

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

11th March 1879, No. 718 W.

Buildings and Roads.
Civil Works.

Read the following papers:—

No. 128. From W. PARKES, Esq., M.I.C.E., Engineer-in-Chief, Madras Harbour Works, to the Secretary to Government, Public Works Department, dated Madras, 15th February 1879, No. 4 W.

In accordance with the memorandum of the Chief Engineer, dated 12th November 1878, to the effect that Government

A plan and section on one sheet: had decided to defer the general question of the drainage of the foreshore of the Harbour till my arrival at Madras, I have now the honor to inform you that I have given the subject my best consideration, and have had the advantage of two interviews with His Grace the Governor and several consultations with Mr. Jones, the Municipal Engineer, as well as the assistance of Mr. Thorowgood and Mr. Beardmore.

2. I think there can be no doubt that it will be ultimately necessary to intercept from the Harbour all possible vents for storm water, but there is certainly much force in the suggestion that in the present undecided state of the question of the general drainage of the Black Town, and of the ultimate arrangement of that portion of the foreshore which faces the Harbour, it is hardly possible to foresee what particular mode of carrying out that interception will be most convenient. During the short interval that will elapse before these questions are decided, the storm waters may without much evil be permitted to escape as at present, and the works of interception be adapted only for the daily flow of house drainage.

3. The discharge to be dealt with is that of a population of about 20,000.

4. There are altogether thirteen sewers carried under the Beach Road between Messrs. Parry and Co.'s and Clive's Battery, but of these, only four bring down house sewage, the others being merely surface drains from the premises immediately facing the beach, and if they receive sewage at all, it may be more easily diverted to some of the open Black Town drains at the back, and thus conducted into the intercepting sewer, than by making connections directly with the latter.

5. The quantity of sewage which actually reaches the present mouths of the above four sewers is very much less than that which must be delivered from the houses, as by some gaugings made by Mr. Beardmore in January 1878 the daily flow amounted to little more than $2\frac{1}{2}$ gallons per head of the population. An improved drainage and water-supply may be expected greatly to increase the flow and the consequent necessity of interception. Mr. Jones is of opinion that when these improvements which are urgently required are carried out, the flow may amount to 15 gallons per head per diem, of which one-half will run off in six hours, and for this I propose therefore to make provision.

6. I think that the whole of the foreshore between Fort St. George and Royapuram must be considered as unavailable for drainage outfalls. The Harbour frontage about one-half of the length is obviously so, and the remainder will be always liable to annual fluctuations of the line of beach, which will render it impossible to maintain the mouth of a drain in any fixed position. This fact will I expect soon force itself on the attention of Government as an additional reason for making a better provision for storm waters, than is afforded by the southern mouth of the great Black Town sewer.

7. We are thus led to Royapooram as the nearest site for the outfall of the intercepting drain, and fortunately it has certain advantages for the purpose. It is entirely free from changes of the shore line of the same kind as those which are taking place south of the Harbour, and the surf which is constantly beating upon it will prevent any foul deposit on the foreshore. The artificial beach of laterite which protects the face of the north surf bank of the Harbour Pier will form an excellent bed for the outlet pipe.

8. The disadvantage of the site is that it is in the neighborhood of a dense population, to whom the northern outfall of the Black Town sewer is already a nuisance, which is sometimes intolerable. I believe, however, that the nuisance is due to preventable causes, and it has been materially reduced by the addition made under Mr. Thorowgood's direction of an iron pipe from the mouth of the sewer to a point 155 feet further seaward, which carries off the sewage in a constant discharge instead of its being permitted to accumulate in the sewer, where it fermented and in turn re-absorbed its own foul gases. The sewer, however, is still a reservoir of the foul gases for which there is no proper means of escape provided, and it is to the absorption of these gases by the fresh sewage, rather than to the inherent foulness of the sewage itself, that the remaining nuisance is due.

9. I feel sure that these evils may be avoided in the outlet of the proposed intercepting sewer, so that the present nuisance shall at least not be aggravated. The gases should have as free an exit at the upper end of a sewer as the liquids have at the lower end. If this is effectually provided for, there is no reason why the outlets of the sewers should be offensive.

10. I therefore propose that the junctions of the four existing drains with the new drain should be made airtight, but recommend that the upper ends should be trapped to prevent the escape of gases at the points where they receive the contents of the open town drains, and that each "dead end" so formed should be connected with a ventilating shaft carried up to at least 15 feet above the tops of the neighboring houses.

