORDYCE BATHHOUSE FLOOR PLANS TECHNICAL REPORT #5	DRAWING NO 128 40,016
DRAWN SE/SW TEAM			PKG NO 172
TECH REVIEW THORSON			SHEET 8 OF 14
DATE 5/65			

The large marble-walled lobby with its plate-glass windows, stained-glass transom windows, pilasters, rich decoration, and tiled floors occupies the front of the first floor (figure 6). A decorative-tiled fountain is at each end of the lobby, and in the center is a wood-topped marble counter containing metal drawers. When first built, this area also contained the manager's private office, check room, and clerk's office with lockers for valuables. To the rear of the first floor are the men's and women's bathing halls, with a 30-tub capacity. The men's bath hall is one of the most ornate on the Row with its stained-glass skylight, marble benches, and the large sculptured De Soto fountain (figure 7). Therapy, pack, and cooling rooms were also located on the first floor; several of these rooms contain stained-glass windows. A steel-and-translucent glass elevator provides easy access to the upper floors.

When first built, the second floor included additional bathing facilities--dressing rooms, lockers, cooling rooms, and massage and mechano-therapy departments (figure 9). Now it is largely occupied by wood changing stalls. From the second floor dressing rooms there is entry to a centrally located quarry-tile courtyard. The courtyard contained screened space for nude sunbathing.

An assembly hall, a ladies' parlor or music room, a gentlemen's parlor or billiard room, a beauty shop, and a large well-equipped gymnasium were originally installed on the third floor to cater to the fashionable Fordyce clientele. The gymnasium and much of its equipment remain intact (figure 8); it has wood wainscotting and floor, and exposed steel trusses. The assembly hall or museum has a stained-glass skylight and vaulted ceiling with carefully detailed woodwork (figure 10). The large, tiled Hubbard tub was added to the central portion of the third floor in the 1930s (figure 11). Parts of this floor were also reserved for private staterooms. The north staircase provided access from this floor to a roof garden.

Throughout the interior, floors are generally of patterned mosaic tile. Typically, walls are of painted plaster above glazed tile. Interior stairs are of marble with iron-and-wood rails. Additional information on interior appointments and decor can be found in a 1982 history report on the Fordyce prepared for the National Park Service by Wilson Stiles (see Selected References).

Structurally, the floors and roof are of reinforced concrete and one-way slab-and-beam construction with vertical support provided by interior concrete columns and masonry walls. The gymnasium roof and marquee are structural steel; the ceiling structure of the first and second floors has plaster applied directly to the concrete slab and beams. The structure of the third floor is concealed by a plastered drop ceiling.

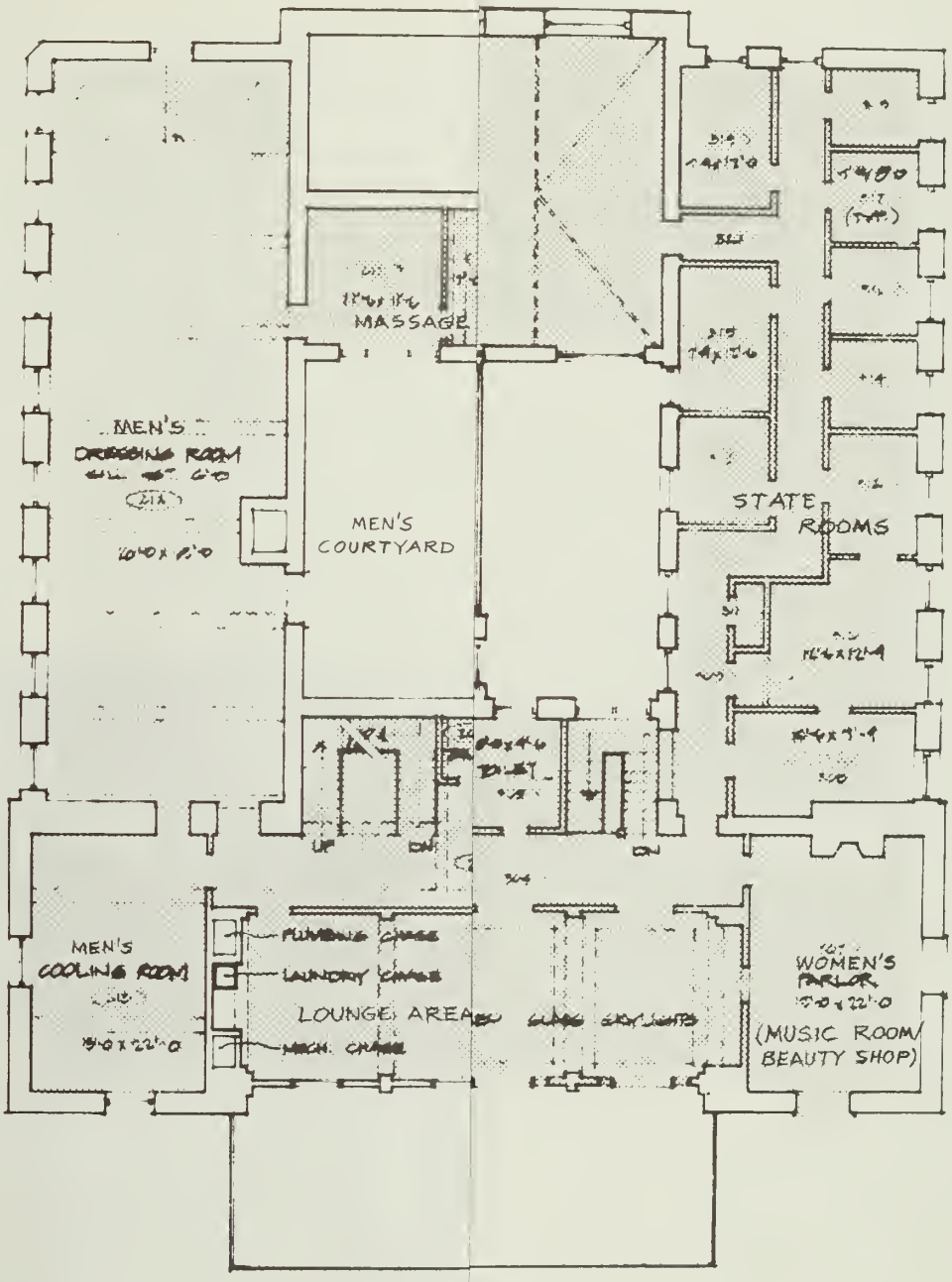
HISTORICAL DEVELOPMENT

Charles Maurice and Samuel W. Fordyce built the Palace Bathhouse on the site where an earlier bathhouse had burned in the 1878 fire (figure 12). The Palace was rebuilt within a few years and minor changes were made in the remodeled structure sometime after 1887, but by 1890 the old

Figure 6. Fordyce Bathhouse Lobby, 1984 (Source: Historic American Buildings Survey)

Figure 7. Men's Bath Hall, Fordyce Bathhouse, 1984 (Source: Historic American Buildings Survey)

Figure 8. Fordyce Gymnasium, 1984 (Source: Historic American Buildings Survey)



