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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No.	507	Press / Mis.
353-354.		
Dated	20-3-	1862

Not to be folded or roughly handled

Proceedings of the Madras Government, Public Works Department, 20th March 1862.

No. 353. Read the following Proceedings of the Madras Government in the Public Department, dated 18th March 1862, No. 318 :—

Requiring Mr. Mayer to take necessary steps for the adoption of Coal Gas in the Fort as well as in the Regimental Mess House in communication with Chief Engineer, who is desired to submit plans and estimates of additions required to the present Gas Works, and granting to Mr. Mayer a remuneration of Rupees 100 per mensem, as also requiring the Controller of Military Finance to make provision for the above charge.

(Vide Public Proceedings, 18th March 1862, Nos. 95-96.)

No. 354. ORDER THEREON, 20th March 1862, No. 507.

Communicated to the Deputy Chief Engineer, Central Circle, whose particular attention is requested to paragraphs 7 and 9 of the orders in the Public Department.

(Signed) W. H. HORSLEY, Lieut.-Colonel,
Secretary to Government.

Proceedings of the Madras Government, Public Works Department, 20th March 1862.

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Communicated to the Deputy Chief Engineer, Central Circle, whose particular attention is requested to paragraphs 7 and 9 of the orders in the Public Department.

(Signed) W. H. HORSLEY, Lieut.-Colonel,
Secretary to Government.

PUBLIC DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following letter from J. E. MAYER, Esq., Professor of Chemistry; to T. PYCROFT, Esq., Chief Secretary to Government, Fort Saint George, dated 20th February 1862.

In accordance with instructions conveyed to me in paragraph 3 of Order No. 11, under date January 7th 1862, I have now the honor to submit for the consideration of His Excellency the Governor in Council, the following details relative to the lighting up of Fort Saint George with Gas.

1st. The plans which accompanies these explanatory statements, shews at a glance the situations and number of lights proposed, it also shews how many of these are old lights and how many new ones.

2nd. The Statement accompanying the Plan, estimates the cost of piping as well as the various sizes and lengths required. Having in all these matters obeyed the orders received, I have the honor to submit the following calculations founded on the data thus afforded.

Previous however to giving these details, it is again needful to draw attention to the still increasing price of Oil; at the outset of the undertaking it was Rupees 32 per candy, it is now 94 Rupees per candy and difficult to be got even at this extravagant figure. Each Oil lamp (cocoanut) it will be found by examination of the Commissariat accounts, now costs as nearly as possible 3½ Rupees per month, this multiplied by 120 lights will equal Rupees 420 per month; the cost of the Oil Gas lights (101 are now lighted) per month is for each light about 2. or multiplied by 120 the cost equals Rupees 240.

The cost of 120 Coal Gas lights will as nearly as possible be 1 Rupee per light per mensem: thus the three expenditures stand one to the other in the following ratio.

	No. of lights.	Rupees.
Oil in Lamps...	120 ...	420
Oil Gas	120 ...	240
Coal Gas	120	120

If the calculation be made on 400 lights then the figures will stand thus for the year.

	No. of lights.	Rupees.
Oil in Lamps...	400 =	1,400 × 12 = 16,800
Oil Gas...	400 =	800 × 12 = 9,600
Col Gas...	400 =	400 × 12 = 4,800

and if these figures be correct, the annual difference would be 4,800 Rupees between Coal and Oil Gases and between Coal Gas and Oil in lamps 12,000 Rupees. Thus it is evident that the calculations are constantly subject to change, those now submitted not being in agreement even with those prepared for submission to the Government of India, nor in accordance with any that have been previously laid before Government, these changes it is obvious are dependent on the increase in the price of Oil.

The number of lamps already burning nightly in the Barracks is 101, but the number sanctioned is 120, and about 120 more it is proposed to light nightly in the Fort and from information obtained from Mr. Smith it appears that about 50 lights are required in the Government Printting Office, thus there will be about 300 lights burned nightly for the service of the Government and the public; besides this number of lights, Church lights and private lights will no doubt bring up the number to 400, and if so the gain in Coal will, it is plain, be amply sufficient to permit of the necessary outlay. Should the Government be anxious from the continued increase of price and the difficulty in obtaining Oil at once to introduce the Coal, I will undertake to give them a good working apparatus at a very small cost on a very simple plan, that I have designed. It will certainly not be so perfect as the apparatus that Mr. Edwards proposed, but the cost will comparatively be very small, and I will guarantee in any way the Government may wish, the efficient working of it. The chief requirements will be purifiers of a simple kind which, I

know can be made here, new retorts and some fittings, all which can be cast at the Mint, the building a new Furnace and the various workmen will be the only items requiring any actual outlay, not more probably than 7 or 8 hundred Rupees. The cost of the purifiers, castings and retorts can be submitted to Government by Contingent Bills as sent in. I submit this plan to the consideration of Government as perhaps the outlay of 5,000 Rupees as proposed by Mr. Edwards, may be deemed a doubtful measure, although a small outlay might readily be incurred for the additional gain to be obtained by the use of Coal. In fact under existing circumstances I should feel it to be wrong in me knowing the large and increasing outlay for Oil, and that which would be required for Coal, with the comparative amounts and values of the respective products, did I not in so far as my humble voice can go, respectfully press these matters on the attention of Government. Interest on the outlay to be incurred, should it be the pleasure of Government to sanction the course now recommended, will be on the original 12,000 Rupees + 2,000 Rupees for alterations and additions,+ such amount as may be resolved on for mains and piping required for the whole Fort say Rupees 3,000 for 1 year which will suffice to carry the piping to the Government Office and the Church; the gain on which will about repay the cost in one year. In the 2nd year a similar expenditure will carry the piping over another part of the Fort, the 3rd year will complete the lighting of the Fort and by that time, *i. e.*, 3 years, the outlay for piping should be recovered or nearly so. In this way the interest on outlay would vary during each year in the 1st year, it would be on 17,000 Rupees, in the 2nd on 20,000 and on the 3rd 24,000.