11. The junctions with the intercepting drain must be so constructed that while they do not permit the escape of gas they will permit the escape of an excess of storm water. This may be effected by making the storm overflows in the form of traps, which will have to be kept supplied with water.

12. I propose that the four existing drains should not be directly connected with the intercepting drain, but that the junction be made to wells of brickwork 4 feet internal diameter, sunk 8 feet into the sand. These will serve as catch-pits for the grosser solid particles brought down from the town drains, which may be removed periodically. The wells will be covered with granite slabs in which the trapped arrangement for the storm overflow will be made.

13. The drain will be laid out in a straight line between its junctions with the two extreme town drains No. 10 and No. 2 on the plan, passing under the screw pile pier as close to the abutment as practicable. From the junction under the screw pile be carried direct under the north surf bank to the laterite foreshore where it will discharge at about mean sea level.

14. The inclination will be 1 in 700 throughout. I propose to form the lower half of the section of Portland cement concrete deposited in situ in a trench dug for the purpose, the upper half to be of brickwork, set and jointed in cement mortar. The last 50 feet will be of cast iron pipes.

15. If the capacity of the drain be made sufficient to carry only the discharge of the four drains it is intended primarily to intercept, a diameter of 12 inches would be sufficient; but I would strongly recommend that it be made sufficient to carry also the sewage now being pumped up near the fort, which by a little modification of the present pumping arrangements might be delivered into an extension of the intercepting drain at the same inclination. Thus the constant daily discharge at the fort and the nuisance caused by it would be done away with, but the storm water would be left to discharge as at present into the sea.

16. This extension of the scheme would, however, of course be carried out by the Municipality. The liability of the Harbour Works will terminate at drain No. 10.

17. In order to obtain sufficient inclination for the sewer, it will have to be laid for a portion of its length at a depth so little below the present surface of the ground that it will not be covered sufficiently to be protected from injury. It will therefore be necessary to raise the level of the ground in this part nearly to that of the adjoining Beach Road. This in itself will be an improvement, and only an anticipation of what would ultimately be required on other accounts.

18. The cost of the whole work I estimate at Rupees 13,603 if adapted for the local sewage only; or Rupees 17,811 if enlarged to receive the fort outfall, both including 10 per cent. for contingencies. This amount includes the cost of forming junctions with the present sewers as they exist, but does not include any allowance for improvement in those sewers above their outlets, or for ventilating shafts at the upper ends. These I have presumed would be borne by the Municipality.

No. 128-A. From the same Officer, dated Madras, 25th February 1879, No. 8.

In reply to your memorandum, No. 752, of yesterday's date, I have the honor to state that in the event of the extension of the canal to the Harbour being carried out, the intercepting drain, whether conveying sewage only or storm waters also, may without difficulty be constructed below the bed of the canal as an inverted syphon culvert.

No. 128-B. From the same Officer, dated Madras, 1st March 1879, No. 9 W.

YOUR memorandum of yesterday's date requests further explanation relative to the "improvement in the present sewers above their outlets," allowance for which is stated not to be included in the estimated sums of Rupees 13,603 and Rupees 17,811.

2. My estimate includes making junctions with the present drains as they exist, but assumes that they either are or will be made at the expense of the Municipality in a suitable state for conveying the sewage to those junctions.

3. It is admitted that the covered drains ought to be trapped and ventilated at their upper ends in any case, but in order to do this effectually it may be necessary to put them in a state of complete repair throughout their whole length and perhaps to close some subsidiary openings. I have not thought it within my province, however, to make such an examination of the drains as would enable me to specify what works are necessary for this purpose. They ought to be carried out in any case, but the urgency for them will be increased by the connection with a further length of half a mile of covered drain. That connection may bring imperfections in the existing drains to notice, but it will not be the cause of them, and they should be remedied at the expense of the authority in whom the maintenance of the drains is vested and not at that of the Harbour Works.

No. 129. ORDER THEREON, 11th March 1879, No. 718 W.

In these letters Mr. Parkes explains his proposals for dealing with the town sewage which at present finds its way into the Harbour enclosure; and, upon the understanding that those proposals have been approved by the Municipal authorities, they are sanctioned for immediate execution.

