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.

A plan and section on one sheet.

In accordance with the memorandum of the Chief Engineer, dated 12th November 1878, to the effect that Government 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 Royapooram 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 preventible 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 with No. 2 it will 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. I. C. E.

Exd. T. D. Ryan.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1879} Madras.

PUBLIC WORKS.

To

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 Groynes of the Madras Harbour.—Orders on correspondence from Mr. Parkes on the subject of the —.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

21st May 1879, No. 1,419 W.

Buildings and Roads.
Civil Works.

Read the following paper:—

No. 141. From F. N. THOROWGOOD, Esq., M.INST. C.E., Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department, Buildings and Roads, dated Madras, 28th April 1879, No. 6 W.

I HAVE the honor to state that I am about to commence work at the intercepting drain along the beach, ordered in G.O., No. 718 W, of 11th March 1879.

2. It is probable that from May to August work at the Harbour Piers will often be retarded and prevented by bad weather, and as I shall shortly have enough cement to spare save for the sewer, the present is a good time for starting the work.

3. Before doing so, however, I would respectfully ask to be informed further on paragraph 4 of the Government Order above mentioned, whether the drain should be carried southward to take in the fort drain in the first instance, or whether it should be commenced at the present pumping station and carried along towards Royapooram with a diameter of 18 inches. This diameter was held to be sufficient by Mr. Parkes for carrying off the discharge from the drain by the pumping station, but I do not think he allowed for the drain farther south.

4. With reference to paragraph 6 of the Government Order, I would remark that the construction of the syphon culvert under the canal could be quite easily carried out at a future date when its position might with greater advantage be fixed upon.

No. 142. ORDER THEREON, 21st May 1879, No. 1,419 W.

BY the expression "fort outfall" in the 4th paragraph of Government Proceedings, No. 718 W, of the 11th March 1879, nothing further was meant than the pumping station to the north of the fort. No interference with the drains within the fort limits was contemplated.

2. It is observed that the Deputy Chief Engineer has authorised the commencement of the work at the pumping station.

3. The construction of the syphon can be deferred until the line of canal extension has been determined on.

(True Extract.)

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

To the Superintendent, Madras Harbour Works.
" Financial Department.

Exd. S. T. Austin.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1879} Madras.

PUBLIC WORKS.

To

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

Dated May 21st.

Issued

Recd. *Encl.*

G. O., 21st May 1879, No. 1,419 W.

MAY.

Nos. 141-142.

MADRAS HARBOUR.
Construction of the intercepting drain along the beach.

14TH SEPTEMBER 1885, No. 2151, PUBLIC.

GOVERNMENT OF MADRAS.

PUBLIC DEPARTMENT.

READ—again the following papers :—

G.O., dated 19th May 1885, Mis. No. 1168, Public.

Read—the following papers :—

From P. V. LUKE, Esq., Chief Superintendent, Government Telegraphs, Madras division, to the Chief Secretary to Government, dated Madras, 30th March 1885, No. 7981.

I have the honor to ask that an officer, or, if necessary, a committee may be appointed to examine and report on the sanitary condition of the new Post and Telegraph office and its immediate surroundings, with a view to measures being taken to improve the drainage system and prevent the offensive smells which at present are of frequent occurrence.

2. The two memorandums attached to this letter fully set forth the facts of the case.

ENCLOSURES.

MEMORANDUM by Chief Superintendent of Telegraphs.

The Telegraph department moved into the new building in March 1884, and the Postal department on 1st May following.

2. The occupiers of the building were frequently annoyed by offensive odours, but in the hope that they would ultimately cease, or at any rate be considerably mitigated, no steps were taken to bring the nuisance to the notice of the Municipal authorities till September 1884 when Mr. Dowson, the Officiating Superintendent of Telegraphs in charge of the Telegraph office, addressed the Vice-President of the Municipality pointing out the annoyance to which he and the other residents of the building were subjected, and asking whether remedial measures were possible.

3. The offensive smells occur at different times of the day and night, and may be described as follows :—

(*a*) Smell occurring during the night or early morning and lasting from two to three hours when the wind is in a southerly direction.
(*b*) Smell occurring about 3 A.M. and lasting about two hours.
(*c*) Smell occurring during the day, duration variable and independent of the direction of the wind.