Interest at 5 per cent. on Rupees 17,000 for the 1st year will be 850, and on 20,000 for the 2nd year 1,000, and on 24,000 for the 3rd year 1,200.

The average interest therefore on the whole outlay will be about 1,000 Rupees per annum, while the gain on 400 Cocoanut Oil lamps would be 12,000 Rupees per annum, and on 400 Oil Gas lamps 4,800 per annum—deduct interest on the whole *plant* 1,200 per annum, 3,600 remains—deduct again 480 = 2 per cent. for wear and tear, 3,120 will remain, and if an allowance say of 1,000 Rupees per annum be granted for the charge of the works and the management of the whole undertaking, there will still be nearly 2,000 per annum clear gain on the projected changes. While the lights will be increased largely in number, viz., by 27 lights and in power will certainly be at the lowest estimate four times as illuminating as the present lamps, while the cost for the whole Fort will actually be less than it is at present.

In obedience to the expressed wish of the Government I have suggested a certain sum as remuneration, although it would have been more in accordance with my own wish to have left this matter entirely in the hands of the Government.

ORDER THEREON, 18th March 1862, No. 318.

In reply to the call made upon him in the Proceedings of Government 7th January last, No. 11, Mr. Mayer submits his estimate of the expense of lighting the buildings, &c., in the Fort with Coal Gas, as compared with the expense of Oil lamps and of Oil Gas lamps.

2. The cost of each description of light per month is stated to be:

	Rs.	A.	P.
1 Oil Lamp...	3	8	0
1 Oil Gas do.....	2	0	0
1 Coal Gas do.	1	0	0

3. It is calculated that ultimately 400 lights will be burned nightly in the Fort. The cost will then be annually—

	Rupees.
For Oil Lamps... 400 × 3½ × 12 =	16,800
For Oil Gas do... 400 × 2 × 12 =	9,600
For Coal Gas do... 400 × 1 × 12 =	4,800

4. Thus for the above number of lights, Coal Gas would be cheaper than Oil Gas by Rupees 4,800 and than Oil lamps by Rupees 12,000 a year.

5. The cost already incurred in the Machinery and fittings that have been put up is Rupees 12,000, to which add Rupees 2,000 for alterations and additions to adapt it to Coal Gas, and Rupees 10,000 for piping, the total cost of the plant will be Rupees 24,000.

6. Interest on this outlay at 5 per cent. will be ... ... Rupees 1,200
Say 2 per cent. for wear and tear... ... . „ 480
For charge of works and management... ... ... „ 1,200
2,880

which deducted from Rupees 4,800, amount saved by use of Coal Gas, leaves a net gain of Rupees 1,920 per annum, the illuminating power of the lights being at the same time largely increased.

7. The advantage to be derived from the use of Coal Gas being thus established, the Government consider it desirable that the scheme should be adopted. Mr. Mayer will accordingly take the necessary steps for carrying it out in communication with the Chief Engineer, who will submit Plans and Estimates of the additions required to the present Gas works, and will take measures for procuring the necessary piping.

8. For the charge of the works and for the general management of the undertaking, the Government resolve to grant a remuneration of Rupees (100) one hundred per mensem. This allowance will therefore be passed to Mr. Mayer so long as he may be in charge. It is observed that Dr. Mayer has hitherto given his assistance in this desirable measure gratuitously at the cost of no small time and trouble. The charge must be regarded as a Military charge and provision made for it by the Controller of Military Finance. It is presumed that it may be met out of the saving to be effected by the use of Coal Gas lights in lieu of Oil lights and Oil Gas lights.

9. It has occurred to Government that the Regimental Mess House might with advantage be lighted with Gas. Mr. Mayer will be good enough to provide accordingly in his general arrangements.

(True Extract.)

Chief Secretary.

To J. E. Mayer, Esq., with plans.
To the Military Department.
„ Department Public Works,

Exd. F. Cartledge.

Public Works 1862 Dept.
Rec: of Govt. for March

No. 803

Rec: of the Harbour Govr.
in the Public Departt.

Dated 18th
Received 20th } March/62

No. 348.

Requiring steps to be taken
necessary steps for the adoption
of Coal Gas in the Fort as well
as in the Government offices
Town in Communication
with Chief Engr. who is directed
to submit Plans and Estimates
of additions required
to the present Gas Works and
of Quantities &c. &c. Master &
Remuneration of Mr. Wilson
Clemens as above requiring
the Controller & Military
Finance to make provision
for the above charge

Public Works
20th March 1862

To The Dep.y Chief Engr.

No. 507.

Communicated to the
Dep.y Chief Engineer Public
Circle, with a request particular
attention is requested to paragraphs 1 and 9
of the orders in the
Public Dept.

Fort St. George
20th March 1862

To The Dep.y Chief Engr.

C.E. Dispatch

With an Order
No. 307 - 20 March

£ x.87.