2. His Grace the Governor in Council cannot, however, accept the statement in paragraph 16 of Mr. Parkes' letter to the effect that the liability of the Harbour Works will terminate at drain No. 10. In a previous paragraph Mr. Parkes expresses the opinion that the entire foreshore as far south as Fort St. George will be liable to annual fluctuations of the line of beach, which will render it impossible to maintain the mouth of a drain in any fixed position. In this latter opinion the Government concur; and those fluctuations in the beach line, which will probably become more marked from year to year, are without doubt due solely to the action of the Harbour Works.

3. For these reasons His Grace in Council is of opinion that the proposed intercepting drain should be made of sufficient capacity to receive the sewage which has hitherto been discharged into the sea to the north of the fort, alluded to in paragraph 15 of Mr. Parkes' letter, as well as the discharge of house sewage from the four drains mentioned in paragraph 4.

4. The larger of the two estimates submitted by Mr. Parkes, amounting to Rupees 17,811, is accordingly accepted; but the Government are of opinion that the proposed intercepting drain should be extended to the south sufficiently to receive the fort outfall; the entire work forming a charge against the Harbour Works.

5. The ventilating shafts alluded to in paragraph 10 of Mr. Parkes' letter should be constructed by the Municipality; and the President will be requested to take the necessary measures for this purpose, in communication with the Superintendent of the Harbour Works. Any improvement which may be necessary in the existing sewers should also be carried out at the expense of the Municipality; except so far as an alteration in their levels may be rendered necessary to effect a junction with the intercepting drain, in which case the cost of such alteration should be borne by the Harbour Works.

6. It is observed that, in the event of Cochrane's Canal being extended to the Harbour, the intercepting drain can be carried below the bed of the canal; and it may be well for the Superintendent of the Harbour Works to consider the expediency of constructing the necessary syphon in the first instance.

(True Extract.)

(Signed) J. H. M. SHAW-STEWART, Colonel, R.E.,
Ag. Secy. to Govt., P.W.D.

To the Superintendent, Madras Harbour Works.
" Financial Department.
" Superintending Engineer, Third Circle.

" Mr. Parkes, M. A. C. E.

Exd. T. D. Ryan.

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BUILDINGS AND ROADS.
CIVIL WORKS.



Govt. of (1879) Madras.

PUBLIC WORKS.

The SUPERINTENDENT,
MADRAS HARBOUR WORKS,

&c., &c., &c.

Dated March 11th.

Issued

Recd.

Encl.

G. O., 11th March 1879, No. 718 W.

MARCH

Nos. 128-129.

Drainage of the Foreshore between the
Groyne of the Madras Harbour.—Orders on
correspondence from Mr. Parkes on the
subject of the —.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

7th April 1880, No. 900 W.

Buildings and Roads.

Civil Works.

Read the following papers:—

No. 20. From Supt., Madras Harbour Works, dated 26th May 1879, No. 11 W.
No. 20-A. From do. do. „ 14th June „ „ 17 W.

No. 20-B. Proceedings of Harbour Committee, dated 7th July 1879.

No. 20-C. From Sanitary Commissioner for Madras, dated 8th July 1879, No. C 12.

No. 20-D. From President, Municipal Commission, Madras, dated 13th February
1880, No. 201.

No. 20-E. From Supt., Madras Harbour Works, dated 24th March 1880, No. 69 W.

No. 21. ORDER THEREON, 7th April 1880, No. 900 W.

HIS GRACE the Governor in Council sanctions the construction of a catch-water
drain according to the design submitted with the Superintendent's letter No. 69 W.
of 24th March 1880, for intercepting the outflow of storm water, at an estimated cost
of Rs. 7,000, in addition to the closed intercepting sewer sanctioned in G.O.,
No. 718 W. of 11th March 1879.

2. It is understood that there is no difficulty about sand northwards, but at
the southern end no doubt sand tracks will be found, as at the main sewer and Fort
drains, which probably a very small amount of daily labor will keep open.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintendent, Madras Harbour Works,
„ Financial Department.
„ Sanitary Commissioner.
„ Harbour Works Committee.

Exd. S. T. Austin,
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Gobt. of (1880) Madras.
PUBLIC WORKS.

To
THE SUPERINTENDENT, MADRAS
HARBOUR WORKS,
&c., &c., &c.

Dated April, 7th.

Issued

Recd.

Encl.

G. O., 7th April 1880, No. 900 W.

APRIL.
Nos. 20-21.