The contention is that (*a*) is caused by the opening of the main drain near the fort ; (*b*) by the sewage which is pumped along the drain on the east front of the building ; (*c*) by defective drainage in the neighbourhood of the building.

4. The Vice-President in his reply admitted the possibility of the main drain when open during rainfall and the sewer in front of the building being two of the sources of annoyance, and stated that the latter was being arched over to make it less offensive, but as regards the former the opening must continue indefinitely and that there was consequently no probability of its becoming innoxious till the new drainage works are complete which will not be for between one and two years.

5. The Vice-President further admitted that the offensive smells might be due to a ventilator on the North Beach road, and this ventilator he very kindly ordered to be closed.

6. From the date of the above correspondence to about the middle of January 1885 the occupiers of the building were comparatively free from annoyance owing, it is thought, to the abnormal rainfall, but since the latter date the odours have been as frequent and as offensive as before.

It has therefore been decided by the Postmaster-General and the Chief Superintendent, Madras division, that the time has come for a strong representation to the Government of Madras in the interest of those whose duties lie in the new Post and Telegraph office, and they are the more confident that their course of action is the right one, because it coincides with that suggested by the Sanitary Commissioner to whom the case was, in the first instance, referred.

MEMORANDUM by Presidency Postmaster.

During one of his visits to the new Post-office building while it was yet under construction, the Presidency Postmaster noticed that the stench emanating from the iron grated opening in the sewer right in front of one of the gateways on the west of the building was exceedingly offensive, and he accordingly wrote to the President, Municipal Commission, on the 18th April 1884, to direct "such measures to be adopted as will put a stop to the nuisance." A reply was received on the 22nd idem from Mr. Jones, the Vice-President, promising that the matter should "receive attention and remedy if possible."

2. The Post office was removed into the new building on 1st May 1884, and, seeing that no steps were yet taken to remedy the evil, the attention of the President was drawn to the subject on the 9th idem.

3. In reply, the Vice-President wrote to say that the nuisance complained of arose from the water-closets in the Post office being connected with the public sewer for which no permission had been granted, and that he had addressed the Consulting Architect to Government on the subject. The Vice-President was informed, in reply, that the Post office portion of the building had no water-closets, and that the Presidency Postmaster presumed that the Vice-President referred to those on the Telegraph side.

4. No reply was received to this communication, but a few days afterwards it was observed that in place of closing the opening that this department objected to, another was made right in front of the gateway leading out from the Post office premises and not far from the clerks' tiffin room.

5. This action of the Municipal authorities was brought to the notice of the Consulting Architect to Government in view to his taking such steps as to have both the openings closed. Copies of these correspondence were sent to the Chief Superintendent of Telegraphs.

6. The Consulting Architect stated, in reply, that he had referred the matter to the Government for orders.

7. On the 27th July 1884, the Vice-President was again addressed by this office, informing him that not only the old opening complained of had not been closed, but that another had been opened in front of the clerks' tiffin rooms, causing thereby greater annoyance and inconvenience to the Post office officials. He was also informed in this letter that the water-closets he had referred to in his letter, No. 531, dated 14th May 1884, did not exist in the Post office and those in the Telegraph office had since been closed. But as the stench still continued he was requested to have the openings closed as early as possible or at least to have them removed higher up towards the north and the south.

8. The Vice-President replied that he could "not close the ventilators as the gas must escape somewhere," and he also made the following remarks:—

"I however am informed that the smell is generally worst when the sea breeze blows, and this therefore probably forces the gas up the drain; I am now trying the effect of a door on the mouth of the drain, and I will be glad to hear in a day or two from you as to whether the smell still continues."

9. The Presidency Postmaster then addressed Mr. Arundel, the President, and in doing so reviewed the proceedings of the municipal authorities in this case from the very commencement, and concluded the letter with the following remarks:—

"Having laid all the facts of the case before you it is unnecessary for me to comment upon them. But I cannot help looking upon the whole proceedings of the municipal subordinates as provoking and obstructive. I complained of one opening opposite one of the gateways of the new building. The municipality opened another opposite the other gateway also. For years past the sewer existed, but there was no second opening. It looks because I complained of one they have given me two. I may be mistaken in my opinion of the municipal subordinates in this case, but the fact remains that a new ventilator has been opened in the place where none existed for years past, soon after I complained of the existence of the old ventilator."