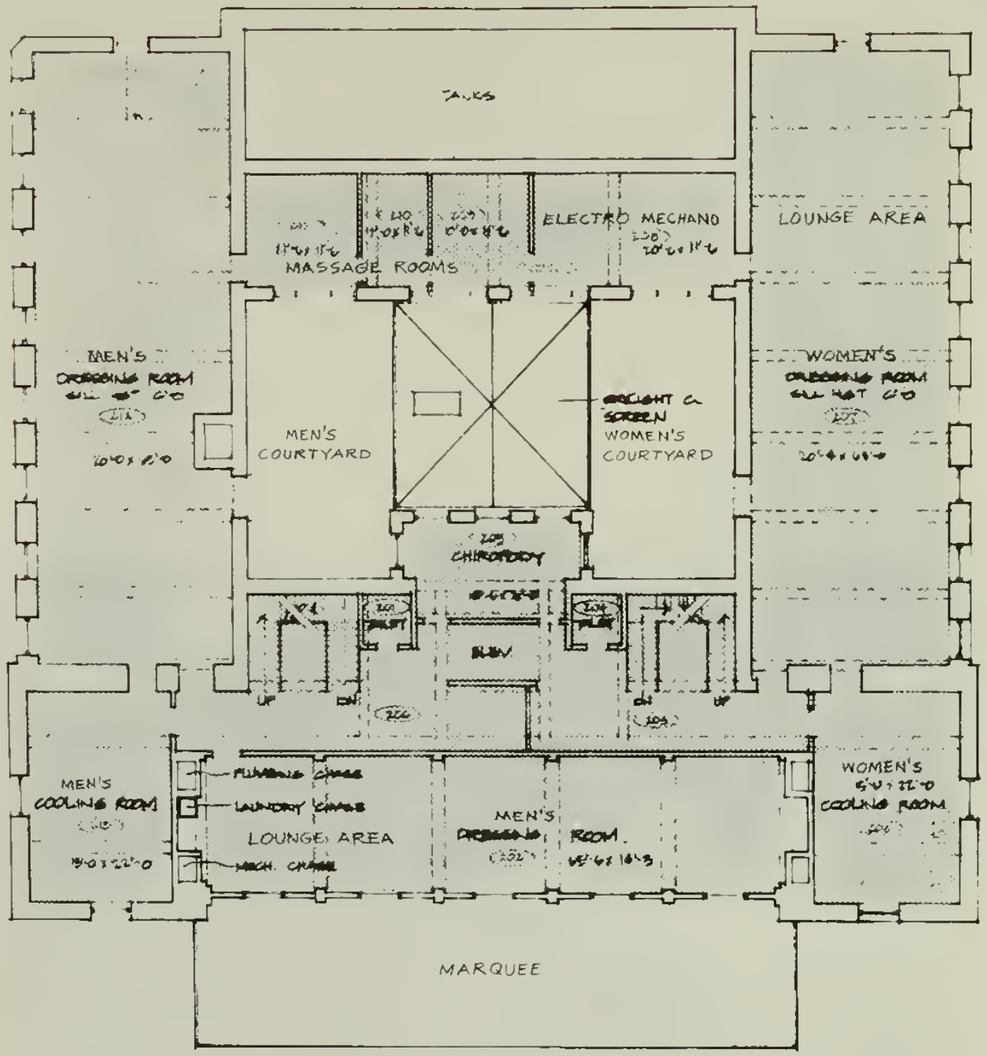
SE AN

Figure 9

INDICATES DISTINGUISHING HISTORIC INTERIOR SPACE.

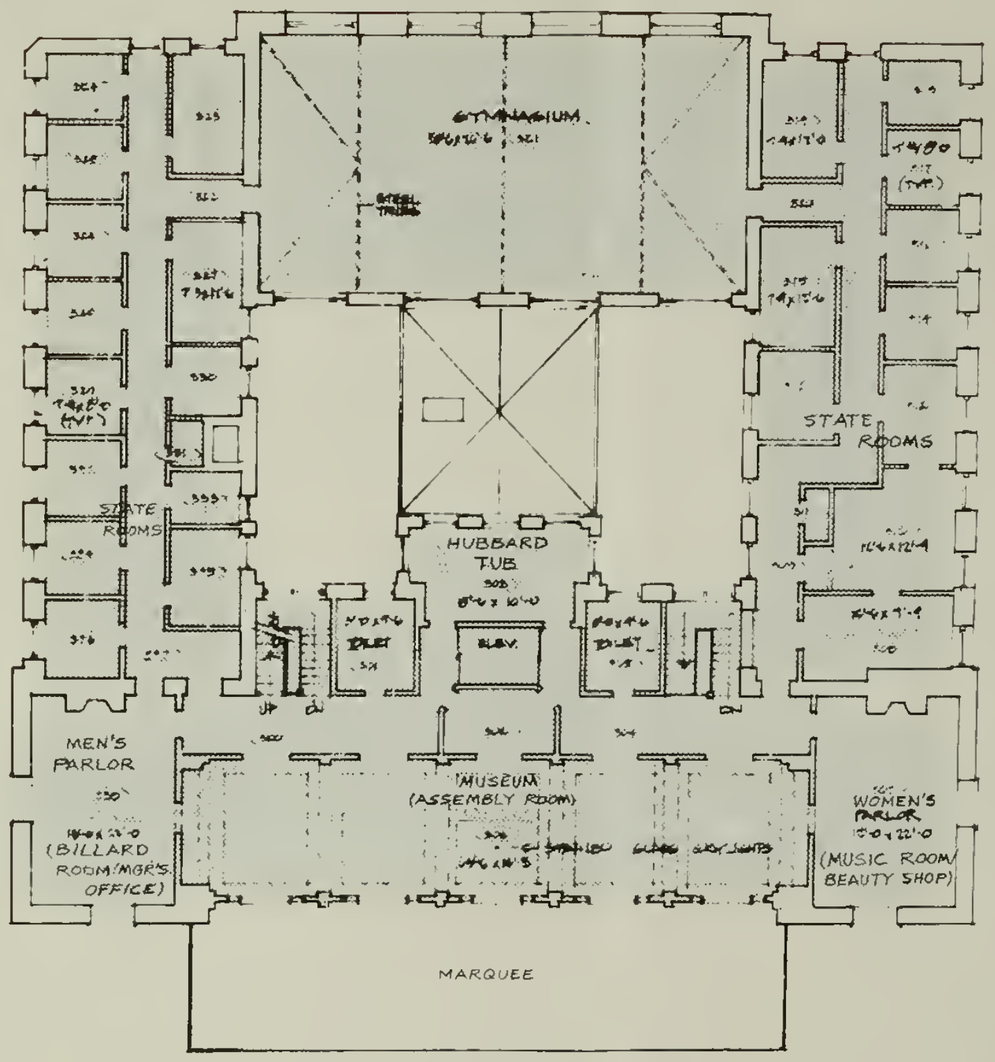
...TING / ...W TEAM / ...REVIEW ...RSION / 5/85	SUB SHEET NO	TITLE OF SHEET FORDYCE BATHHOUSE FLOOR PLANS TECHNICAL REPORT #5	DRAWING NO 128 40,016 PKG NO 172 SHEET 9 OF 14

BASIC DATA/128/26,000



SECOND FLOOR PLAN

7,022 6 SQ FT



THIRD FLOOR PLAN

7,022 6 SQ FT

Figure 9

INDICATES DISTINGUISHING HISTORIC INTERIOR SPACE.

SCALE OF FEET

DESIGNED: EXISTING	SUB SHEET NO	TITLE OF SHEET: FORDYCE BATHHOUSE FLOOR PLANS TECHNICAL REPORT #5	DRAWING NO: 128 / 40,016
DRAWN: SE/SW TEAM			PKG NO: 172
TECH REVIEW: THORSON			SHEET: 9 OF 14
5/85			

BASIC DATA/128/26,000

Figure 10. Fordyce Museum, 1984 (Source: Historic American Buildings Survey)

Figure 11. Hubbard Tub, Fordyce Bathhouse, 1984
(Source: Hot Springs National Park)