Catch-water Drain, Madras Harbour.
Works.—Sanctions with remarks the construction of a — for intercepting the outflow of storm water at an estimated cost of Rs. 7,000 in addition to the closed intercepting sewer sanctioned in G.O., of 11th March 1879, No. 718 W.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

11th October 1880, No. 2,335 W.

Buildings and Roads.
Civil Works.

Read the following paper :—

No. 46. From F. N. THOROWGOOD, Esq., M. INST. C.E., Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department, dated Madras, 2nd October 1880, No. 44 W.

I HAVE the honor to submit the following report of the progress on these works during the past month of September in which no less than 447 lineal feet of deep sea piers have been constructed, being 90 feet more than was built in the previous month of August.

2. *North Pier Superstructure.*—The weather in September was favorable for work (excepting heavy rains in the early part of the month) and every advantage was taken of the quiet sea to push the construction on rapidly. There were 360 blocks set in the north pier, advancing the work by a length of $210\frac{3}{4}$ lineal feet, and making the total length from the point B on 30th September $3,512\frac{1}{2}$ feet. A length of 163 feet in advance of the present termination brings the work to the commencement of the pier head.

3. The large number of blocks set in the north pier during August and September (viz. 680) has severely taxed the supply, and a few days' delay is unavoidable in order to insure the use of no blocks that are not thoroughly hardened.

4. *North Pier Rubble Base.*—The deposit of stone in the rubble base was as great as could be managed, but not nearly such as I could wish. The failing supply of laterite at Ambatūr, together with the laying up of the two Steamers *Hobart* and *Salisbury* for repairs, seriously interfered with rapid progress under this head. There were 12,445 tons of stone deposited in September, of which the steam hoppers conveyed only 3,935 tons. The blockwork has now run rather close on the end of the rubble bank which extends 215 feet in advance of the last block, but is not fully made up for more than half this distance. The enforced stoppage of blocksetting for eight or ten days will give an opportunity for completing the base as far as the pier head, and at the same time will restore the proper amount of advance of base over blockwork.

5. *Concrete Blockmaking.*—Unfortunately during September, although the rapid and constant making of blocks was most important, the heavy rains in the early part of the month prevented any work being done on many days. And when with much difficulty the blockmaking gangs could be kept at work the rain at the Pallāvaram quarries interfered with a sufficient supply of suitable stone. Every exertion has been made since the rain ceased to make up for the lost days, and 483 blocks were turned out during the month, but I had hoped to be able to make 70 or 80 more than that number. The work done in the last two months has been so much in excess of the estimated rate of advance of 150 feet a month that I hope it need not be a matter of surprise that we should have used up all the thoroughly seasoned blocks for one pier. There is no want of blocks for the south pier.

6. The special blocks for the north pier head are now being made, and of these sufficient are ready for the first 50 feet of that portion of the work.

7. *Quarries.*—The rain already referred to interfered much with work at the quarries in the early part of September, but every exertion has been made to keep the

supply up to the requirements. From Ambatúr 14,812 tons of laterite were received, and from Pallávaram 18,365 tons of granite, giving a total for the month of 33,177 tons, which is about 7,000 tons less than we require to keep all branches of the works going at full speed.

8. At Pallávaram the Contractor Kazim Ali Nakry Sahib has completed a separate line at his own cost (the harbour works lending the rails) which was passed for traffic throughout on 27th September. The despatch of stone from this quarry will be much assisted by the opening of this line.

9. *South Pier Superstructure.*—At the south pier I have the pleasure to report a greater rate of advance than I myself ever anticipated and I believe than has ever been reached before in any deep sea work. There were set in September 416 blocks, advancing the pier by a length of $236\frac{1}{4}$ feet, and bringing the total length from the point E to $2,972\frac{1}{2}$ feet. There now remains only a length of 51 feet to complete the curved work of this pier.

10. *South Pier Rubble Base.*—The supply of stone to the south pier base was below the usual amount as at the north pier. During September 12,823 tons were deposited, of which the steam hoppers only conveyed 2,923 tons. At this pier also the blockwork is following rather too closely on the base which extends only 220 feet in advance of the last block, and is made up fully for 120 feet of that length. Every exertion will now be made to hasten the completion of the two bases as rapidly as possible, the feeble condition of the two steamers having thrown this branch of the work back unavoidably.

