Date taken out.	For what purpose.			Initials of clerk taking the paper or of attender.	Date returned.	Initials of attender.
	Department.	C. No.	Year.			

L. & M.
2,000—28-10-97.

Local & Munl. (1897) Department.

MISCELLANEOUS.

G.O., No. 2775 M.

DATED 11-12-97

[illegible] 2276 M – 16/12

INDEXED. [illegible]

DESPATCHED

[Despatch Abstract.]

Tanjore (Fort) Drainage Improvements

Forwarding with remarks, to the Munl: Council of Tanjore, the plans & estimates of a scheme for the drainage of the town; & requesting the Council to report as to how it proposes to find the required funds for carrying out the works & for meeting the annual expenditure wh: its execution would involve.

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.
Cuw		2314	h/98				

13

No. 22635
No 3448
21-11-95

Tanjore Drainage
Improvement

Office Note

Circulated to the Sanitary Commissioner & Supt of Sanitary Board for favour of remarks & early return

19.11.95

accompanying { 1 Vol of Plans

Plans retained in the Office

3/5-Ch. 642 of 97

3/3709 Mar 4 1897

(100—22-4-95.)

13

OFFICE OF SANITARY BOARD.

General Sanitation ~~Department~~ Branch,

OFFICE NOTE

No. 2315 S 13th December 1895.

Re the Tanjore Sewerage scheme.

Remodelling of existing drains. Taking into consideration the nature of the soil in which these drains will be placed, I think it might be considered by the Sanitary Engineer whether some economy could not be effected as regards the amount of concrete shown in the normal section. As to the remodelled section, I think the same possibility applies with more force.

[illegible] point

The area chosen. The Sanitary Engineer has been misinformed as to the locality chosen as suitable by me; it is the same as that now stated by him to be the more suitable of the two sites mentioned. I thus refer to it in my Inspection Notes embodied in G.O. No 1096 Mn dated 15th August 1894:- "Opposite the western ramparts, there is much typical ground at disposal. A carefully laid out farm in this direction [illegible] re a sanitary and financial success &c"

Pumping Arrangements. In the Notes just referred to, I suggested to the Municipality that the farm could be served by gravitation. This the Sanitary Engineer has apparently found impossible. Yet, I would fain hope, in consideration of the vast difference as to expenditure involved, that at least the matter be considered from this point of view, unless it be that the Sanitary Engineer has already satisfied himself as to its impossibility. The levels down to the river bank are not shown; but taking such as are exhibited for sections of the sewage farm, it does not seem quite out of the range of practicability - provided expenditure on the necessary work would not swamp the proposal ~~by reason of expenditure~~. Thus, it seems to me that it is feasible to run the outlet sewer through the elevated ground ~~and~~ to the farm and then find a level that would give a small yet sufficient fall - under the special circumstances. This gradient could apparently be improved by removing one or more feet of soil. Indeed, considering the

fact

fact that the Municipality yearly pays a certain amount for removing the old ramparts for filling up the ditch, it might be possible to divert this labour without incurring extra expenditure upon Municipal funds, so as to grade the ground according to requirements - using the spoil for the filling of the ditch on the western side. Some such scheme combined with moving the site lower down towards the river (if expense in simple regrading were too heavy) seems to me to offer some chance of the Municipality being spared the expense of pumping.

How is the water to get to the well?

The site of the overflow. It is a pity the overflow should be into the Fort ditch. By some extra expense - even if my gravitation proposal were not feasible - the overflow could be made to run by a pipe from the well (or near this point so as to economize piping) to the open at a sufficiently low level for flow towards the river.

The storage tank. No arrangement is shown here for effecting or regulating discharge. If the gravitation scheme were adopted, I would advise the use of flow to a storage tank provided with a Doulton's syphon, so as to make discharge automatic; so that the carriers being open and ready for the days work, the flow shall take place at regular intervals and in sufficient large flushes to aid in reaching distant parts. I understand that with even 18" difference in level the action would be efficient.

Manholes. No plans are shown & should have liked to have seen them.

Collecting well. This should, in the interests of the engine staff, be ventilated.

Under-drainage of the sewage farm area. I certainly cannot understand the prejudice which exists as to under-draining. The experience which is always quoted against the procedure in this Presidency is simply that of an agricultural effort at Saidapet! Yet, if the rationale of the action of under-draining be remembered, it will be seen, on consulting the original report, that it fulfilled all that was required: It relieved the land of the surplus moisture at the time of laying, and rendered the whole gradually pervious to air entrance and, in time, the drains ceased to