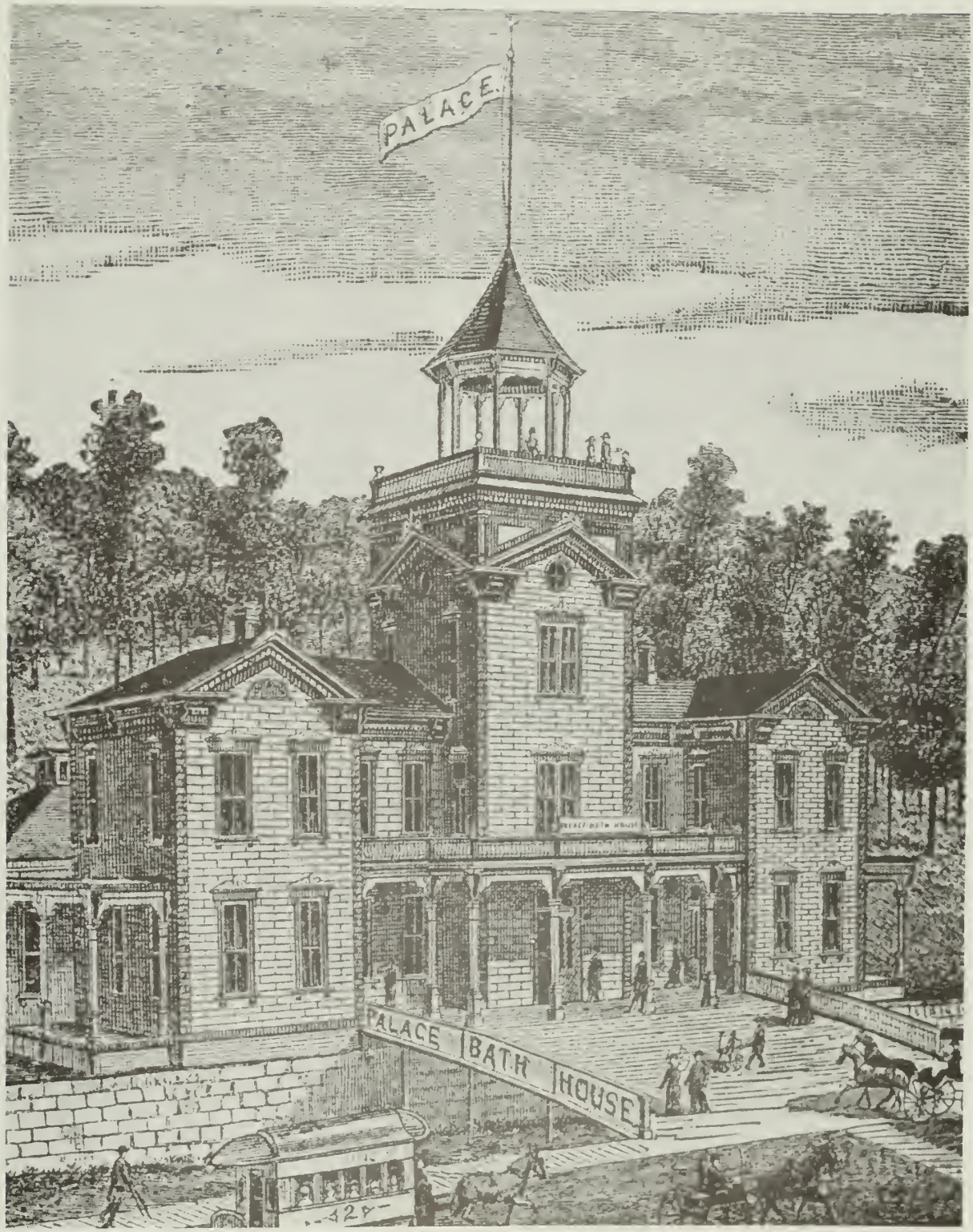


Figure 12. Palace Bathhouse, between 1882 and 1884 (Source: Gem Souvenir, 1906)

bathhouse required considerable repair to bring it up to standards (figure 13). By 1914, the old building was shabby and unsafe so it was razed to make way for an elegant new bathhouse named after owner Samuel W. Fordyce.

The new Fordyce Bathhouse was designed by architects George R. Mann and Eugene John Stern of Little Rock; construction began in 1914 (figure 14). Samuel Fordyce built the present bathhouse as a testimonial to the healing waters to which he believed he owed his life. Intended to be the finest bathing establishment on Bathhouse Row, the Fordyce opened to the public with great fanfare on March 1, 1915 (figures 15 through 32). Total cost for the building, equipment, fixtures, and furniture was $212,749.55.

As originally designed, the nearly square building contained three floors over a basement beneath four-fifths of the first floor area, leaving a portion unexcavated. Spring no. 46, discovered during excavation for the foundation, was later covered over with glass and used for display purposes. A reinforced-concrete reservoir with a capacity of around 70,000 gallons was built under the Fordyce prior to completion of the building; this storage reservoir was connected to a main impounding reservoir.

Relatively few modifications were made to the Fordyce between its opening in 1915 and the late 1930s. A cooling tower was installed on the bathhouse roof in 1915. The De Soto Fountain was placed in the main bath hall sometime before 1926. Several rooms were converted to other uses, but these conversions apparently involved no changes to interior walls. The exterior was unchanged from its original appearance (figure 33).

In 1938, a number of interior spaces were remodeled to change functions, upgrade equipment, and accommodate the installation of hydro-therapeutic bathing pools. The Hubbard tub was installed on the third floor during this remodeling project. About 1940, the cooling tower was removed from the roof, and the bowling lanes were removed from the basement sometime after 1945. In 1957, the basement display spring was covered with a brick-and-plate-glass enclosure. Outdoor lighting was installed in 1959.

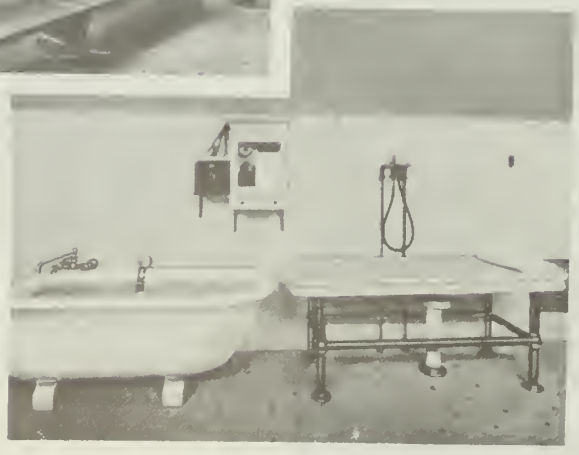
The Fordyce Bathhouse was offered for sale in 1958 for $175,000. It closed four years later in 1962, the first of the Bathhouse Row establishments to fall victim to the decline in popularity of therapeutic bathing.

In 1973, the National Park Service contracted with a private architecture and engineering firm to assess the physical condition of all the bathhouses on Bathhouse Row and to make recommendations concerning their preservation. The resulting historic structures report by Cromwell, Neyland, Truemper, Millet and Gatchell, Inc., was completed in November, 1973 (the Cromwell report), and describes the condition of each bathhouse at that time. A summary of the Cromwell report's findings for the Fordyce is included in the Appendix.

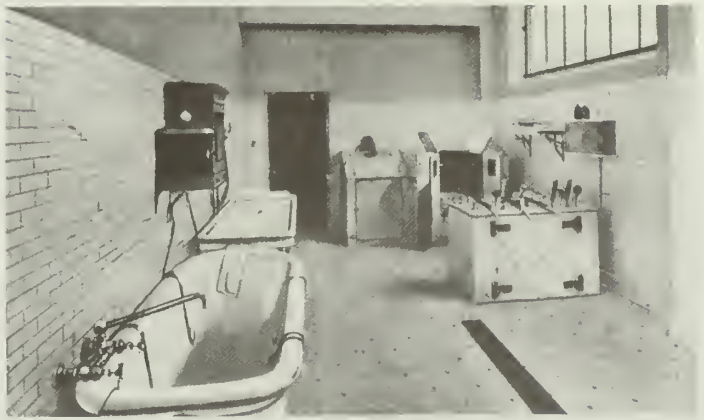
Figure 13. Palace Bathhouse, circa 1906 (Source: Gem Souvenir)

Figure 14. The Fordyce under Construction, 1914-1915 (Source: National Archives, Natural Resources Division, RG 79)

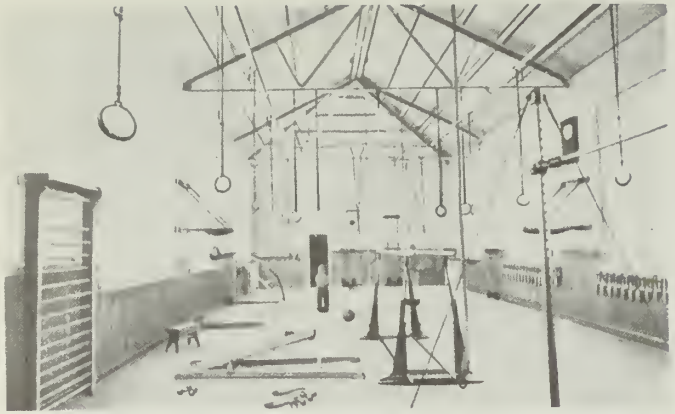
Figure 15. The Fordyce Bathhouse, date unknown (Source: "Fordyce Bath House, Arkansas Hot Springs", advertising brochure, on file Hot Springs National Park)

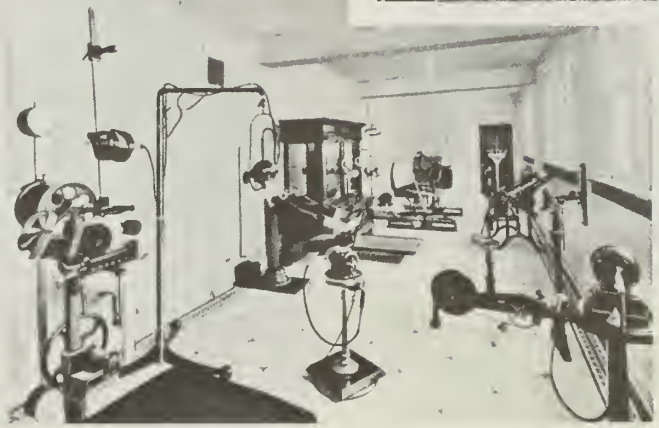


Figures 16-19. Interior Views of the Fordyce Bathhouse, date unknown (Source: "Fordyce Bathhouse" advertising brochure)



Figures 20-24. Interior Views of the Fordyce Bathhouse, date unknown (Source: "Fordyce Bathhouse," advertising brochure)





Figures 25-28. Interior Views of the Fordyce Bathhouse, date unknown (Source: "Fordyce Bathhouse," advertising brochure)

Figures 29-31. Interior Views of the Fordyce Bathhouse, date unknown (Source: "Fordyce Bathhouse," advertising brochure)

Figure 32. Roof Garden, Fordyce Bathhouse, date unknown (Source: "Fordyce Bath House," advertising brochure)

Figure 33. Bathhouse Row, circa 1935 (Source: Hot Springs National Park)

A number of proposals have been made for adaptive use of the Fordyce since it closed in 1962, but it has remained vacant. It is now used on a limited basis for interpretive tours guided by park staff. The National Park Service has spent over $228,000 in the last five years on rehabilitation of the Fordyce marquee; on renovation of the stained glass in the main bath hall; and on repairs to interior plaster walls, the roof, and rain gutters. The exterior wood and cornice work are scheduled for repainting in 1986 at an estimated cost of $20,000.