11. *Protective Works to the Beach.*—The sea continues to encroach to the north of the Police tannah, and it has become a difficult matter to supply sufficient stone to protect the shore without seriously impeding the progress of the harbour works themselves. I have made arrangements for putting on a greater force at the protective works at this spot, and I hope that by constructing a good revetment in the next ten days to prevent any damage to property before the wind changes to the north-east. With a change of wind a change of effect from the wave action may be relied on. In September 900 tons of boulders were used in protective works.

12. *Intercepting drain along Beach.*—The intercepting drain from the Fort to Ráyapuram has worked very well hitherto. The heavy rains at the beginning of September taxed it pretty severely and obliged me to make some alterations in the storm overflows which are not yet completed. The only danger to be apprehended seems to be that the Municipal authorities may surcharge the sewer by excessive pumping at the southern end, but over their operations I have no control. The size and gradient of the sewer was approved by their Engineer at the commencement.

13. *Steam Hopper Barges.*—I have twice referred to the laying up of the *Hobart* and *Salisbury*. This had to be done in order to replace their boiler tubes, a task which, owing to the peculiar construction of the vessels, involved shifting the boilers bodily. At some risk I ventured to carry on these repairs at Madras in the open sea and the result has been satisfactory. The new tubes were procured from Bombay and the *Hobart's* repairs were completed on 23rd September. The *Salisbury* was laid off on 22nd September and the renewing of the tubes is still in hand. The work was in the immediate charge of the Engineers of the vessels, to whom much credit is due for its successful carrying out under particularly inconvenient circumstances. The bottoms of both vessels are very foul from barnacles, &c.

14. *Stores received on works from England.*—The following vessels have arrived with stores from home during the past month. It will be observed that amongst them are some of the articles mentioned by me in my letter to Government, No. 40 W., of 10th September, on which G.O., No. 2,158 W., of 14th September, was passed: I had no advice of the despatch of the articles when I wrote:—

S.S. *Duke of Argyll*—45 bolts of canvas.

18 stone-crusher jaws (20 ordered).

1 case India-rubber washers.

S. *Latona*—1,982 casks of Portland cement (of which 1,370 are landed).

15. *Expenditure.*—The expenditure during the month of September (subject to correction in detail) has been Rs. 1,53,971, and the total expenditure up to date, exclusive of outstanding accounts, has been Rs. 45,23,045.

16. *Plans and Sections.*—The usual lithographed plan on a scale of 200 feet to 1 inch accompanies this report, showing the Harbour Works line on 30th September in brown edged with blue. The Harbour Works line of 31st August is shown in green. Two sections showing the blockwork built in the month and the extent of the two rubble bases also are forwarded.

17. *General Remarks on Progress.*—With September terminates the third quarter of the year 1880, during which quarter the advance of the north pier has been 487·6 and of the south pier 572·3; this is the greatest amount of work done in any three months up to the present date. The remaining three months of the year cannot be reckoned upon for much progress, as in the deep water now reached only a slight sea from the north will interfere with operations. But the concrete blocks for the north pier head may be completed and there seems to be no reason why the north pier should not be finished before the end of the financial year 31st March 1881.

No. 47. ORDER THEREON, 11th October 1880, No. 2,335 W.

THE Government note with much satisfaction the rapid rate of progress at both piers.

2. The Superintendent's remarks in regard to the danger to be apprehended from over-pumping at the southern end of the intercepting beach drain will be communicated to the President of the Municipal Commission in the Financial Department.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintendent, Madras Harbour Works.
" Secretary, Harbour Works Committee.
" Financial Department.
" Marine do.
To General Morgan.

Exd. E. C. Shunker.
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BUILDINGS AND ROADS.
CIVIL WORKS.

Gobt. of {1880} Madras.
PUBLIC WORKS.

To
THE SUPERINTENDENT OF THE
MADRAS HARBOUR WORKS,
&c., &c., &c.

Dated October, 11th.

Issued

Recd.

Encl.

G. O., 11th October 1880, No. 2,335 W.

OCTOBER.
Nos. 46-47.

Progress Report of the Madras Harbour
Works for September 1880.—The rapid
rate of progress at both piers noted with
satisfaction.

22ND MAY 1882, No. 1290 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Account.

No. 123.

READ—the following papers:—

From the Master Attendant, Madras, dated 28th February 1882, No. 1672.
" Superintending Engineer, Fifth Circle, dated 9th March 1882, No. 1246.
" President, Municipal Commission, Madras, " 29th " " " 469.
" Superintendent, Madras Harbour Works, " 18th April " " 3 W.
" President, Municipal Commission, Madras, " 28th " " " 607.
" " " " " 11th May " " 655.