flow

flow, on account of this perviousness in relation to the total quantity of water possible on this particular site. But, the agriculturists aims had been duly secured. Nothing beyond the conception that under-drains are meant to carry away water will satisfy most critics in this Presidency, whereas this is certainly but one means to several ends - notably free aeration of the soil. We have the evidence on the other hand of Mr. Standish Lee and Surgeon General Cornish of the vast improvement secured on the part of DeMello's sewage farm under-drained by them. The white ant theory surely may be safely put aside in the case of a sewage farm actively engaged in passing sewage on to its land, as compared with a state of under-draining of a field dependent on meteorological conditions only. The Government of India in calling attention to my remarks as to the defective state of sewage farming in Tanjore and Madras, desired it to be remembered that these pioneer efforts should be models for the rest of the country, and should be put into correct condition accordingly. Now, without under-draining how is the sewage to be disposed of after soakage of the land by monsoons? In Tanjore and, up to date, in Madras this is answered simply by letting the flow anywhere and everywhere over the country for days on end, and till the contractor for the farm is condescendingly willing to allow the sewage to enter the land — upon which the prime intention is that all sewage should be employed. In short, are we to allow sewage farming in this Presidency merely to imply the use of sewage when convenient to contractors for irrigating grass, or are we to look to correctly conducted sewage farming for settling the sanitary difficulty as to safe disposal of sewage? If the Sanitary Engineer will guarantee that the land without under-draining can be used immediately after heavy rainfall, and during light rainfall for disposal of sewage without preparation by under-draining, the matter need not be considered.

But

But, practical experience in Madras with the advantage of a sandy soil shows that this is not feasible. It must be remembered in this connection that correct disposal of sewage before entry to the river is essential, with reference to the position of villages within a mile of Tanjore. I would therefore urge that under-draining be effected in this farm, and not only so but that the Board should state that it regards this effort at correct disposal as merely tentative, till the capabilities of the land are demonstrated, when it may be found necessary to suit requirements after rainfall by more closely under-draining a portion of the land, or by making a special sewage filter. To meet the demands of unavoidable overflow during storms, I would also advise that an intercepting bed of broken metal be interposed between the outlet and the point of discharge.

Para. [As regards cost of under-draining, I trust that some effort may be made to reduce it by local enquiry. On local enquiry in respect to another matter, I found that half tiles of 6" diameter could be turned out pr 6 ps. each and that by contract rates for quantities even this could be reduced. Tile drain making machines are not I believe very expensive, so that with local potters labour the outturn would not be ~~so~~ very costly. especially if it were possible to sell the machine afterwards to another municipality. As to the size of drains contemplated, I think much less elaborate arrangements would satisfy requirements. I believe it is customary to do no more than use two sizes of drains, although I quite understand the theory on which the various increasing sizes are estimated for. 2" common burnt clay tile drains are those chiefly employed for parallel drains leading into a suitable larger size of catch or Master drain, although experience on sewage farms shows that larger sizes are decidedly ~~feasible~~ preferable. I should like to see the collecting pipe dispensed with (in consideration of the smallness of the plot) and the sub soil pipes so arranged as to discharge

direct

direct upon an open ditch. It seems to me this could be managed. By doing so, expenditure would come more within the result gained by the Saidapet experiment where the total cost was Rs 30-8-- per acre. I think the main carriers would be sufficiently good, if simply provided with a lining of puddled clay instead of using tiles. This would considerably diminish the intended expenditure. No statement is given by the Sanitary Engineer as to the nature of the soil he is about to irrigate, nor of the depth at which he means to place his sub soil drains. Both items should, I think, have been mentioned for the information of the Board.

W G King

Surgeon Lieut-Col

Sanitary Commissioner

4 / S.C. No. 642 of 97

4 / 3209 M of 1897

The carriers allowed for in revised estimate are earthen lined with clay. They should be sufficient.

While the present scheme is put forward in reference to Sanitary Commissioner's views, the undersigned would have preferred to see all sewage carried to the pump well & thence distributed -

Sany. Engr. to Govt.

To

The Sanitary Commissioner
" President, Sanitary Board

6/5.C.No.64 20/8/97

6/3.209 M of 1897

(3)

The sewer in the Fort Ditch from the west towards the Pumping Station will in the altered scheme be carried direct to the farm, only the sewage from the centre & west will be pumped viz. 220 gallons (maximum) per minute & the lift will be only 29.20 feet.

(5) **Overflows** – The overflow must discharge into existing overflows which are in Fort Ditch and by these find its way to river by existing channels as at present. The whole storm water cannot be carried to the well, or the cost of the sewers would be enormously increased.

(6) **Storage Tank** – There seems no necessity for syphon action, the tanks can be discharged by opening a valve when required. If a syphon were supplied it would have to be regulated. Its advantage is not understood.

Collecting well – Will be

(4)

(8) **Underdrainage of farm** – Wh

I think this unnecessary, 2" drain have been allowed for, 100 feet apart, discharging into an open ditch. The soil is sandy. The whole of Tanjore District receives an enormous quantity of water which readily drains off. There does not seem any more necessity for under discharge of the sewage farm than for any irrigation area. The farm might be started without subsoil drains, these could be put in afterwards if necessary.

The cost of underdrainage is put down at (including open ditches for drains to discharge into) at Rs 2,457. The drains will be laid 100 feet apart parallel to the southern boundary of the farm. Half tiles are not suitable for such work, as they would soon get filled with earth from underneath. The

S. E./33. 500—30-10-95.

B/13

GOVERNMENT OF MADRAS,
Office of Sanitary Engineer to Govt.,
Fort St. George, 17 January 1896.