All of the known remodeling and maintenance actions performed on the Fordyce between its completion in 1915 and closing in 1962 are described in Table 1. Remodeling and Maintenance. The listing in the table is based primarily upon Superintendent's Reports and correspondence between the bathhouse and the superintendent. The list indicates whether projects were proposed (by the bathhouse lessee), approved or recommended (by the NPS); or known to have been completed. In most cases, the date used refers to the correspondence or report which described the proposal or project. Drawing numbers refer to microfilmed documents on file at the park and the Technical Information Center at the NPS Denver Service Center.

Additional information on development of the Fordyce Bathhouse can be found in a 1982 history report prepared for the National Park Service by Wilson Stiles (see Selected References).

TABLE 1. REMODELING AND MAINTENANCE

DATE	STATUS	DESCRIPTION OF ACTION/RESULTS	IMPACT ON STRUCTURE	FIGURE/DRAWING #
1914-1915	Completed	Construction of Fordyce Bathhouse		No drawings available; see figure 14
1915	Completed	Installed cooling tower on bathhouse roof	Change in building profile from rear	
February 1916	Unknown	Cooling apparatus with refrigerator tank, ice machine, ammonia and pressure tanks		128/25904
1916	Approved	Install tub in ladies' department (to make a total of 30 tubs)		
1917	Completed	Added fly screens to ladies' bathroom and three basement windows		
1918	Approved	Install chiropody department		
1921	Proposed	Remove hydro-therapeutic equipment		
1921	Approved	Install fuel tank underground adjacent to the east of the bathhouse		
1921	Approved	Install three additional tubs		
1925	Completed	Painted porch furniture		
1925	Proposed	Build/install storage and cooling tanks		
1925	Completed	Roof repair and cleaning of assembly room glass ceiling		
1926	Proposed	Install De Soto Fountain in front of building		
1928	Completed	Ladies parlor or music room converted to beauty shop		
1931	Completed	Installed new pipes under concrete/novaculite ramp in front of bathhouse		
1932	Completed	Repair bowling lanes		
1932-1933	Completed	Tubbage reduced to 21		
1934(?)	Completed	Gentlemen's parlor converted to Manager's office		
1934	Recommended	Clean exterior brick		
1934	Completed	Built cabinets for Indian relics (third floor)		
1934	Recommended	Install new furniture and redecorate cooling rooms, dressing booths, staterooms, bathhalls, etc.		
1934	Recommended	Replacement of wall clocks		
1934	Recommended	Rearrangement of piping and cooling tanks or building of new structure to hide equipment from promenade		
1935	Recommended	Repair or replace damaged windows		
1935	Completed	Reconnected one tub		
1936	Approved	Install Hubbard underwater therapy tub		

DATE	STATUS	DESCRIPTION OF ACTION/RESULTS	IMPACT ON STRUCTURE	FIGURE/DRAWING #
1036	Completed	Built new cooling tower and remove external pipes		128/60097
1937	Completed	Reconnected two tubs		
1937-1938	Proposed	Various plans completed for installation of hydro-therapeutic bathing pools (underwater treatment facilities)		128/41007, 128/60093, 128/60094, 128/60098
December 1938	Completed	Installed a combination Hubbard currence tub	Major interior changes, change in functional areas	
1938	Completed	Replaced plate glass		
1939	Completed	Purchased new chiropody equipment		
circa 1940	Completed	Cooling tower on Fordyce roof removed		
1941	Completed	Reconnected four tubs (30 total)		
1943	Approved	Discontinue use of deep pool		
1942	Completed	Damper and thermostatic controls added to make boilers operate automatically		
1943	Completed	Gymnasium floor sanded and varnished		
1943-1944	Completed	Cooling room furniture repaired, reupholstered, slip covers purchased and leather covers replaced		
1944	Completed	Installed new interlocking door in elevator		
1944-1945	Completed	Reroofed with felt and asphalt		
1944-1945	Proposed	Remove bowling alleys from basement		
1945	Completed	Add new fluorescent lighting; repair/replace wall clocks		
1946	Completed	Additions and repairs to lounge and cooling room furniture		
1946-1947	Completed	Cleaned and repainted exterior; waterproofed one exterior wall		
1947	Completed	Additional wall clocks installed		
1948	Recommended	Repair windows and skylight in bath hall and front porch		
1948	Completed	Installed new fluorescent lighting and Talkaphone communication system		
1949	Proposed	Install four more tubs		
1949	Completed	Recovered miscellaneous furniture		
1949	Completed	Installed Musak music system		
1950	Completed	Purchased 24 electric clocks		
1952	Completed (?)	Painted and reupholstered ten lobby chairs, and		

DATE	STATUS	DESCRIPTION OF ACTION/RESULTS	IMPACT ON STRUCTURE	FIGURE/DRAWING #
1952	Proposed	Purchase auxiliary heating units for summer use, pack rooms		
1954	Recommended	Removal of therometer conduits		
1954	Recommended	Overhaul glass on marquee roof		
1955	Completed	Repaired glass on front porch		
1956-1957	Completed	Closed display spring with 1/2" plate glass set in durable concrete brick enclosure without venting		
1958	Proposed	Bathhouse offered for sale for $175,000		
1959	Completed	Replaced 50 gallon water cooler		
1959	Completed	Installed outdoor floor (sic) lighting		
1961	Proposed	Install new elevator equipment		
30 June 1962	Completed	Fordyce closed		
1973	Proposed	Revisions to second floor, leasing proposal		128/41007
1978	Proposed	NPS General Management Plan proposed adaptive use for a park visitor center		See selected references

SIGNIFICANCE

The Fordyce Bathhouse is significant for a number of reasons. Its primary significance is related to the overall significance of the Bathhouse Row area. The entire group of structures comprises one of the few collections of historic bathhouses remaining in the United States. Together with the setting of formally landscaped grounds, Bathhouse Row provides a picturesque reminder of America's interest in hot water spas, health, leisure, and recreation. Unlike most of the other bathhouses, however, the Fordyce is individually significant for the quality of its architectural design and exquisite detailing, and for the numerous intact examples of superb craftsmanship throughout the structure. The quality and historical integrity of the building is graphically apparent on the bathhouse floor plans, since virtually the entire interior is considered "distinquishing historic interior space" (figures 5 and 9). The Fordyce is undoubtedly the most architecturally significant structure on Bathhouse Row.

The Fordyce was also the most luxurious and best-equipped of the Hot Springs bathing establishments. As such, it represents the "Golden Age of Bathing" in America, the pinnacle of the American bathing industry's efforts to create a spa rivaling those of Europe. The Fordyce offered all the treatments available in the other houses, and the Hubbard tub, installed in 1938, was the most technologically advanced hydrotherapeutic equipment of the period for the treatment of polio and other debilitating afflictions.

The Fordyce also provided for the well-being of the whole patron--body, mind, and spirit. It offered a museum where prehistoric Indian relics were displayed, bowling lanes and a billiard room for recreation, a gymnasium for exercise, a roof garden for clean air and sun, and a variety of assembly rooms and staterooms for conversation and reading.

Colonel Samuel W. Fordyce was an important figure in the history of Hot Springs--soldier, entrepreneur, and community leader. After experiencing the curative powers of the thermal waters in treating a Civil War injury, he moved to Hot Springs and was involved in numerous businesses including the Arlington and Eastman Hotels, several bathhouses, a theatre, the horsecar line, and utilities. Fordyce had a hand in virtually every development which shaped the community and Bathhouse Row from the 1870s to the 1920s. The Fordyce Bathhouse was constructed as his testimonial to the healing waters.

EXISTING CONDITIONS

Two recent assessments have been made of the existing condition of the Fordyce Bathhouse. The National Park Service contracted with a private engineering firm in 1983 to conduct a study of the physical condition of the five bathhouses vacant at that time. The "Investigative Study of Five Bathhouses" (June 1984) by Pitts and Associates Engineers, P.A. (the Pitts report), focused on the structural condition of the bathhouses, but also provides some information on the condition of architectural materials and a comparison with conditions reported in the 1973 Cromwell report.

