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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No. 519 Press Mis. 10

16-11

Dated 6-4- 18 57

Not to be folded or roughly handled

Fort Saint George, Public Works Consultation of 12th April 1859.

No. 10. Read the following Extract from the Minutes of Consultation in the Military Department, dated 28th March 1859, No. 1186.

Approving for immediate execution the erection of a House for the Boiler and the Chimney with their connecting under ground flue, of the Steam Engine intended for the Printing Presses attached to the Government Office. (Vide Military Consultation, 1st April 1859, Nos. 110 @ 114.)

No. 11. ORDER THEREON, No. 819; dated 6th April 1859.

Ordered to be communicated to the Chief Engineer for information and guidance with reference to his letters dated 8th and 17th March last Nos. 8410 and 8721. The complete estimate for the entire project stated to be under preparation should be laid before Government at the earliest possible date.

(Signed) J. D. BOURDILLON,
Secretary to Government.

No. 1186.

Extract from the Minutes of Consultation, 28th March 1859.

Read Memorandum from the Superintendent Government Press, 15th February 1859 ; *to the Secretary to Government, Military Department.*

On the subject of the orders of Government conveyed in Extract Minutes of Consultation, No. 223 of 18th January 1859, the Superintendent of the Press respectfully solicits attention to the fact that very great advantages would attend the fitting up of the Boiler and Engine in one of the Magazines from which the Powder is now in course of being entirely removed. Sufficient shafting for the purpose is already in the Press Office, so that no material difficulty would attend the carrying out of the proposed alteration.

The heat and dust inevitably attendant upon the working of the Steam Engine in the office—(most serious inconveniences in a room where about 500 persons are daily assembled)—as well as the loss of space,—would thus be wholly obviated.

On the old plan the flue would pass up close to the Council chamber, and would probably also seriously affect its temperature and lead to stoppage of work on Council days.

The plan proposed is the suggestion of Mr. Faulkner, an experienced practical Engineer. It appears both simple and economical. It would avoid all cause for the further interruption of business at the Press by the erection of a flue and the building in of the Boiler—because an inexpensive cast Iron funnel at the Magazine would be sufficient, and the shafting would be laid under ground.

It has already been ruled that the Powder Magazine cannot be used as such while the Steam Engine is in operation at the Press, so that no objection can arise on that ground—while the Magazine could, at any time the necessity might arise, be restored to its original purpose, by simply turning the Engine out.

Referred to the Town Major for early report.

19th February 1859.

From the Town Major, Fort Saint George, 28th February 1859, *No* 821 ; *to the Acting Secretary to Government, Military Department, Fort Saint George.*

With reference to the memorandum from the Superintendent of the Government Press, dated 15th instant, forwarded to me for report, I have the honor to inform you that the Right Honorable the Governor approves of the proposed measure of putting up the Steam Engine in the Grand Magazine instead of in the Government Office, provided that it can be readily removed should any sudden emergency arise, and that the Engineer Department sees no objection to the measure as regards injury to the buildings.

Referred with letter from the Superintendent Government Press 15th February 1859, to the Chief Engineer through the Department Public Works, for consideration and report.

4th March 1859.

Extract from the Minutes of Consultation, Public Works Department, 19th March 1859, *No.* 646.

Read letter from the Chief Engineer, 8th March 1859, *No.* 8410 ; *to the Secretary to Government.*

In forwarding, with reference to Extract Minutes of Consultation, under date the 4th February 1859, No. 308, the accompanying copy of the Proceedings of a Committee assembled by my orders to determine the site of the Boiler House of the Steam Engine to be erected for driving the Printing Presses attached to the Government Office, and to report upon the suggestions of the Superintendent of the Press, respecting the Engine in his memo. of the 13th January 1859, I have the honor to recommend that, pending the Garrison Engineer's preparation of complete Estimates for providing every probable requisite for the whole project, the immediate commencement of the building for the Boiler and of the under-ground flue and Chimney by the Garrison Engineer may be authorised on emergency.

Proceedings of a Committee assembled at the Government Office in the Fort, on the 3rd March 1859, by order of the Chief Engineer, Madras.

President.

Captain C. A. Orr, Superintending Engineer, Northern Circle.

Members.