OFFICE NOTE
BY
THE SANITARY ENGINEER.

Tanjore Sewage Scheme.

The Sanitary Commissioner's note has been fully considered but it is impossible to meet his views in all respects.

Remodelling of existing drains.

The section shown is only a type at the place where the drains are raised to the maximum height. The sections are such as are required, because the drains are close along side the houses and the verandahs in many of the houses are over the drains. The sections will be modified as required [illegible] is however

is an engineering point.

The area chosen is apparently that intended by the Sanitary Commissioner.

No site unless below flood level will admit of the scheme being an entirely gravitation one, but a new estimate for this site has been made in which the sewage from the west side of the fort will pass by gravitation to the lowest portion of the farm though the remainder must still be pumped to the upper. This saves pumping and the estimate for the work will be, with subsoil drains 3 feet deep & 100 feet apart, only Rs 45,150 instead of Rs 68,400 for same site & the annual expenditure will compare as follows – (Govt. Grant 50%).

$\frac{68400}{2}$ at 5.96% = 2038 – altered design $\frac{45150}{2}$ at 5.96% = 134

Pumping . . . 3000 240

Farm 1000 1

[100—22-4-95.]

14

B/13

OFFICE OF SANITARY BOARD.

General Sanitation ~~Department.~~ Branch

OFFICE NOTE

No. 21. S. B. of 27th Jany 1896.

Ref: Sanitary Engineer's No – dated 17th Jan 96.

I have taken the liberty of marking the Sanitary Engineer's Note with red pencil, to enable the paras. referred to to be identified.

(Para 1) My suggestion was made with regard to Economy – not as to the Engineering requirements of the case.

(Para 3 & 4) The Sanitary Engineer has now shown that the sewage of the West section of the scheme can reach the selected land by gravitation on the West Farm. I would suggest for consideration that the East portion of the sewage might be successfully dealt with also by gravitation by receiving it on the East farm area upon a filter. If 3 feet of filtering medium were allowed, the filter would be fairly safe from the maximum flood level (134.74) and have complete safety from ordinary flood levels (131.80). This would do away with the expense of pumping entirely, which is an expenditure the that will be looked at unfavorably by the Municipal Council. Thus, taking the East main sewer invert at 135.42 a fall of about 1-1000 could be given to the top of the filter. A fall which though undesirably small is still feasible. The area of the West Farm could then be proportionately contracted

(Para 5) I did not suggest that the *total* storm water should be arranged for! I presume that the Sanitary Engineer has, at his contemplated overflow, excluded, as would be usual, all storm water in the interests of the farm and carries from this point practically only sewage. What I ask is that whatever proportion his open drains are really intended to convey rainfall — which is not however stated by him — should be got rid of not at the edge of the ditch, but *after passing over the ditch*, as it represents diluted sewage. In the case of the West section, the suggested overflow would therefore be at or near the site of the storage tank of the *revised* gravitation plan. Whether the sewage of the East section be pumped or not to the West Farm, the overflow of the East section would also be

133.42 in the East Farm.

(Para 6) Uniform discharge of definite amounts upon plots of definite capacity could be secured by the use of the syphon, and, in the case of the gravitation scheme, would act night and day without the presence of man to open valves. The arrangement would be almost as cheap as valves.

(Para 8) *Under-drainage of Farms.* The Sanitary Engineer meets my several arguments, based on sanitary grounds well acknowledged in the present day, with the statements "There does not seem any more necessity for under discharge of the sewage than ~~th~~ for any irrigation area" and that "the whole of the Tanjore District receives an enormous quantity of water which readily drains off." The Sanitary Engineer has apparently ignored the simple fact that the judge of how much water an *irrigation* area shall have per diem, is the ryot. The moment he finds no more moisture is required for successful cultivation, he shuts up his supply channel. If sewage farms could be managed on the same simple principle, there would be no necessity for this scheme at all: but unfortunately, whether the soil is moist with rain or not sewage must be dealt with, ~~and~~ People who think otherwise picture India as a land of sunshine, but it is also a land of heavy rain.

No untreated sewage ought to pass out of a sewage farm. To effect this it is hoped by the use of underdrainage to obtain a rapidity of removal of moisture that shall enable a plot to be utilized for sewage disposal notwithstanding its soakage by monsoon rain, or at least that can be utilized with greater rapidity and consequent better prevention of escape of untreated sewage into the river Vadavar, which is used for drinking purposes. Secondly, the result of underdrainage would be to improve the aeration of the soil, and therefore increase the rapidity and completeness of the biological action of microbes engaged in nitrification — thus, incidentally securing high fertility and a highly purified effluent. That this is the least effort that can be made is evident, from the question of the necessity of a new farm having arisen at all. (Vide first para in the Note on the original scheme by the Sanitary Engineer)

The

The Sanitary Engineer's suggestion of waiting for experience, which which has already been worked out in a most insanitary manner in this very town, seems to me most undesirable. In my opinion, if this farm is to fulfil sanitary requirements — and this I believe is the object of the farm — (and not simply placing at the disposal of the municipality upon a new site a certain amount of fluid for irrigation) the underdraining ought to be regarded as the preliminary step as to experience, and then, as I have suggested, if this fails to completely deal with the sewage when the ground is soaked after rainfall, sewage filters should be employed as an additional aid, so as to afford the required assistance till it is again wanted on the land by the cultivator.