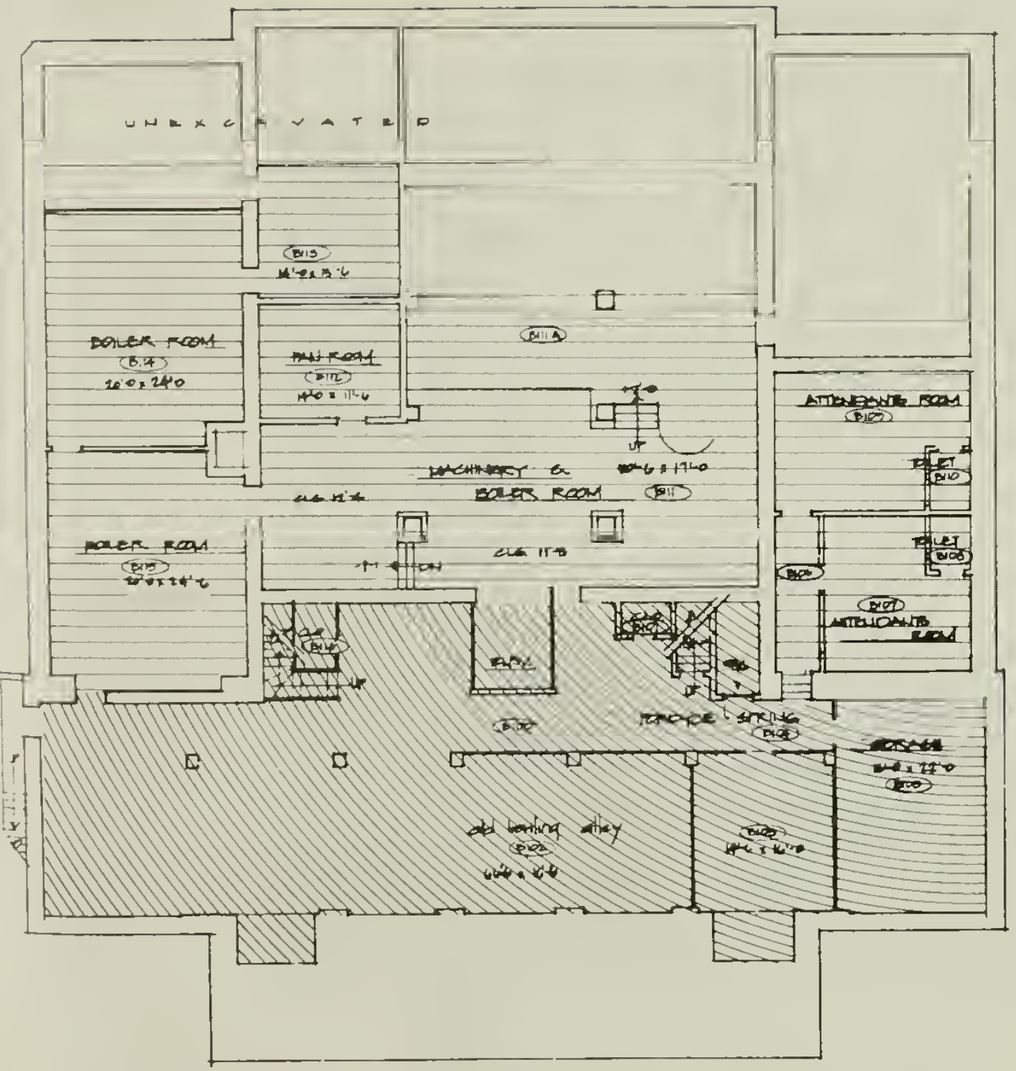
The structural capacities recommended in the Pitts report for the Fordyce Bathhouse are depicted on figures 34 and 35. Engineering drawings showing structural systems and details at 1/4 scale are available at the park. The Appendix contains excerpts from the Pitts report which describe existing conditions at the Fordyce Bathhouse in three parts:

1. Inherent Structural Deficiencies - These conditions are primarily caused by poor design or construction practices. They probably occurred early in the life of the buildings and have not changed much since. The environment may be a contributing factor.

2. Environmentally Caused Conditions - These conditions are primarily caused by poor maintenance, lack of use, age and the normal wearing of the elements on the buildings. These conditions are continuing to deteriorate. Poor design or construction practices may be a contributing factor.

3. Comparison of Conditions Reported in the 1973 Historic Structures Report to the Conditions Observed in this Investigative Study of Five Bathhouses.

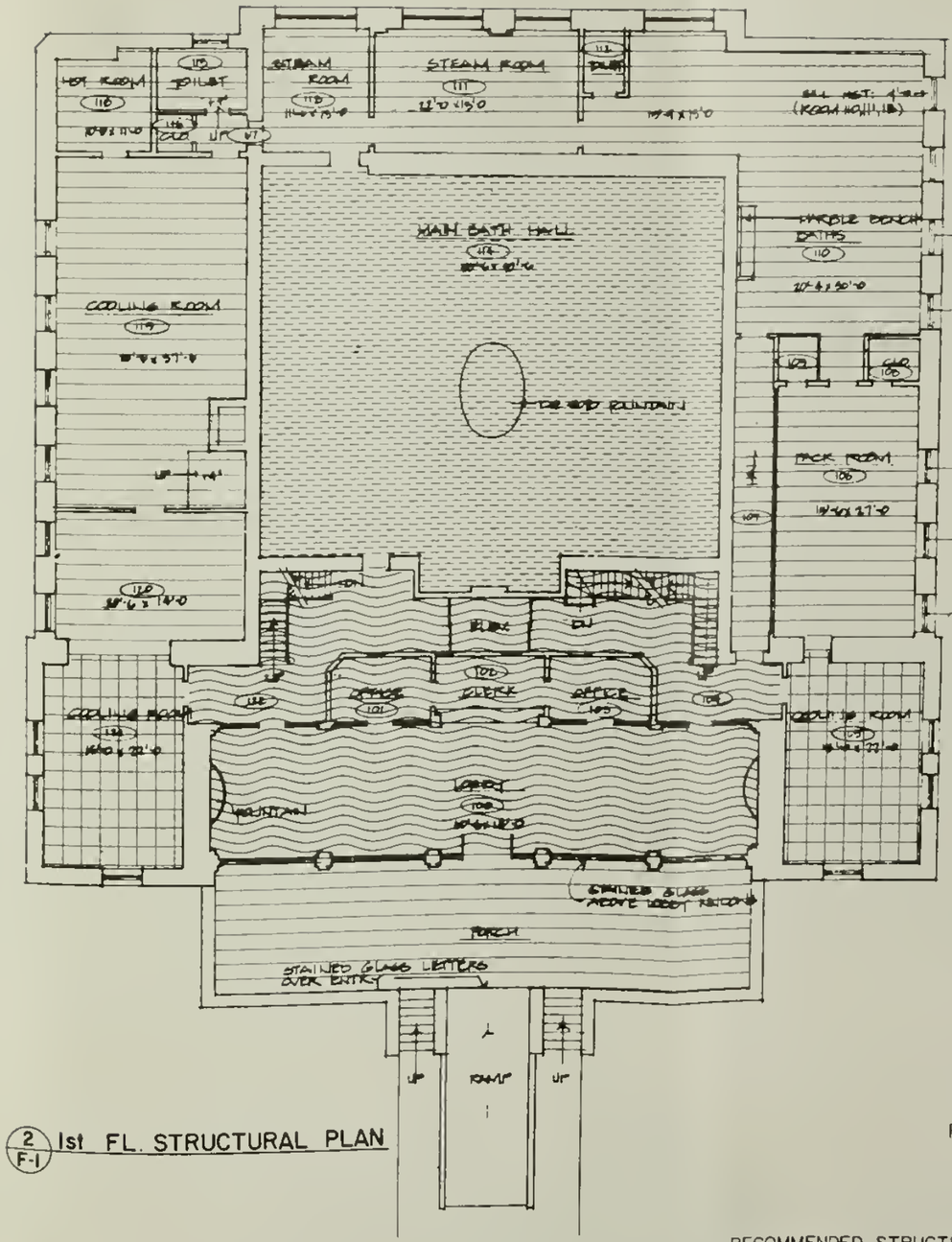
During the summer of 1984, a team of architects from the Historic American Buildings Survey (HABS) completed a documentation project for the vacant bathhouses which included elevation drawings (figure 1), photographs (figures 2-4, 6, 7, 9, and 10), and a survey of conditions for the park's list of classified structures. The survey of the Fordyce Bathhouse is summarized in Table 2. Existing Conditions.



