

SOME LETTERS
OF
ROBERT MILLS
Engineer and Architect

With an Introduction by
BESS GLENN
of The National Archives

And Notes by
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Secretary of the Historical Commission of South Carolina

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[Copy.]

War Department
April 8, 1835.

Robert Mills, Esqr.
Engineer & Architect
Washington City
Sir,

In answer to your letter of yesterday I have the honor to inform you that in carrying into effect the resolution of the House of Representatives relative to the establishment of a National Foundry passed at the last session of Congress it is not expected that the services of any person will be needed by this Department. If, however, the services of someone should be needed those of an officer of the Corps of Topographical Engineers will probably be required.

Very etc.
(Signed) Lewis Cass

[11]

General Gratiot
Chief Engineer U S^{ts}

City Washington
March 29 1836

Dear Sir

May I take the liberty of requesting your opinion upon the subject of the enclosed paper, relating to a Plan for supplying the City of Charleston S C. with water— You are well acquainted with the geological position of this City and its neighborhood, and the impracticability of obtaining an adequate supply of water from *natural springs* in its vicinity, and therefore that to secure such supply, *artificial* means must be resorted to,— the question then occurs whether the plan proposed in the annexed paper will prove effectual to this end.

Your consideration of this subject, and opinion upon the feasibility of the plan will oblige Dear Sir yours

respectfully
Rob^t. Mills

Plan for furnishing the City of Charleston S C with an abundant supply of water—

Repeated experiments, to ascertain the quantity of water which falls annually in rain upon a superficial foot of ground in the City & neighborhood of Charleston S^c. C^a, have resulted in determining this quantity to be equal in height to 42 inches— or 3½ ft. Now a superficial acre containing 43,560 square feet, which multiplied by 42 inches give 152,460 cubic feet of water which falls on an acre p^r annum.

Then suppose we construct a basin or Reservoir to include 10 acres, & make it 10 feet deep— $10 = \frac{\text{acres}}{\text{feet}} = 435,600 \times 10 = 4,356,000$ cubic feet— But 10 acres will yield annually only 1,524,600 cubic feet of water from rains, therefore the Reservoir must be located where an extent of ground can be *drained* equivalent to the necessary supply— Let us assume 100 acres for this extent, then 100 acres will yield 15,246,000 cubic feet of water annually from rains which may be drained into the reservoir, except the loss from soakage, which can not be correctly ascertained.—

Now in the course of 12 months, as stated above, there will come a supply of water into the reservoir equal to 15,246,000 cubic feet, & this divided by 365 gives, on an average, 41,770 cubic feet of water per diem supplied to the Reservoir, equal to 250,620 gallons which quantity may be regularly discharged every 24 hours for any required supply, and still leave in reserve 4,356,000 cubic feet in the reservoirs, not affected by the p^r diem discharge, (abating the evaporation,) except for the space of about 80 days in the year, which may be calculated for *dry seasons*. During such time the 4,356,000 cubic feet reserved in the Reservoirs would furnish 54,450 cubic feet, equal to 326,700 gallons, or thereabouts, each day, which at 80 gallons p^r day would be sufficient for a population of 24,000 persons— or 4,000 families.—

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Gen^l. C. Gratiot
Chief Engineer U S. A.
D^r Sir.

Washington City Sep^r. 1st. 1837

In reply to the letter of M^r. Long on the subject of "*the Manufacture of Bricks from Dry Clay*" which you have