If this scheme be intended to be worked in a system that does not thus aim at preventing untreated sewage reaching the Vadavar, I consider it would represent useless expenditure, and can see no reason why the present faulty system in use should not be continued in the Fort Ditch, this being exactly of the nature now advised by the Sanitary Engineer and costing nothing.

(Para x)

19

(Para x) I cannot understand how the Sanitary Engineer has come to the conclusion. I suggested half tiles &c for underdraining: the context ought to show that I simply quoted the price of half tiles as giving an idea of what unglazed full tiles might cost in Tanjore if enquiry were made locally. Further, I have no wish that 2" tile drains should be proposed. On the opposite, I think not less than three inch tiles should be employed: but I pointed to custom as sanctioning one size for the parallel drains and no larger for the master drains, in the hope that further economy may be secured in the several larger sizes contemplated by the Sanitary Engineer.

I note in this connection that the estimate for under draining has increased in the revised plan, not decreased.

I consider that the under-drains should be at 4' depth, if the outlet will permit, and not more than 35' apart. The distance contemplated in the scheme of 100' apart would be of little utility.

W. G. King.
Surgn. Lt. Col.
Sanitary Commissioner

with plans &c.

(B)

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

Read—the following paper :—

From M.R.Ry. K. S. SRINIVASA PILLAY, Avargal, Chairman, Municipal Council, Tanjore, to the Chief Secretary to Government (through the Divisional Officer, Tanjore), dated 19th June 1894, No. 1877.

I have the honour to forward herewith an extract from the proceedings of the municipal council, dated 16th May 1894, together with the inspection notes of the Sanitary Commissioner and the council's remarks thereon.

Enclosures.

Inspection Notes of the Sanitary Commissioner, Madras.

TANJORE DISTRICT.

Tanjore Municipality.

Inspected 6th to 11th December 1893.

		Males.	Females.	Total.
Population as per census of	1881	26,272	28,473	54,745
	1891	25,945	28,445	54,390

The suggestion will be carried out when funds are available.	*Dwellings.*—In the "Big Fort" the houses are particularly crowded; indeed, notwithstanding its small area, the greater proportion of the inhabitants live here. The streets are exceedingly narrow, and the resulting air stagnation is rendered worse by the propinquity of the Fort walls. The throwing down of the Fort wall, and the widening of the streets by demolition of certain of the buildings is a matter that should be attended to year by year, as funds are available.
The work will be done when funds are available.	At Kamatchiyamman Covil, Peria Agraharam, by removal of a portion of a single house, the perflation of the buildings in the neighbourhood could be much improved, as this blocks the way to the rampart.
Steps will be taken soon to remedy all such evils.	2. *Offensive trades, &c.*—The licensing of cattle-yards is not exercised with sufficient care. I found in two cases ten head of cattle in unfit premises. No license could be produced. Cattle are apparently retained in private premises in large numbers.
In the opinion of the council it is not easy to carry out the suggestion at present.	The making of a general cattle-shed near the new space acquired by the throwing down of the rampart would be of much utility, if the people could be induced to utilize them.
Will be attended to.	3. *Roads.*—The main streets are in fair repair, but the side streets are neglected.

4. *Surface drainage.*—The chief urgent defects of surface drainage will be referred to under water-supply. There are, however, two areas that seem to demand special care, namely, Buffalo street and Silk-weavers' street. The improvement of these areas ought not to be difficult whether the land be municipal or private.

Will be attended to.

5. As soon as the new water-supply is introduced, I would advise the municipality to abolish *in toto* the tanks within the Fort ditch. The influence of these upon the sub-soil cannot fail to be injurious. Thus, I find that wells near the western ditch, when this is filled with water, show a water level of 9·5 feet which, with the lessening of the ditch water, sinks to 40 feet ultimately. This matter, I am aware, cannot be attended to in a day. As funds are at disposal, the work which the council are now very advisedly pursuing of throwing down the rampart wall should be continued, and as part of this work the Fort ditch should be filled in, *so as to include the portion occupied by the tanks* up to the level of the surrounding area.

The subject will be considered when the water-works are completed.

Vide remarks against paragraph 1.

6. The drainage channel near the Sanniasi tank is in a very filthy condition. The bottom of the drain should be improved, and, if necessary, should have a layer of either concrete or brick to maintain its gradient. The stench is much complained of, and I have no doubt it is a source of grievous nuisance to the neighbourhood.

Will be attended to when funds are available.