1/F-1 BASEMENT PLAN

LEGEND

50 psf
75 psf
90 psf
100 psf
125 psf



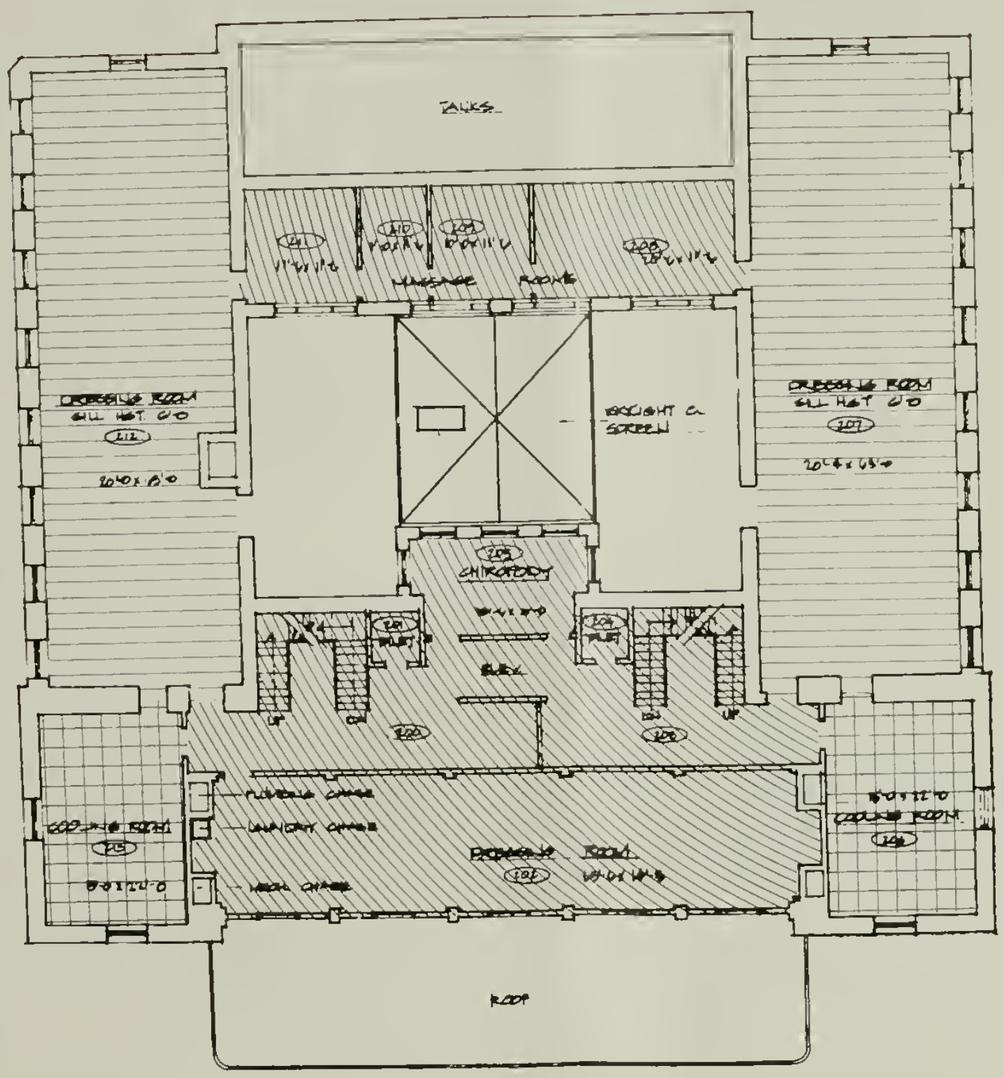
2/F-1 1st FL. STRUCTURAL PLAN

Figure 34

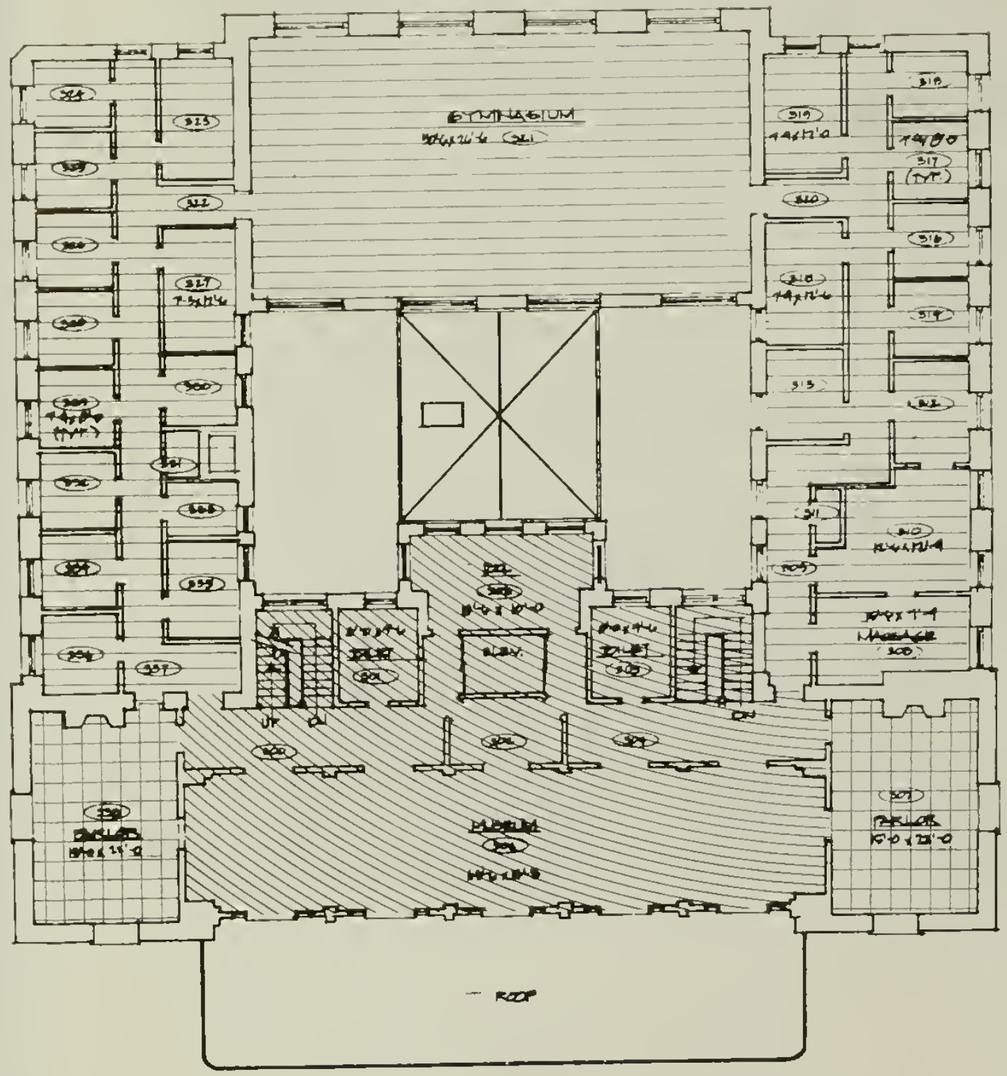
RECOMMENDED STRUCTURAL CAPACITIES

SCALE: 1/16"-1'-0"

Revision Date	By	Description	Rev Ltr
INVESTIGATIVE STUDY OF FIVE BATHHOUSES CONTRACT NO CX 7029300004	Prepared RSP	TITLE OF DRAWING FORDYCE-BSMT & 1st FL STRU. PLAN	Drawing No
PITTS & ASSOCIATES ENGINEERS 100 N Rodney Parham Rd. Suite 4B Little Rock, Arkansas	DESIGNED CLH DRAWN RSP CHECKED 6/84 DATE	LOCATION WITHIN PARK BATHHOUSE ROW NAME OF PARK HOT SPRINGS NATIONAL PARK SOUTHWEST REGION ARKANSAS STATE	PKG NO — SHEET F-1 OF —



1/F-2 2nd FL. STRUCTUAL PLAN



2/F-2 3rd FL. STRUCTURAL PLAN

LEGEND

90 psf

100 psf

125 psf

Figure 35

RECOMMENDED STRUCTURAL CAPACITIES

SCALE: 1/16" - 1'-0"

Revision Date	By	Description
INVESTIGATIVE STUDY OF FIVE BATHHOUSES CONTRACT NO CX702930004	Prepared RSP DESIGNED CLH DRAWN RSP CHECKED 6/84 DATE	TITLE OF DRAWING FORDYCE-2nd & 3rd FL. STRU. PLAN LOCATION WITHIN PARK BATHHOUSE ROW NAME OF PARK HOT SPRINGS NATIONAL PARK SOUTHWEST REGION GSS. AND COUNTY ARKANSAS STATE
PITTS & ASSOCIATES ENGINEERS 100 N. Rodney Parham Rd. Suite 4B Little Rock, Arkansas		For Ltr Drawing ENG NO