10. A suggestion was also made in this letter for the President to visit the locality in person when the Presidency Postmaster would meet him to explain matters more fully.

11. Mr. Arundel invited Presidency Postmaster's attention to the Vice-President's letter, No. 887, and requested a reply to it before he would take any action in the matter.

12. He was informed that as the work promised had not been taken on hand as yet, no reply could be given, and that the stench still continued and was so intense as to disturb people in their sleep on the third storey of the building.

13. The President wrote, in reply, that temporary door had been fitted to the sewer to prevent the escape of the gas, and that a permanent door would shortly be fixed near the sea which he hoped would complete the remedy. He also stated that there was some difficulty in closing the ventilators, but that if the nuisance should continue even after the arrangements, he would make inquiries as to whether the ventilators could not be closed.

14. As the nuisance still continued the President was informed of it and requested to have the ventilators closed.

15. This the President did.

Although these two ventilators have been closed yet the stench continues in other quarters of the building. The fact is that the building is surrounded by no less than seven openings in the sewer. Two of them (one to the west and the other to the south) appear to be ventilators, and the stench emanating from them is very powerful at times. There are also a large number of openings in the main drain running in front of the building from north to south. These openings and ventilators were, I believe, constructed some years ago when the ground now occupied by the Post office was not inhabited and not even much frequented, and now that the place is inhabited and officials of all grade numbering 165 in all work on the spot almost day and night I think it very desirable, nay, an absolute necessity, that the drain should be diverted to some other part of the town less inhabited and less frequented.

From G. T. MACKENZIE, Esq., President of the Municipal Commission, Madras, to the Chief Secretary to Government, dated Madras, 5th May 1885.

I return the letter of the Chief Superintendent of Telegraphs and its enclosures sent for remarks with your demi-official note of the 1st May.

2. The smell does not come from the main drain near the fort. That is opened only when there is heavy rainfall.

3. An intercepting sewer runs north and south along the beach from the fort to Ráyapuram passing in front of the Post and Telegraph office, and of all the other buildings. It cannot be diverted, and, if any plan can be suggested to carry away the gases from this and two other main sewers in Black Town, the Municipal executive will gladly adopt it.

4. A sewer which passed under the site of the Post and Telegraph office was diverted at the joint cost of Government and the Municipality and now passes round the west and south sides of that office into the intercepting sewer. It carries off the sewage of a low-lying portion of the town to the west of the Post-office and the gas escaped at the highest ventilators at the back of the Post-office until these were closed. The municipal officers would be glad to adopt any feasible method of ventilating this sewer without annoying the neighbourhood. Perhaps Boyle ventilators, carried up above the level of the roofs of the houses, might remedy the evil.

5. I would respectfully suggest that Mr. Jones, the Municipal Vice-President meet the Consulting Architect to Government and discuss the matter.

Order—dated 19th May 1885, Mis. No. 1168, Public.

Communicated to the Public Works department, with a request that the Consulting Architect may be directed to meet Mr. Jones, the Municipal Engineer, as proposed by the President, and submit a report upon the subject.

(True Extract.)

(Signed) E. F. WEBSTER,
Chief Secretary.

To the Public Works department, with papers,
in original, to be returned.
„ President of the Municipal Commission, Madras.
Copy to the Chief Superintendent, Government Telegraphs.

G.O., dated 2nd July 1885, Mis. No. 1502, Public.

Read—the following G.O., dated 23rd June 1885, No. 1455 W., Public Works:—

Read—the following letter from R. F. CHISHOLM, Esq., Consulting Architect to Government, to the Secretary to Government, Public Works department, dated 10th June 1885, No. 365:—

I have the honor to state that, in compliance with G.O., No. 1293 W., dated the 4th instant, I met Mr. Jones, Vice-President of the Municipality, on the evening of the 10th instant, at the Post and Telegraph office, for the purpose of discussing with him the measures to be adopted for preventing the offensive smells of which the inmates of the building complain.