Captain H. L. Prendergast, Acting Garrison Engineer.

Mr. Flockhart, and Mr. Thompkinson. } Mechanical Engineers.

The Committee having assembled pursuant to orders, proceed to inspect the site on which it is proposed to erect the Boiler House, and set up the Engine for driving the large Printing Presses attached to the Government Office, and likewise to examine the Boiler with a view to making such suggestions as occur to it for carrying out the measures proposed in Mr. Smith's memo. of the 13th January 1859, for the prevention of sparks from the Chimney, and the consumption by the furnace of its own smoke.

2. The questions of the most suitable position for the Boiler and Engine, respectively, do not appear to have been referred to the Committee, but the Superintendent of the Press having requested its advice, the Committee, after careful examination of the ground and the existing buildings with Mr. Smith, is unanimously of opinion that the Engine should be set up in the small room adjoining the Press room originally intended for, but not now required by, the Electric Telegraph Department, so as to allow of motion being communicated with facility, and without loss of power, direct to shafting taken through the party wall, and onward over the Presses, and carrying the pullies from which those Machines will be driven. The Boiler should be placed a few feet outside the same room under a house erected for the purpose, and in order to prevent any inconvenience being felt in the upper rooms of the Government buildings from its propinquity, either from the smoke or hot air generated in the furnace, the Committee would recommend that the flue should be carried in an under-ground Masonry Tunnel to the ramparts, and be terminated there by a Chimney of sufficient elevation to create a powerful draft to the furnance for the necessarily rapid production of steam.

3. In considering the subject of the prevention of sparks and the self-consumption of smoke, the Committee would, in the first place remark, that inasmuch as the former consist of red-hot cinders, which can only be thrown off when the fuel is thoroughly ignited, and burning bright without emitting smoke, the consumption of the latter, which is evolved only in any quantity after each addition of fresh fuel, will in no way effect the ejection of sparks.

4. The Committee, however, notwithstanding the weighty opinion already recorded of the danger likely to arise from the erection of a Steam Engine in the Fort, does not believe that from the furnance of the Boiler under examination, any danger need be anticipated from hot cinders, because, owing to the great length of its flue surface, Coal, which contrary to Mr. Smith's supposition is less liable to produce sparks than Coke, will be found far the best description of fuel, and the draft will not be so rapid as to convey solid atoms, in a state of ignition, so far as the orifice of the Chimney, even if the latter were placed immediately over the Boiler instead of at a considerable distance as above recommended.

5. With respect to adapting the furnace to the consumption of its own smoke, the Committee is of opinion that, as the Boiler, consisting of a simple Cylinder of the unusual length of 30 feet, has to be embedded into masonry, built in such a way as to form a furnace 3 feet in depth, and a flue under the remaining 27 feet, it is only necessary to extend the fire grate to six feet, and to place a bridge of fire brick, say nine inches high, about five feet from the furnace door; the fire place will be thus greatly improved, and the smoke having then to pass over the red hot fire brick and the bright embers near it, will be so heated as to ignite and enter the flue as flame on being mixed with the oxygin of the air, which will enter through the small space of open fire bars behind the bridge, at a high temperature from having traversed the ash pit close below the fire bars. The means of closing or opening this small aperture, for the admission of air according to the state of the fire, must be afforded by fitting below it a moveable iron shutter.

6. Time does not admit of the Committee preparing for submission with these Proceedings, a Plan for carrying out the arrangements proposed, but one will be prepared without delay, and in the meantime the Garrison Engineer, in estimating for the Boiler House and the cost of erecting the Machinery, will provide for what is necessary.

7. In conclusion, the Committee would recommend the immediate commencement of the Engine House and Chimney, as their erection and the construction of the connecting under-ground Masonry Tunnel will occupy sometime, and it appears inexpedient that the excellent Steam Machinery ready at hand should longer remain unavailable.

For the Commitiee.

(Signed) C. A. ORR, Captain,
President.

FORT SAINT GEORGE,
5th March 1859.

Referred to the Military Department. The order in that Department dated 4th March 1859, has been referred to the Chief Engineer for report, with Extract Minutes Consultation, dated 10th March 1859, No. 530.

(A true Extract.)

(Signed) W. C. SIM.