TABLE 2. EXISTING CONDITIONS

SYSTEM/ELEMENT	MATERIAL/TYPE	DESCRIPTION/CONDITION
Exterior		
Roof		Spanish tile roof is generally in good condition; discolored in areas of south roof by mineral spray from old cooling tower.
Skylights		Glass, in good condition.
Flashing		Copper.
Chimneys and vents		Brick chimney; mortar joints badly eroded in some places. Galvanized metal air vents have minor oxidation on most; those on east (rear) roof are in very bad condition.
Drainage		Copper drain pipes attached to brick wall. Copper gutter with fish face ornaments; some ornaments are missing.
Walls		First Floor: Terra Cotta Facing (NW, W, SW) and glazed brick (NE, E, SE). Some hairline cracks in terra cotta. Terra cotta beneath marquee severely cracked. Glazed brick has eroding mortar joints and cracking in places, especially northeast corner.
		Second and third floors: Diaper pattern tapestry brick (NW, W, SW) is in good conditon; brick (N, S, E).
		Rock masonry retaining wall at NE corner has settlement cracks, loose cap stone.
		Concrete water tank walls (E) is deteriorating in places.
		Terra cotta parapet and wall cap (N & S roof) is chipped, mortar joints eroding.
Windows		First floor: highly ornamental casement windows, painted terra cotta facing. Paint is peeling and chipping on all windows. Wood sash and trim on the west show some hairline cracks.
		Second and third floors: (2nd story has terra cotta facing; 3rd floor casements arched with balcony (W, NW, SW). Some ornaments broken or missing; finish shows some hairline cracks.
		Second/first/basement: painted wood sash and trim, terra cotta sill, double hung except for basement (N, S, E). Basement panes and screens missing/damaged.
		First floor (S) stained glass is in good condition. Broken in one place.
		Porch: picture windows with casement windows on each side; painted wood trim are in good condition.
		Many windows are cracked on the east side.
Doors		Front door is of wood and glass with brass hardware; some cracks in wood.
		Basement door is of painted wood, glass. Glass panes and hardware missing except for lock; paint is peeling.
		Roof door is of wood, plywood covered, metal hardware. Plywood covering is cracked and hardware rusted.
Foundation		Concrete faced with Batesville stone, slightly cracked.
Site drainage		Flat to slight slope away from building. Signs of minor puddling along foundation; standing water in southeast corner.

SYSTEM/ELEMENT	MATERIAL/TYPE	DESCRIPTION/CONDITION
Exterior (Cont.)		
Site features/steps/ walks/paths		Concrete front porch, ramp, stairs have many hairline cracks and some larger settlement cracks.
Electrical		Two front porch lights fixtures and two spot lights on lawn have parts missing, wiring exposed.
		Marquee light sockets; bulbs are missing.
Plumbing		Water pipes exposed in front (NW corner).
Other		Copper marquee over porch with glass roof and glass border around bottom, iron chains attaching it to brick wall; copper ornamental chain holders. Marquee leaks severely onto porch. None of the glass panes around bottom are in place; copper strips to hold them are missing/damaged.
		Torches on roof are of steel tubing with copper torch. Tubing is rusted and some torches missing.
		Tile floor on porch is generally in good condition, has a few cracks.
		Steel handrails and anchors on roof are badly rusted and unscrewed from wall in places.
Interior		
Ceilings		Painted plaster is typical; this is peeling and chipping.
		Men's bath, first floor, and museum, third floor have stained glass.
		Wood with exposed steel beams and trusses in the gymnasium.
Walls		Glazed tile on the lower portion; the upper is painted plaster. The tile is chipping and plaster peeling.
		Marble wall cladding (lobby).
		Marble partitions (baths); discolored, chipping.
		Most walls on first floor have been replastered and are in generally good condition.
		Around third floor Hubbard tub plaster is chipped away, brick exposed, window and frame totally missing (boarded over).
		Third floor staterooms have plaster walls with glazed tile wainscotting only.
		Gymnasium: wood panelling on lower portion, plaster on upper. Panelling is cracked.
		Second floor chiropody room: cracked and missing plaster has exposed plumbing and brick.
Doors		Baths: wood swinging doors with brass numbers. Doors warping, cracking and numbers missing.
		Lobby: two wood half-doors at counter have missing hardware.
		Basement doors are very badly warped
		Generally doors are wood with translucent or plate glass; or with no glass (typically). Most doorknobs and other hardware missing.
		Third floor: large glass French doors lead to museum.

SYSTEM/ELEMENT	MATERIAL/TYPE	DESCRIPTION/CONDITION
Interior		
Electrical		Lobby: fluorescent light fixtures are discolored. Four electric light fixtures (west wall) have been removed and wiring is exposed.
		Third floor light fixtures, brass with glass shades in place, some refurbished. Some shades are missing.
		First floor cooling rooms; light fixtures are missing and wires exposed.
Heating/Ventilating/ Cooling/Air Condition		Lobby: Painted steel radiators; paint is chipping, radiators rusted.
		Ventilation through exhaust fans in most rooms.
		Ceiling fan in basement.
Plumbing		Not noted.
Floors		Typically are of mosaic tile. Large cracks in the NW and SW lobby, second floor Hubbard tub area, third floor museum, and first floor cooling rooms.
		Basement: concrete floors.
		Gymnasium: wood plank.
Other		
Stairs		Stairs: Marble, steel, and wood rail are typical. Cracked stair on north side of first floor.
		Basement stairs: concrete.
Spring		Fordyce spring in basement: closet-like glazed tile room with arched ceiling, sealed by plate glass window looking into hot spring.
Lobby		Lobby: wood counter with marble cladding on front; drawers and compartments behind. Has some hardware missing.
		Metal coat hooks and drawers missing/rusted.
		Translucent glass windows on sides of counter are cracked/boarded.
		Two decorative tile fountains, north and south ends of lobby.
Elevator		Elevator is of painted steel with glass, arched door. Chipped, rusted.
First floor		Men's bath, marble benches; cracks in beams.
		Large De Soto Fountain.
Second floor		Changing stalls: wood with mirror, brass hooks.
		Metal lockers.
Third floor		Fireplace (beauty parlor).
		Steel tracks on ceiling which lead from elevator to tub--for transport of handicapped.

APPENDIX

EXCERPTS ON THE EXISTING CONDITION OF THE FORDYCE BATHHOUSE FROM THE 1984 PITTS REPORT

Page 7:

The primary purpose of this section is to report on the structural condition of the bathhouses. Many of the structural and architectural building components serve both functions or are so soundly bonded together that it is difficult to report on the structural aspects without referring to the architectural materials. In addition, structural deficiencies and adverse environmental conditions that affect the structure first manifest themselves as blemishes on architectural finishes. Therefore we must report on the condition of and the conditions affecting some architectural surfaces to convey a comprehensive report.

One problem is common to all of the bathhouses. It is best to define this problem and provide a term that will identify it so that it will not have to be repeated for each bathhouse. All building materials contract and expand with variations in temperature. These various building materials contract and expand relative to the temperature variations throughout the building and with the coefficient of linear thermal expansion of the materials. With the exception of metals, many building materials tend to expand with increases in moisture content or contract with losses of water. Portland cement products, such as concrete, concrete block masonry and portland cement plasters and mortars are reversible and will shrink or swell with changes in water content. Portland cement concrete will also experience non-reversible shrinkage during hydration. Burned clay products such as brick, structural tile, glazed tile and terra cotta expand slowly upon contact with water or humid air. This expansion is not reversible by drying at atmospheric temperatures. The architects for these buildings did not provide contraction joints to compensate for these differential movements. The brick masonry exterior walls have expanded because of the heat of the sun and the absorption of water. The interior floor slabs have contracted because of hydration, desiccation and the relative cool atmosphere. This places the walls in compression and the slabs in tension. The thick brick walls being strong in compression and the relatively thin concrete slabs being weak in tension cause the concrete to crack. We will call these cracks stress-relief cracks. The repeating parallel floor cracks at approximately twenty-five feet on center in the Fordyce and the Maurice are classic examples of this phenomenon. Another phenomenon that causes stress-relief cracks is concrete curling. When concrete floor and roof slabs are poured directly on masonry walls, curling of the slab often occurs due to shrinkage, deflection, and plastic flow of the concrete. If the slab warps, it may rupture the masonry or crack the slab, particularly at the corners. Horizontal cracks in the masonry often occur below the slabs. This condition is typified by the diagonal floor cracks that commonly occur in the corners of the Fordyce and the Maurice.