2. There are two main sewers in proximity to the building, one running on the west and south side and the beach intercepting sewer which runs along the east face. Either or both of these are capable under certain conditions of wind and atmosphere of producing the unpleasant smells referred to, although in all probability the intercepting sewer is the great offender.

3. The sewer at the back of the building has three ventilating gratings through which the foul gases escape, and the intercepting sewer has openings at intervals all along the beach. The former may be dealt with by closing the ventilators and fixing a 12″ pipe with an exhaust ventilator on each corner tower of the building. This would have the effect of discharging the gases above the level of the building.

4. With regard to the intercepting sewer, we are sorry to say we can suggest nothing. If at the time the building was being constructed a portion of one of the central towers had been expressly constructed as a ventilator to the intercepting sewer much good would have resulted, but any attempt to do such a thing now would be in the highest degree dangerous. If the openings in the intercepting sewer to windward of the building are closed, the gases will only assume a more noxious and concentrated form, to be eventually discharged on some unfortunates who will get more than their share of the evil. We regret extremely that we have nothing to suggest within the range of practicability.

5. Mr. Jones is under the impression that the ventilating shafts proposed for the sewer to the west and south of the building may from the considerable elevation at which they will discharge, cause a quantity of gas be drawn from the intercepting sewer of which the former sewer is a branch, and it would be well to wait and see whether this anticipation turns out to be a fact before any further measures in regard to the intercepting sewer are considered.

Order—dated 23rd June 1885, No. 1455 W., Public Works.

Communicated to the Public department, with reference to G.O., Mis. No. 1168, dated 19th May 1885, the enclosures of which are herewith returned.

2. The Consulting Architect will submit an estimate for dealing with the sewer on the west face of the building in the manner proposed in paragraph 3 of his letter.

(True Extract.)

(Signed) C. BOWEN, Major, R.E.,
Under Secy. to Govt., P.W.D.

To the Public department, with four enclosures.

Order—dated 2nd July 1885, Mis. No. 1502, Public.

Communicated to the Postmaster-General and to the Chief Superintendent, Government Telegraphs.

(True Extract.)

(Signed) M. HAMMICK,
Ag. Under Secy. to Govt.

To the Postmaster-General, Madras.
„ Chief Superintendent, Government Telegraphs.
„ President, Municipal Commission, Madras.

Read—also the following papers:—

From P. V. LUKE, Esq., Chief Superintendent, Government Telegraphs, Madras division, to the Chief Secretary to Government, dated Madras, 4th August 1885, No. 2339.

With reference to G.O., Public Works department, No. 1455 W., dated 23rd June and Public department, 2nd July 1885, Mis. No. 1502, I am desired by the Director-General of Telegraphs to ask the Madras Government to appoint a committee to examine the new Telegraph office with the view of giving an opinion as to whether residence on the premises is prejudicial to health; and to request the matter may be considered, first, with reference to the present state of the evil; and, secondly, after the ventilating shafts, for which the estimates are now with the Director-General, have been fitted.

From the Surgeon-General with the Government of Madras, dated Coonoor, 3rd September 1885, No. O-393.

Order—dated 14th September 1885, No. 2151, Public.

The Government resolve to appoint a committee consisting of the officers noted in the margin, with the Sanitary Commissioner as President, to consider and report on the matter referred to in this letter.

The Consulting Architect to Government.
The Vice-President in charge of Public Works and Conservancy, Madras Municipality.
Dr. Porter.
„ Sipthorpe.
„ McNally.

(True Extract.)

W. WILSON,
for *Chief Secretary.*

To the Sanitary Commissioner for Madras.
„ Members of the Committee.
„ Public Works department.
„ Chief Superintendent, Government Telegraphs, Madras.
„ Postmaster-General.
Copy to the Surgeon-General with the Government of Madras.

Exd. J. Wright.

Govt. of {1885} Madras.

PUBLIC.

Issued

Recd. *Encl.*

G.O., 14th September 1885, No. 2151.

SEPTEMBER.

New Telegraph Office.