Acting Deputy Secretary to Government.

Extract from the Minutes of Consultation in the Public Works Department, under date the 21st March 1859, *No.* 662.

Read letter from the Chief Engineer, 17th March 1859, *No.* 8721; *to the Secretary to Government.*

With reference to Extract Minutes Consultation of the 10th March 1859, No. 530, requiring me to report on the proposition, which was approved of in Extract Minutes Consultation, in the Military Department of the 4th idem, for putting up the Engine and Boiler of the Government Printing Press in the Grand Magazine, I have the honor to refer to my letter of the 8th instant, No. 8410, submitting a Report of a Committee, which having assembled by my order to take into consideration Mr. Smith's memorandum of the 13th January 1859, on the prevention of danger from sparks, by making the Furnace of the Boiler consume its own smoke, likewise turned its attention to the question of how most judiciously and advantageously to place the Machinery, and after an inspection of the ground, and of the buildings, gave its opinion, that the Engine should be put up in the small room available for the purpose next the Printing Office, and that the Boiler should be placed a few feet outside, under a small shed erected for the purpose.

2. Considering this an excellent arrangement, inasmuch as, while it involved no modification of the Machinery, except some slight and easily effected alterations of the steam and feed pipes, it allowed the Engine to be set up at once, in such a position as to act directly on the shafting transmitting motion to the Presses, and the Boiler to be conveniently placed for the supply of steam, without discommoding by the generation of heat or smoke, the adjoining rooms of the Government buildings, I fully and heartily concurred with the views of the Committee, and recommended that the house for the Boiler and the Chimney, with their connecting under ground flue, shoul be begun without further delay.

3. It is therefore scarcely necessary to add, that I am not of opinion that a suitable position for the Engine and Boiler can be found in the Magazine, which is so far from, and so situated, with reference to the Printing Room, that to transmit motion to the Presses will require a vast extension of shafting, and the introduction of a complicated system of bevelled wheels, while it is not so far removed as to allow of the flue being carried up into the open air, either by means of a Masonry Chimney, or an Iron funnel, without causing great annoyance. An under-ground Tunnel, in connection with a detached lofty Chimney, to carry off smoke and hot air as far as possible, seems indispensable; and all that would be saved, by making use of the Magazine, would therefore be merely the cost of the small shed over the Boiler, required by the Committee's plan, which saving would be more than counterbalanced by the expense of additional shafting, Cog-wheels &c., and that of such alterations as might be required for the admission of light and air into the Magazine, and the junction with it of the requisite external flue.

Referred to the Military Department with reference to Extract Minutes Consultation in that Department, dated 4th March 1859, and to Extract Minutes Consultation in the Public Works Department, dated 19th March 1859, No. 646.

(A True Extract.)

(Signed) W. C. SIM,

Ag. Dy. Secretary to Government.

Approved for immediate execution.

(True Extract and Copies.)

Acting Dy. Secretary to Government.

To the Public Department.
„ Town Major.
„ Department Public Works. With 20 Spare Copies
„ Military Auditor General.
„ Accountant General.

Exd. J. E. Cashart.

Corresp[ce] Novem[r]/58 N[o]. 27-28
—— 8th Febry/59 —— 21-23
—— 15th March/59 —— 5-6
—— 22d —— 80-81
110-111.

From the Chief Engr 12th June/60 No 1480 inclo.

No 10411.

Public Works 1859 Dept.
Dº to Govt 12th April.

No 781.

Extract from the Minutes of Govt. in the Military Department.

Dated 28th March 1859

Recd 1st April

From the Chief Engr 21st April 1859 No 1007 inclose.

Approving for immediate Execution the erection of a house for the Boiler & the Chimney with their Connecting Underground flue, of the Steam Engine intended for the Printing Press attached to the Govt. Office.

No 819. 6th April 1859
to the Chief Engr

No 819.

Ordered to be communicated to the Chief Engineer for information and guidance with reference to his letters dated 8th and 17th March last No 8410 and 8721. The complete Estimates for the entire project stated to be under preparation should be laid before Government at the earliest possible date.

Fort St. Geo: 6th April 1859.

W.S. Copy to the Chief Engr with Govt Copy of F.R. C. No 1186 Dispº 6