No. 124.

ORDER—dated 22nd May 1882, No. 1290 W., Public Works.

In his letter of the 28th February 1882, No. 1672, the Master Attendant, Madras, complained of the offensive smell emitted from one of the Black Town drains opening out near the Pier and Marine Police Offices. The cause of the nuisance is explained in the correspondence noted above to the raising of the beach within the harbour limits, whereby the natural outfall of the drain, hitherto discharging into the sea, has been blocked.

2. The remedy proposed is a connection between the outfall of the drain and the harbour intercepting sewer.

3. The liability for the cost of the work has been fully discussed with the President of the Municipality; and Mr. Arundel's proposal, that the cost of the work should be shared in equal portions by the Municipality and the Harbour Works, is sanctioned. The work will be at once carried out by the Harbour Superintendent, and on completion will be vested in the Municipality, who will thereafter bear all charges for maintenance.

4. Funds will in the first instance be provided by the Superintendent of the Harbour Works, who will, as soon as possible, submit a regular estimate for the formal sanction of Government.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintendent, Madras Harbour Works.
" Master Attendant, Madras.
" Superintending Engineer, Fifth Circle.
" President, Madras Municipal Commission.
" Financial Department.
" Examiner of Public Works Accounts.

Exd. A. F. Goodall.
Spare Copies

GENERAL.
ACCOUNT.

Govt. of (1882) Madras.
PUBLIC WORKS.

Dated May, 22nd.

Recd.

Encl.

G.O., 22nd May 1882, No. 1290 W.

MAY.
Nos. 123-124.

Drain near the Pier, Madras.

Remedial measures for removing the nuisance
caused by the —. Sanctions, with remarks
as to the incidence of the charge, the —.

3RD JULY 1882, No. 1674 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

No. 22.

READ—the following letter from N. St. B. BEARDMORE, Esq., C.E., Acting Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department, dated Madras, 23rd June 1882, No. 16 W.:—

I have the honor to forward an estimate for the construction of a drain to connect No. 5c drain with the Harbour Works intercepting sewer as requested in G.O., No. 1290, of 22nd May.

2. With reference to the remark in the first paragraph of the order, as to the necessity of connecting this drain being due to the raised beach, may I ask if I am to charge any share of the cost to the contingencies of the Harbour or to the Port Funds, as it was to those funds that all the other costs of the raised beach and subsequent extension of drains have been charged.

No. 23.

ORDER—dated 3rd July 1882, No. 1674 W., Public Works.

The estimate, amounting to Rs. 350, is sanctioned. The Superintendent of the Harbour Works will place himself in communication with the Master Attendant, Madras, in regard to the incidence of the charge as affecting the Harbour Works and Port Funds.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintendent, Madras Harbour Works.
" Master Attendant, Madras.
" President, Madras Municipal Commission.
" Examiner of Public Works Accounts.
" Financial Department.

Exd. A. F. Goodall.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1882} Madras.
PUBLIC WORKS.

Dated July, 3rd.

Recd.

Encl.

G.O., 3rd July 1882, No. 1674 W.

JULY.
Nos. 22-23.

Madras Harbour Works.

Constructing a drain in connection with the
— . Sanctions estimate for — .

P. W. C. No. 1070.

Municipal Office,

PUBLIC WORKS AND CONSERVANCY DEPARTMENT.

Madras, 9th November 1883.

From

A. J. Brundel Esq
President, Municipal Commission.

To

The Honble C. G. Master,
Chief Secretary to Government
Fort St. George.

Sir,

In returning the enclosures that accompanied the Under Secretary's memorandum of 2091 dated 26th October 1883, I have the honor to inform you that I have made the best arrangements practicable for abating the nuisance complained of by Mr. Sharawgood pending its entire removal within a very short time.

2. With a view to diminish the amount of sewage discharged through the Intercepting Sewer into the sea at Royapuram I have arranged to have the sewage from the South Drain discharged direct into the sea when tide permits, and the wind is off shore.

3. Iron pipes have been placed at Mr. Sharawgood's disposal that he may

may carry out his suggestion of extending the outlet of the Intercepting Sewer into deeper water.