Appointing a committee to consider and report on the question whether residence on the premises of the — is prejudicial to health, with reference to certain evils previously brought to notice.

See Original copy of Public Deptt GO No. 2151 dt 14th Septr 1885

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers:—

From R. F. CHISHOLM, Esq., Consulting Architect to Government, to the Chief Engineer, Public Works Department, dated Chepâk, 2nd July 1885, No. 507.

I have the honor to submit herewith the plan and estimate called for in G.O., No. 1455 W., dated the 23rd June 1885, for providing exhaust ventilators to the sewer at the back of the Telegraph office and Post office.

No. 1142 C.

Referred to the Public Department with advertence to No. 1455 W., dated 23rd June 1885.

(By Order.)

CHEPÂK, 4th July 1885.

(Signed) C. BOWEN, Major, R.E., Under Secretary to Govt., P.W.D.

From P. V. LUKE, Esq., Chief Superintendent, Government Telegraphs, Madras Division, to the Under Secretary to Government, Public Department, dated Madras, 14th August 1885, No. 2527.

I have the honor to return the plan and estimate for ventilating shafts to the sewers on the west and south of the new Telegraph office building.

2. In my opinion the scheme will have only a very partial effect in remedying the evil complained of, since the main sewer on the east face is the principal offender, and the shafts to be erected will only be connected with side drains.

3. During the last two days the smell from the main sewer has been most offensive in the afternoon as I can myself testify.

No. 1529, Public.

Transferred to the Public Works Department. A committee will be appointed to report whether, in the present state of things, residence on the premises is prejudicial to health, and what is likely to be the effect of the proposed ventilating shafts.

(By Order.)

OOTACAMUND, 27th August 1885.

(Signed) M. HAMMICK, Acting Under Secretary.

Read—the following G.O., dated 14th September 1885, No. 2151, Public :—

From P. V. LUKE, Esq., Chief Superintendent, Government Telegraphs, Madras Division, to the Chief Secretary to Government, dated 4th August 1885, No. 2339.

With reference to G.O., P.W.D., No. 1455 W., dated 23rd June, and Public Department, 2nd July 1885, Mis. No. 1502, I am desired by the Director-General of Telegraphs to ask the Madras Government to appoint a committee to examine the new Telegraph office, with the view of giving an opinion as to whether residence on the premises is prejudicial to health; and to request the matter may be considered, first, with reference to the present state of the evil and, secondly, after the ventilating shafts, for which the estimates are now with the Director-General, have been fitted.

Letter from the Surgeon-General, Madras, No. O.-393, dated 3rd September 1885.

Order—dated 14th September 1885, No. 2151, Public.

The *Consulting Architect* to Government.
The *Vice-President*, in charge of Public Works and Conservancy, *Madras Municipality*.
Dr. Porter.
„ Sibthorpe.
„ McNally.

The Government resolve to appoint a committee consisting of the officers noted in the margin, with the Sanitary Commissioner as President, to consider and report on the matter referred to in this letter.

(True Extract.)

(Signed) W. WILSON,
for Chief Secretary.

ORDER—dated 22nd September 1885, No. 2214 W., Public Works.

Communicated to the Consulting Architect to Government, who will resubmit for sanction the plan and estimate for providing exhaust ventilators to the sewer at the back of the Post and Telegraph offices, if the same be approved by the committee.

2. The harbour intercepting sewer is stated to be the principal contributor to the evils complained of; but in G.O., No. 2012 W., dated 31st August 1885, the Superintendent, Madras Harbour Works, was directed to submit proposals for replacing the present intercepting sewer by one of larger dimensions. In preparing plans and estimates for the new sewer, the Superintendent will consult the Consulting Architect to Government and the Executive Engineer to the Madras Municipality as to whether, in providing for ventilators, anything can be done to mitigate the nuisance reported in these papers.

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Consulting Architect to Government, with three enclosures.
„ Superintendent, Madras Harbour Works.
„ Public Department.
„ Chief Superintendent of Telegraphs, Madras Division.
„ Postmaster-General.

Exd. J. Henricus.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated September, 22nd.

Recd. *Encl.*

G.O., 22nd Sept. 1885, No. 2214 W.

SEPTEMBER.