7. *Sewerage.*—A considerable part of Tanjore possesses small side drains, made in the days of the last Rajah, for receipt of sewage. These have lately been cement-lined, and have had their shape improved. They are sufficiently impervious to carry off a fair amount of sewage. This is directed to a sewage farm, which is formed in the old Fort ditch. I understand that the profit from this undertaking is considerable, but it is probable more can be secured by judicious management. On the expiry of the present contract, I would advise the municipality not to allow the disposal of the sewage to be in the hands of a contractor. They might well arrange that the produce be contracted for, but the actual work of cultivation should be at their own direction. The object of a sewage farm is not simply to use a certain amount of the sewage for cultivation purposes, but to subject the *whole* to the purifying influence of vegetation and soil, so as to prevent insanitary results elsewhere. All arrangements should, therefore, be made subservient to these conditions. Thus, if the land at present at disposal cannot absorb the total sewage brought to it, more land should be secured for the purpose. Thus, in the eastern portion of the farm, it is evident that very little of the sewage is employed during the cold weather months. In the western portion more is utilized steadily; but even here overflow is allowed to occur. Whilst, undoubtedly, the council is to be congratulated in being in advance of their mofussil towns as to sewage disposal, the site they have selected for the process cannot be said to be suitable, namely, the Fort

Will be attended to.

ditch, which surrounds and is below the level of the town. Luckily the farms are on the correct sides as to probable flow of sub-soil water, otherwise marked effect upon the health of the inhabitants might have resulted. The town is admirably situated for sewage farming, as there is a steady slope from it towards the surrounding country, which is under cultivation. If, therefore, the council were to suspend farming in the ditch, they could easily run their sewage by gravitation to the large cultivable areas in the vicinity. Opposite the western ramparts there is much typical ground at disposal. A carefully laid-out farm in this direction would prove a sanitary and financial success. With the grass raised the municipality might supply their own cattle, which would be a cheaper method than arranging for conservancy on contract as at present.

Will be attended to.

8. *Drains in the Big Fort.*—No system of flushing is in force. This is absolutely necessary, and I should think could be arranged for either by pumping water to a flushing reservoir from the ditch near the head of the drains in the Muhammadan quarter close to the rampart, or by pumping from wells or Sivagunga cisterns direct into drains, or, again, by filling iron tank carts and flushing by discharge thence.

Will be considered after water-works are completed.

9. The main drains are of the evil square pattern. In consultation with an Engineer, pending the carrying out of a full drainage scheme and as a temporary measure, they should be altered by filling with concrete or otherwise to the egg-shape. They are almost universally built over. This should be remedied by insisting upon removal as far as legally feasible.

Will be attended to when funds are available.

10. *Mallanappa lane.*—This is a narrow lane having on both sides drains, whilst there are houses only on one side. More room would be obtained by abolishing one drain, and forming a junction of the two drains at the head of the lane.

Will be attended to shortly.

11. *The Eastern sewage outlet*—was silted up at the time of my inspection, and much sewage was thus diverted from the drain and allowed to soak in the vicinity.

Silt has been removed since.

12. *Silk-weavers' street.*—This thickly inhabited locality is in great part drained; but the outlet for the sewage has apparently not been considered. By a very little management and expenditure, I think nearly the whole of this area could be drained into the neighbouring fields, and the council could here start by purchase a new sewage farm that would secure a good revenue.

Will be attended to when funds are available.

13. *Water-supply.*—In consideration of the fact that the Sanitary Engineer's department is at present engaged in giving Tanjore a supply of water, I do not propose to make suggestions for improvement of that now existing; but shall confine myself to pointing out petty, yet urgently required, reforms.

14. *Sivapa tank.*—The catchment area of this rain-fed tank includes certain portions of road that, being subject to defilement, should be

cut off by suitably directed drains. In view of the introduction of the water-works, the estimate for famine works on account of deepening this and the Sivagunga tank should be struck off as unsuitable. On completion of the water-works, the municipality would do well to utilize the water from this source for public bathing platforms, and erect a special "Dhobiekana."	Suggestion accepted.
15. Near the Neilgherry gardens the drainage from an open space latrine must, during rainfall, pass into the Fort ditch, which at this point is arranged for clothes-washing. A catch drain should be made here, with the object of diverting the sewage. [The Neilgherry gardens and neighbourhood, I may here remark in parenthesis, in view of the extent of wild shrub growth visible, are suffering from neglect.]	Suggestion accepted. Will be attended to.
16. *Webster Tank.*—This is liable to contamination by washings from the neighbouring road.	Will be attended to.
17. *Bathing Ghât (formed of southern part of ditch).*—Here there were on one side of the tank in a manner to secure entrance of washings from their surface huge heaps of household rubbish.	Steps will be taken to remedy the defects.
18. *South Main Street.*—The Sivagunga conduit is crossed by the main drain, which is permeable. As it happens, by the displacement of a stone percolation through this drain into the Sivagunga conduit is facilitated directly, and indirectly by the decreased rate of flow induced by the obstruction. The house-holder at this site complained of the nuisance caused.	Will shortly be repaired.
19. *Samandan Tank.*—This is supposed to be used only for bathing purposes; but the people residing in the neighbourhood declared it to be excellent drinking water. The municipality should erect a notice board here, stating that the use of this water for drinking purposes is inadvisable.	A notice board will be put up accordingly.
20. *Fifth Ward Well.*—This well is close to a Muhammadan graveyard said to be still in use, and is under pressure from the Samandan tank as shown by the high-water level—3 feet. The basement of the well is imperfect and there is a gap in the parapet wall. The earliest possible opportunity should be taken to permanently close this source of supply.	Will be attended to.
21. *Chuckara kolam.*—This tank is supplied by drainage from the surrounding area, which is thickly inhabited by cowherds and is exceptionally filthy. The tank has no bund in the direction of the village, and each year the streets are flooded to the loss and discomfort of the inhabitants. As soon as the water-supply is received, this tank should be filled in permanently. Even if with the new supply at hand the inhabitants were inclined to confine themselves to its use, the water of this tank would still be a standing danger to the cattle, in that on the importation of an epizootic it would be readily contaminated both by direct contact and by receipt of surface drainage.	Will be attended to shortly.