4. Pumping at night will probably be needless under these circumstances but will be resorted to if necessary.

5. As the Intercepting Sewer which falls into the sea at Royapuram must always discharge a quantity of Sewage received en route apart from all pumping out of the South Main Drain the arrangements that I have made will not completely remove the nuisance, though I trust they will very materially abate it. The complete removal of the nuisance will be effected as soon as work is sufficiently advanced to allow the new drainage works at Royapuram to come into action. But little more ^{now} remains to be done, and I hope that before the end of next month the Royapuram Steam pumps will be in regular working and that the nuisance complained of will entirely cease.

6. I regret that no effective arrangements

arrangements were made on Mr. Pharaogodo's representations to this office during my absence on leave.

I have the honor to be,

Sir,

Your most obedient Servant

A. J. Brundell

President,
Municipal Commission.

B.D.

C.M.

Very urgent

No. 3372

FROM

THE SUPERINTENDENT,
MADRAS HARBOUR WORKS,

TO

*The Secretary to Government.
P. W. Department.*

MADRAS, 23 October 1883.

Sir, I have the honour to appeal to Government in the hopes of obtaining some assistance in suppressing a most serious and dangerous nuisance created by the Madras Municipality, which nuisance is at times so utterly intolerable as to render this Office uninhabitable except under most dangerous conditions, —

2 In the years 1879-80 I constructed a drain along the shore of the Harbour in order to intercept the cut-off from the cross drains which formerly used to discharge upon the beach. By order of Government this intercepting drain was extended to near Fort Saint George, to form a conduit for carrying the pumped up Sewage from the Black Town sewer. This intercepting drain discharges itself into the sea in front of this Harbour Works Office. The effluvia from the discharge was always unpleasant and unwholesome but latterly it has been perfectly overpowering and sickening from 7.0 A.M. to 5.30 P.M., and it is really perfectly impossible to carry on any business under its penetrating and

*Pl. 2
10249/83*

nauseous influence.

3 During the South West monsoon the foul gases are blown into the offices of the Madras Railway Company, and every official in those offices will confirm what I state as to the insupportable annoyance that this filthy and poisoned atmosphere becomes. The Agent and Manager instead of addressing Government on the subject has (so he informs me) taken legal proceedings against the Municipality for such an unpardonable nuisance, but I do not yet know the result of his application. Since he applied to his Solicitors, however, the wind has changed and all the poison comes direct into this office and over the blockmaking yard and these places being situated nearer to the outfall than is the Railway Station the results of the foul discharge are felt even more acutely by us of the Harbour Works staff than by the Agent of the Railway.

4 On September 24th I addressed the President of the Municipality and informed him that the stench from this drain was daily so overpowering and sickening that unless he could devise means to obviate it I should be forced to report to Government this office as uninhabitable. On September 26th as no alteration was made nor reply received I wrote drawing attention again

to the stench, and suggested that the ventilating wells should be cleaned out (which have been allowed to be choked up with filth), and further offering to extend the outfall deep into the sea if the Municipality would supply me with the necessary pipes. Also drawing attention to the peckless manner of pumping by which the drain is surcharged, so as actually to burst open the strong brickwork in cement. Paragraph 4 of my letter ran thus:

"Surely in a matter of poisoning,
"such as this must become, the Municipality
"can arrange to pump only at night, & if
"all by day only at one hour before and after
"High water. At night the land wind carries
"the stench to sea and hurts no one."

To this I received a reply from the Vice President stating that he had "given instructions" to close the 12" valve during my office hours; but that there was another drain which could not be closed unless the "President will sanction the costly arrangement of pumping at night."

5 I would now ask if, supposing it costs only half as much again to pump at night as in the day, a body like the Madras Municipality (who should set an example in sanitation) should be permitted to create such a dreadful nuisance for the sake of saving a few rupees per diem?

6 During the last four or five days the wind has again been Easterly - The most refreshing wind that blows in Madras - and again has the foul poison been polluting the air round this office, thus converting the only pleasant wind that we have into a perfect curse.

7 No judgment or discretion is exercised in the manner of pumping, and so much is this the case that on Saturday 20 October I had to write very urgently to the President informing him that want of proper attention had caused the drain to be blocked up, that the pumping was nevertheless going on at full speed, and that the result was the drain was blown up and cracked, the filthy sewage discharging over the sand & now is this all - The Municipality constructed a cross drain in 1881-82, with an overflow to carry off the rain-water just to the South of the South Pier of this Harbour. By reason of the excessive pumping, which fills the drain with sewage to the very top and rises three inches above the top in the ventilating wells, the sewage is actually pouring out at the flood-water overflow and is forming a lake some

4 acres in area of stagnant sewage on the sand by the South Pier!