New Post and Telegraph Offices, Madras

Orders on Proceedings in the Public Department appointing a committee to report whether residence on the premises is prejudicial to health owing to the nuisance arising from the sewer in the back of the buildings.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following letter from F. N. THOROWGOOD, Esq., M. INST. C.E., Superintendent, Madras Harbour Works, to the Secretary to Government, Public Works Department, dated Madras, 3rd September 1885, No. 28 W.:—

I have the honor to submit the following report of the progress on these works during the past month of August.

2. *North pier rubble base.*—During several days in August the ground swell stopped all work in the sea, and the trains of rubble stone for the base of the north pier had to be cancelled. Throughout the whole of the month the work of tipping rubble was much retarded by the broken and confused seas, caused by the blocks in the damaged piers, in close proximity to which the tipping boats have to work. This, however, is a contingency that has always been foreseen in carrying out the reconstruction. On the whole, more work has been done at the new rubble base during August than in July, a total of 7,217 tons of stone having been deposited, making a grand total of 67,937 tons deposited in the north pier since the work of reconstruction commenced.

3. *Recovering old blocks.*—The task of recovering or attempting to recover the old concrete blocks in the fallen walls is one that necessitates a smooth sea; and, although all the gearing is in readiness for the work, hitherto I have been unable to get any satisfactory result. An attempt was made at the north pier on the 31st, but after lying over the spot for some time the diving boats had to be removed, as occasionally a breaking wave rendered the position highly dangerous.

4. The apparatus prepared for this work consists of two very excellent new cargo boats purchased by me at Karikal, each capable of sustaining 20 tons. These are fastened together by four large teakwood beams which lie athwart the boats' gunwales and are secured by heavy iron straps and bolts passing down the outside of the sides to the keel. The boats have a space of 6 feet clear between them, and over this space is fixed a powerful crab winch with treble purchase gear and treble purchase blocks attached to the chain from the crab. The gear for laying hold of a block below water consists of a pair of wrought iron claws weighing 33 cwts., having a grip of 12′ 6″ wide; these are so arranged that they can be made to descend wide open over a block, and having reached the block, a diver frees four small catches, when on heaving up with the winch the block is caught hold of and carried up by the claws. All this works admirably in experiment, but the actual test of raising a block out of the ruins, I have not yet been able to apply.

5. *South pier rubble base.*—Work of tipping rubble at the south pier has been suspended during August, as the length of work set out for the purpose is much encumbered by old blocks from the damaged wall. These have to be blasted to pieces by divers before rubble can be thrown in, and diving work at this particular spot has been most seriously interrupted by the swell which has persistently rushed through the gap in the damaged work, sweeping divers off their legs. For the last few days the swell has abated and divers have been able to work.

6. *Block-making.*—The important work of making blocks went on satisfactorily throughout August up to the 29th, when it had to be stopped for want of room on the block-making platform. The second platform is being prepared as rapidly as possible, and when this is built block-making can be renewed. Of this second platform a length of 332 feet out of a total of 1,140 feet has been completed.

The number of blocks made during August has been 203, making the total of new blocks for the restored works now 688, representing a weight of about 20,000 tons of concrete.

7. *Pallávaram quarries.*—The quarries at Pallávaram have not yet been taxed very severely, and as yet not more than four trains daily have been received. During August, 11,859 tons of stone were sent down to Madras, of which 4,642 tons were used for block-making. The railway lines at the quarry have been extended and considerable blasting operations carried on.

8. The Mussulman contractor Kázim Alí Nakavy Sáhib has succeeded in obtaining for himself what I endeavoured to obtain for him, viz., two police constables to be on duty about the quarry, and a slight extension of magisterial power to the sarishtadar of the district. This is a great help in working the quarry, and tends materially to maintaining punctuality in loading the trains, by making the coolies more afraid to run away, as is their custom after having received an advance of pay.

9. *Titan crane for north pier.*—On the 7th August the S.S. *Harrogate* arrived with the first titan crane. It was originally hoped that this machine would have been ready in March last; but numerous causes have joined to delay its completion, and now it will not be possible to do much work with it before the storm season of the north-east monsoon.