A notice board will be put up.	22. *Silk-weavers' Street tank.*—On the bank of the tank is an "open space" latrine, which drains direct into it. The use of this water should be forbidden for any purpose whatsoever.
Will be attended to.	23. *6th Ward.*—Here I found a new well being sunk of the type that ought not to be seen in a modern municipality, namely, a simple brick ring for the steining. Sub-soil wells should be rendered impervious down to the water level, and should be provided with impervious basements and drains. It may, of course, be still intended to build the latter, but obviously the precaution as to an impervious steining had not been followed. It would be advisable that the council procure standard plans for wells from the Sanitary Board.
The work will be shortly done.	24. *Sanniasi Kolam.*—This tank is used, amongst other matters, for the private slaughter-house near the spot. It receives the surface drainage from the neighbouring houses. This could be easily diverted by a catch drain into the open ditch in the vicinity.
Notice be given to the Receiver and Manager of the Tanjore Palace Estate to keep the tank in proper repair.	25. Near the northern rampart is a collection of very foul sewage water, being in the most part unused sewage from the neighbouring farm. It is about 250 yards square. This overflows on the accession of rain into the Vanavar near the Raj Gori Ghât, and at a short distance above the chief drinking ghât of the town! The question of disposal of sewage with which this matter is connected has already been discussed. This tank should be abolished.
Will be attended to.	26. *Uppoo kolam.*—This forms the chief supply of the 2nd ward, in which I am informed cholera generally first appears. The vicinity of the channel to this tank is the great easement ground of the neighbourhood; persons were found in the act. Here is also the washing ghât. Houses are built on the banks of the tank, and their drainage reaches it readily. Rubbish from dwellings was also found on the banks, and in one corner a ruined house forming a convenient and much used latrine for the locality drained direct into it. All these matters are remediable by the exercise of a small amount of vigilance by the sanitary staff and police.
Will be attended to.	27. In the little fort there is a latrine having a well in the interior. This is *apparently* connected with a channel from the Sivaganga tank. It should be closed, and, if possible, filled in.
The municipal overseer is directed to suggest schemes to remedy the defects complained of by the Sanitary Commissioner.	28. In the Karuthattangudi division, the chief drinking water ghat of the town is liable to be contaminated by drainage direct from "open space" latrines. All along the banks of the Vanavar near this important spot feculent matter was to be found freely. These latrines should be abolished if it be found impossible by altering the ground gradient or by the cutting of a catch drain to prevent surface drainage flowing in the direction of the river.
The council has already sanctioned the construction of 12 more latrines with iron corrugated sheets.	29. *Conservancy.*—There are 14 male and 14 female latrines for the total population of 54,390. This is far too little. In the 5th and 6th wards, there are no latrines.