Pages 8-11:

Even though much inside replastering and some restoration has been done to the Fordyce bathhouse, it still shows the ravages of many years of neglect and disuse. Only a few areas of inherent structural distress were observed in this building. Most of the problems observed were caused by the environment directly or indirectly. The following existing conditions were observed:

1. Inherent Structural Deficiencies
   a. The Chiropody, room 205, and the Hubbard Tub, room 303, are an addition to the original building. The walls of this addition are cracking and pulling away from the original construction. No discernible movement was observed in the original construction. Similar settlement cracks can be observed in the exterior southeast corner of the lightwell.

   b. The front porch ramp has settled and cracked. This appendage to the main structure is porbably built on much shallower footings, extending over the Hot Springs Arch.

   c. The diagonal cracks in the corners and the regularly spaced parallel cracks in the floors and ceilings are stress-relief cracks. The absence of diagonal wall cracks that show on the inside plaster and on the exterior brick reduce the possibility that major foundation settlement may have occurred. Some slight foundation settlement may have occurred in the northwest corner.

2. Environmentally caused conditions
   a. The exterior walls facing material for the first floor is terra cotta at the northwest corner, at the southwest corner and beneath the front marquee of the building. Some stress-relief cracking of the terra cotta has occurred. These cracks are hairlines and the glaze is firmly bonded to the clay body. The terra cotta joints, outside of the marquee protection, are weathering and eroding away. In addition, the mortar joints for the terra cotta parapet wall cap are weathering and eroding away.

      The terra cotta cladding of the building columns beneath the marquee has been severely damaged by the oxidation of a marquee steel beam. The steel lamination caused by this oxidation placed a load on the terra cotta that crushed it.

   b. The exterior first floor wall facing material at the northeast corner, at the east wall, and at the southeast corner of the building is white glazed brick. The mortar joints are weathering and eroding. The glazed brick work at the northeast corner has some localized cracking caused by the settlement of a rock masonry retaining wall in that area. The rock wall is also cracked in that area and the cap stone is loose.

c. Refer to the exterior water tank wall at the east side of the building. The reinforcing steel is oxidizing and causing the surface of the concrete to spall off.

d. The rest of the exterior masonry is in good condition, except for that portion that is above the roof. Much of this brick masonry needs to be repointed. This includes the backside of the parapet wall, the smoke stack, the stair and the elevator penthouse. Many of the handrail anchors, brick lintels and other embedded steel items are oxidizing badly.

e. The flashings and gutters on the stair and elevator penthouse are in very bad repair. (These items have been repaired during the time interval between the submittal of the first draft and the completion of this final report.)

f. High humidity caused by ground water, extremes in temperatures and poor ventilation are causing a slow but steady and constant deterioration of this building. There is a perched water table, trapped by the building, on the east side. This is not hot spring water, because it is cool. This water enters through the east foundation walls, runs across the crawl space, is collected in a makeshift pipe, and is eventually deposited on the boiler room floor. These conditions cause severe condensation on the basement ceiling. This condensation, coupled with poor concrete compaction and minimal reinforcement cover, cause continuing concrete and reinforcement deterioration that will become serious. This condition is most prevalent in the unfinished crawl space. In addition, these conditions cause continuing deterioration to all mechanical equipment, all electrical equipment and all architectural finishes throughout the building.

3. Comparison of Conditions Reported in the 1973 Historic Structures Report to the Conditions Observed in this Investigative Study of Five Bathhouses.

Much restoration work has been done since the 1973 Historic Structures Report was made. This restoration includes the installation of a new roof and flashings, extensive interior replastering, skylight restoration, marquee restoration and the repair of the copper gutters and downspouts. Heat and ventilation is still not being provided in the building. Some of the plaster restoration accomplished during the summer and fall of 1983 has fallen off by the spring of 1984.

[Note: The capital letter symbols are cross references to the bathhouse floor plans, figures 5 and 8.]

		1973 Historic Structures Report	Investigative Study of Five Bathhouses
Basement:	A	Large crack in ceiling.	This is not a severe crack. It is so small that it could not have changed much since 1973. It is a stress-relief crack. There are no diagonal cracks in the walls to indicate that settlement has occurred.
First Floor:	A	Buckling of tile corresponding to crack in ceiling of basement.	Stress-relief crack. There is no evidence that any recent attempt has been made to repair the floor tile. This floor tile could be repaired to a stable condition if a control joint were included in the tile over the stress-relief crack.
	B	Moisture damage, plaster fallen.	Repaired and stable. Some of the newly restored plaster in men's bath, 110, and on the wall of the main bath hall, 114, has fallen.
Second Floor:	A	Cracks - walls & floor.	Stress-relief cracks on the walls and floor are stable.
	B	Cracks - walls & floor.	Stress-relief cracks on the walls and floor are stable.
	C	Cracks.	Stress-relief cracks on the floor are stable.
	D	Cracks.	Stress-relief cracks on the floor are stable.
	E	Plaster fallen.	Repaired and stable.
	F	Cracks in brick wall and through window sill. Quarry tile to be replaced.	Structural movement has occurred. Don't think much change has occurred since 1973.

	G	Fine Cracks in brick walls.	The crack patterns indicate a settlement of the structural support in the corner. This is probably the result of a foundation settlement or masonry wall consolidation in this area. There is no sign of structural distress in the walls or concrete floors below. The movement of these elements has probably been absorbed in the more plastic interior brick and mortar joints. The exterior brick and mortar is very hard and crack with small movements.
	H	Large crack indicating movement of wall.	Same as G .
	I	Crack in floor.	Related to G and H . Appears to be stable.
	J	Settlement cracks in walls & floor.	Stress-relief cracks on the floor. Walls repaired and stable.
	K	Settlement cracks in wall & floor.	Stress-relief cracks on the floor. Wall repaired and stable.
Third Floor:	A	Settlement cracks in floor corners.	These are primarily stress-relief cracks, although there may have been some settlement in this area. Stable.
	B	Plaster falling from ceiling and walls.	Not repaired. Probably caused by roof leaks, since repaired.
	C	Settlement cracks at floor corners.	Stress-relief cracks, stable.

SELECTED REFERENCES

NATIONAL PARK SERVICE, U.S. DEPARTMENT OF THE INTERIOR

1973 "Historic Structures Report, Hot Springs National Park," by Cromwell, Neyland, Truemper, Millett and Gatchell, Inc., Little Rock, AR. On file at Hot Springs National Park.

1978 General Management Plan, Hot Springs National Park, Bathhouse Row and Vicinity, Arkansas. Denver, CO: Denver Service Center.

1982 "An Historical Data Section for an Historic Structures Report on the Fordyce Bathhouse, Arkansas Hot Springs," by Wilson Stiles, Witsell and Evans, P.A., Little Rock, AR. On file at Hot Springs National Park.

1984 "Interim Report, Phase Two, Testing on Site, Investigative Study of Five Bathhouses," by Pitts and Associates Engineers, P.A., and Witsell and Evans, Architects-Planners, Little Rock, AR. On file at Hot Springs National Park.

1985 General Management Plan Amendement/Development Concept Plan/Environmental Assessment, Hot Springs National Park, Garland County, Arkansas. Denver, CO: Denver Service Center.

1985 "Historic Grounds and Structures: An Interim Report on Bathhouse Row," by Diane Rhodes, Denver Service Center, Denver, CO. On file at Hot Springs National Park.

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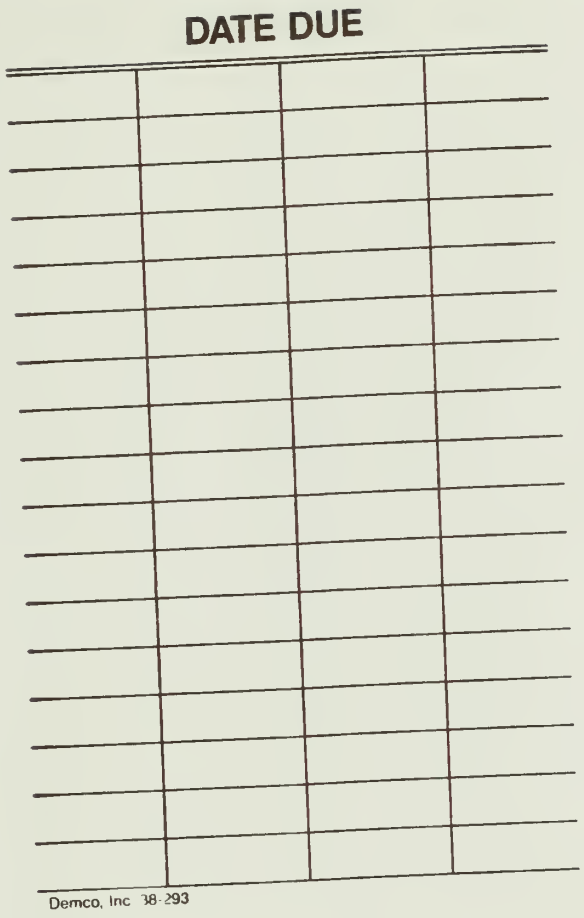
U S GOVERNMENT PRINTING OFFICE 1985—576-039 10050 REGION NO 8



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Publication services were provided by the graphics staff of the Denver Service Center. NPS D-46 July 1985