10. This massive machine arrived in 325 different pieces and packages, and weighs 105 tons. The work of erection was commenced on 17th August, and cannot be wholly completed much under two months from that date. Owing to delay in shipping the second crane for depositing the wave-breaker blocks, I have had to build this titan with its overhanging girders pointing to the north, in which position it will advance, and begin work by depositing blocks on the foreshore of the existing north pier. The titan cranes for this work of reconstruction are capable of a greater number of movements than those now lying at the bottom of the sea, which were used for the first work.

11. *Stores received on the works.*—During August, in addition to the *Harrogate* with the titan above mentioned, there arrived the S.S. *Sutlej*, *Nuddea*, *Goorkha*, and *Goa*; these brought 960 tons of Portland cement, 8 sets of points and crossings which are much needed, and 708 sâl-wood sleepers from Gopálpur, besides other stores of various kinds. I was surprised to find a charge made of Rs. 2-8-0 a ton as import duty by the Madras Municipality for the sâl-wood sleepers. These sleepers do not leave the harbour limits and never are brought into the area of jurisdiction of the municipality; so after taking the opinion of the Government Solicitor on the subject of this charge, I am at present withholding payment pending a settlement of the question.

12. I am pleased to report that Mr. A. L. Pogson arrived here 20th August and assumed charge of the post of Assistant Superintendent on the 21st August.

Order—dated 14th September 1885, No. 2144 W., Public Works.

Recorded.

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintendent, Madras Harbour Works.
" Examiner, Public Works Accounts.
" Marine Department.
" Judicial Department for information, with advertence to paragraph 8.
" Financial (Municipal) Department for information, with advertence to paragraph 11, and with copy of note by the Honorable Member.

Exd. J. Henricus.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated September, 14th.

Recd. *Encl.*

G.O., 14th Sept. 1885, No. 2144 W.

SEPTEMBER.

Madras Harbour

Progress report of — for August 1885, recorded.

Financial Department.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

READ the following

Proceedings of the Madras Government, Public Works Department, dated 14th September 1885 No. 2144 W, recording Progress Report of Madras Harbour for August 1885.

Order thereon dated 3rd October 1885 No. 609 Fin. Mis.

Recorded.

2. The President of the Madras Municipality is requested to report what settlement of the question raised in para 11. is finally arrived at.

(True Extract)

(Signed) W. Wilson

for Chief Secretary.

To The President, Municipal Commrs, Madras.

(True Copy)

J. S. Reid

Ag: under Secretary.

Financial Department.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

READ the following

Letter from the President, Municipal Commission, Madras, dated 13th October 1885 No. 1151 R:-

I have the honor to acknowledge G.O. dated 3d October 1885 No. 609 Jr. (Jails) enquiring what settlement was finally arrived at regarding Mr. Thorowgood's refusal to pay fees on timber landed for the Harbour works.

2. The Collector of Madras has, I believe, referred the matter for the orders of Government.

3. I am surprised that this question has again arisen. It was decided by paragraph 2 of G.O. dated 15th December 1884 No. 2915 Financial. The limits of this Municipality are given in the notification published in the Fort St. George Gazette of 1st January 1879 and

and extend to the sea. It is true that section 119 of act I of 1884 provides that House Tax be not levied on the Harbour works, but in other respects the Municipal Act is in force within the Harbour limits up to the sea.

Rec'd 29/10/85.
Enl

Order thereon dated 23rd October 1885 No. 717 In. Inis

Recorded.

(True Extract)

J. O. Rees.

Ag: Under Secretary.

No. 2578 W.d/ Nov.r 3rd 1885

Copy to the Public Works Department

with copy of G.O. d/ 23rd October 1885 No. 609 In. (Inis)

Communicated to the

Supt. M.S.W. with the

advertisee to G.O. No. 21444

d/ 11th Septr. 1885

13

Nos 315. W. 26. 12. 84.
2144 W. 14. 9. 83.
1580 W. 7. 7. 83.
415 W. 21. 2. 83.
1974 Q. 2. 12. 84.

Supte. M.S.W. with copy of
Impt. G.O. No. 3157 W d/ 26. 12. 84

L.E.C. 3711.