Certain parts of the ramparts I inspected were strewn with fœcal matter; for long distances along the banks of the Vennár and in every convenient corner the same condition was seen. To my surprise I found the surroundings of one of the principal temples in the town to be simply covered with human fœces. One would have thought that, failing sanitary scruples, religious instinct ought to prevent defilement in such places.	Steps have already been taken.
30. *Rubbish conservancy.*—This is also very imperfectly carried out, the backyards of inhabitants being little better than is usually found in an agricultural village.	Will be attended to.
31. Both rubbish and night-soil are removed by a contractor, who has no difficulty in getting sales from ryots, who are sufficiently eager to obtain the material as to bring their carts daily to the town till they receive the quantity contracted for. The result of this is that no fixed depôts exist. This is, I think, a mistake, as exhibited by the finding of heaps of rubbish evidently deposited by the contractor at certain spots. He should be directed to effect the sale at depôts appointed by the municipality.	
32. *Private scavengering.*—As might be imagined from the evidently small regard to provisions of the Town Nuisance Act, this system is not in favour. Thus, of a total of 9,738 houses, only 642 are attended to. I trust the councillors will see the desirability of each doing his utmost within his own ward to make suitable arrangements in this matter. Success can only be achieved under existing law by the exercise of persuasion, and this certainly should come from the councillors and not be necessarily looked for from the subordinate paid staff of the municipality.	Will be attended to.
33. *Slaughter-house for the Fort.*—This is below the ramparts. It is too near the sewage farm and the unremoved collection of surplus sewage especially which stagnates near here. There is also an "open space" latrine within 25 yards of it. Slaughter-houses should be in localities where cleanly air is provided, otherwise the decomposition of meat is accelerated, and the products of the process even after cooking are liable to prove poisonous to those who partake of it. Further, the early decomposition of meat exposed to foul air means frequent monetary loss. As a matter of sentiment also, the idea of the proximity of a latrine and a sewage farm to a slaughter-house is not "nice." The other slaughter-house is exceedingly faulty as to building; but as I am informed that a plan for rebuilding has been sanctioned, I need not enter into the matter.	Will be attended to when funds are available.
34. *Markets.*—There was apparent want of supervision on my inspection. The sellers of fish were found squatted on the pavement obstructing the passage, instead of being in their stalls. The type of accommodation for butchers and fish mongers was such as usually found in Madras markets. For fish mongers the use of stone slabs should be insisted upon. Dirty boards and bamboo mats, &c., which are	

When funds are available this subject will be attended to.	used here, must conduce to decomposition. The butchers should be provided with a clean block each, and slabs also on which to lay casually their meat instead of upon old boxes and the like. Iron hooks should be used for exposure for sale. Cuddapah slabs polished are cheap and might be utilized here. The cement floor is broken and in a very bad state of repair; it would be advisable to get granite blocks from Trichinopoly and use cement pointing at the joints.
Will be attended to when funds are available.	35. In one respect the market is well-off. There is an elevated iron tank into which water is pumped from a well; but there seems most unnecessary stinginess in meting out the supply. The utility of this water system, which seems to have been put up regardless of expense, might be very greatly improved, by running pipes along the whole of the stalls and placing taps at close intervals. Arrangements should be made to bring the water to a position in which flushing the drains could be easily accomplished. It is a waste of labour when having a supply of water under pressure, that the attendants should have to go to taps and flush the drains by buckets. By carrying the pipe a little further on, the drain near the bandy-stand might also have the benefit of being flushed from this source.
Will be attended to.	36. *Victoria Jubilee Market.*—This locality seems much neglected, the whole site being very dirty and undrained. The same may be said of the bandy-stand which is attached to it.
Will be attended to when funds are available.	37. *Vegetable Market.*—This is an important market, and should therefore receive proportionate care at the hands of the municipality. The floors are of uneven and worn brick in the centre, and of gravel at the sides. So far as I can judge, I should say that there has been a very great waste of masonry in the making of the pillars. These were filthy. They should be cement plastered up to 6′ in height, and be painted with white silicate paint. I would advise that the gravel portion be filled with concrete and be cement plastered, and that cement plastering be applied throughout the existing brick portion. Water from the well should be lifted to an elevated tank, as in the case of the other market, and be distributed so to allow of free flushing. This ought to be capable of arrangement on a cheaper scale than effected in that instance.
Will be attended to.	There are two "open space" latrines in too close proximity to this market. One of these is further objectionable in having one of its sides formed of the walls of an inhabited dwelling. Both these should be abolished. At as great a distance as possible, with reference to convenience, from the market a corrugated iron latrine should be erected in lieu of those abolished. This should be worked carefully on the dry-earth system, and have a male and female toty in constant attendance, so as to leave no doubt about the maintenance of cleanliness.
	38. *Burial and burning ground.*
	39. *Raja Gori.*—This is an important burning and burial ground, and should have a

covered shed provided for cremation during the wet weather. This being above the chief drinking ghât of the Vennár, care should be taken to prevent the burial party washing in the river. It is said this action is usually restricted to the bearers of the dead, the remainder of the party using the neighbouring tank. I would advise that a peon be stationed at this burial ground to check deaths, and that section 242 be carried into force as regards licensing the vettiyans.

The subject will be considered when funds are available.

40. *Vaccination.*—Vaccination is carried on by scarification with the lancet, glycerine paste, not exceeding four days, being employed for out-door work, but fresh lymph being used at the depôt. In inspecting the records of Second-class Vaccinator T. N. Natasam Pillai, I found he had registered a complete failure as having six vesicles! He should be fined.

The vaccinator is fined.

41. The following are the results secured according to the register:—

—	Animal lymph, fresh.			Glycerine paste.		
	Successful.	Unsuccessful.	Unknown.	Successful.	Unsuccessful.	Unknown.
Primary vaccination	1,394	7	2	681	38	..
Re-vaccination	23	12	..	..	5	..
Percentage of successful vaccination	98·5	..	..	94	..	..