8 These are simple statements of fact which render work in this office next to impossible and certainly most dangerous, and if a visit is made to the South Pier works we are met there by a large area of stagnant loathsome sewage, both evils of the most horrible type in this tropical climate, and both evils which might be remedied with the greatest ease.

9 The Municipal officers have not ordered the pumping to be carried on at night, for I have a watch set to see the hours of discharge which are from 7-0 AM to about 5-20 PM. From 5-20 PM to 7-0 AM, when no one is within the zone of foul gas, the pumping is stopped presumably to save expense. Not in spite of my very frequent remonstrance, is any discretion used in pumping, for as I write the sewage is three inches over the crown of the drain and is poisoning into the stagnant pool at the South Pier.

10 While this nuisance lasts I am naturally as little at this office as I can be, but even three hours of such an atmosphere is sufficient to produce headache, nausea, and drowsiness, yet in spite of my (& Mr. Beardmore's) representations nothing whatever is done, not

not even so much as a visit from any one
in authority to see the discharge of the drain.
I have no remedy excepting that of ^{summoning} ~~sending~~
the Municipality for creating a nuisance which
is prejudicial to health - I have been advised
by a very high legal authority in Madras
to do this, but before doing so I venture respect-
fully to ask if the Government will not in-
terfere and issue such orders as will compell
the pumping recklessly to cease altogether
and the pumping by day time to be discontinued -

11 In conclusion I most earnestly beg
that the very serious nature of the nuisance
and the very simple nature of the remedy
may be thoroughly considered.

I have the honour to be,
Sir,

Your Most Obedient Servant

J. H. Hargrave M. A. J. L. C.
Superintendent
M. Harbour Works.

Chapman
24th Feb 1883

No 2040C

Transferred
to the Financial
Dept for early con-
sideration & orders
(By order)

C. W. Allen. Major Genl
Under Secretary &
Govt. of India

General
No. 9230
24/2

From

The Superintendent
Madras Harbour Works

dated 23rd Feb 1883
Recd 24th

No 3344.

Quelors Hill

Cauplains of the
Stuck at the Ruth
Black Town drain and
States that the office
is uninhabitable

Transferred

Urgent
1883.

Public Works Department.

No. 2091.

PW 10249/83

Forwarded to the President,
Madras Municipality:
for very early action
and report.

(By order)

qmu Sidlungkaffan
of under sep.

No. 2040 C

Dated 24th October 1883.

Despatched

Received 25

CURRENT No. 3448

NOTE—This paper should
be returned with reply,

Octacomm 26 OCT 83

SUBJECT.

Transferring letter from the
Supdt. Madras Harbour Works
complaining of the stench at
the North Black Town Drain
in the proximity of the Harbour
Works Office.

Joore

CHIEF SECRETARY
25 OCT 83
GOVERNMENT OF MADRAS

Financial Department.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following:—

From the Public Works Depart-
ment, dated 24th October 1883, N^o 2040 C.

From the President, Municipal
Commission, Madras, dated 9th
November 1883, N^o 1070.

Order thereon 17th November 1883 N^o 2605 has
Communicated to the Public
Works Department.

(True Extract)

Quaestor
Chief Secretary.

To.

The Public Works Department
with two original letters.

M. S. B. S.

Journal

From the Little White River
went down to the mouth of the
From the mouth of the
River to the mouth of the
River to the mouth of the

From the mouth of the
River to the mouth of the

From the mouth of the
River to the mouth of the
River to the mouth of the
River to the mouth of the

From the mouth of the
River to the mouth of the

Journal

Mr. No. 10249

Govt. of (188) Madras.

No. 3338 Wd. Nov 22nd 1883.

Communicated
to the Supt. Madras
Harbour Works, for
information.

To

Re PM Dept

WS

Cy.
20/11

20-11-83

Recd 19/11/83

20-3

Proceedings, dated

17/11/

1883

No.

2605

Subject.

No. 3338 Wd. Nov 22nd 1883.

Regarding Complaint
of the Senech at the
North Black Town
Drain in the proximity
of the Harbour Works
Office

gms 23/11

Supt. M. S. S.

87c

17/12

With order
Supt. Dir. Dept.