42. *Registration.*—This is conducted on a system that cannot produce correct results. It is not insisted upon that the people should attend the office for registration, but the registrars perambulate the streets and thus attempt to secure their information. I think it advisable that the method should be put a stop to, and that attendance at the office of local registrars for each locality should be insisted upon. Over the houses of each registrar should be not only his name and vocation, but also a painted board quoting the section of the Act applicable and threatening prosecution when failure to register has not been carried out. Similar boards at police stations might aid matters:—

Resolved that the suggestion be adopted.

(Signed) K. S. SRINIVASEN,
Chairman.

Years.	Births registered during the year: ratio per mille of the estimated population.	Deaths from all causes: ratio per mille of the estimated population.	Percentage of deaths from						Ratio of deaths of infants under one year of age per mille of those born in the preceding year.	Ratio of total deaths of children under 5 years of age per mille of the population of that age.
			Cholera.	Small-pox.	Fevers.	Dysentery and diarrhœa.	Injuries.	Other causes.		
1891	26·9	33·9	14·0	2·2	18·3	24·6	0·4	40·5	193·9	63·6
1892	27·9	23·1	..	1·7	23·0	29·0	0·7	45·6	195·4	53·7
1893	26·1	30·2	34·1	1·9	16·1	21·0	0·4	26·5	226 7	68·3

NOTE.—The last census showed a decrease in this town; but the chances are this decrease of population has not continued. Hence the birth registration is open to doubt.

3d Revision

Don't Print

Office Note

Tanjore Drainage

In circulating the plans and estimates in regard to these works the Sanitary Commissioner will, no doubt, be disappointed to find that the scheme, as now sent forward, bears close resemblance to the scheme first proposed, except that it is slightly less in cost notwithstanding that the Sanitary Commissioner's suggestions as to carrying the storm water across the ditch, the underdraining of the proposed sewage farm with drains 35 feet apart and other items such as a syphon discharge from the tanks, have been included.

2. In the second scheme forwarded the undersigned proposed to let the drainage from the West flow onto the lower portion of the sewage farm. The Sanitary Commissioner then suggested that the drainage from the East should similarly be led by gravitation on to land to the East of the Fort if this land were below flood level, that the sewage should be

disposed of on sewage filters.

There was no doubt that, if a hole gravitation scheme could be adopted, t would save cost and I again visited anjore, kept a surveyor there for a week, nd I carefully went over all available land. esigns were begun in view to a gravitation cheme but as they advanced it was found that, for many reasons, the plan was impracticable, if not, impossible. And I believe that the scheme now sent in is the best that can be done for Tanjore and is the scheme that ught to be adopted.

4. There is no land to the West but what is much flooded annually and the adoption of sewage filters, is out of the question on account of cost; they would have had to filter 133200 gallons per day and not less than 1⅓ acres at 100,000 gallons per acre per diem would have been required. The cost of these filters alone would have been at leat Rs 30,000.

5 It was therefore advisable to take all sewage to the West which is the proper site for the farm.

6. This being so it became a question whether it was worthwhile to car the sewage from West street alone by grav tation to the lower portion of the farm;, to d so would have required a long undergroun drain with storm overflow and, as only 92 gallons per minute at a maximum would be carried, it is best from an engineering point of view to carry this to the pump well with the remainder of the sewage. The quantity is about 1/5th of the total quantity to be pumped and once pumps are provided for ~~and~~ lifting sewage, ~~the~~ the extra expense involved is comparatively little while all the sewage will be delivered into ~~the~~ on storage tank and discharged as required It was also found what was not unfortunately reported before that a ~~a~~ portion of the drains in North Main Street discharge their sewage at Ranivocal Street midwa between West street and the site of the pumping station which has been altere and brought further to the west makin the pumping main less in length & the lift less than in the original scheme.

From the information gained by this new survey levels, & orough inspection it has been deemed ivisable to alter some details but the cheme itself is practically described my first note.

It is trusted this scheme will e accepted. Every consideration has been iven to the Sanitary Commissioners views ith the above result.

The cost of the scheme to the ouncil, supposing that Government rant one half the cost, will be

$\frac{61000}{2}$ @ 5.96% = 1818

Pumping charges = 3000

Working Farm = 1000

5818

he farm (32 acres) eventually ought to yield time about 2509020 lbs of grass per annum nd this valued at 8 as per 100 lbs = Rs12500- his is probably too high an estimate of receipts Tanjore but even half this seems would ay for the up keep of the scheme - and it

is

is not unreasonable to suppose it may be realised.

Sany Engineer to Govt

11.5.96

To the S.C. with plans & estimates
To the Prest
S.B.

B

8
C.No. 642987

8
3709 M of 97

[200—18-11-95.]

23

OFFICE OF SANITARY BOARD.

General Sanitation ~~Department~~ Branch.

OFFICE NOTE.

No. 216 dated 16-5 1896.
S.B.

Tanjore Drainage - 3rd Estimate.

As to the Sanitary Engineer's para 1 I am certainly very disappointed to find that it is necessary to saddle one of the first Municipalities in which Sewage Farming is to be applied on a decent system, with the cost of pumping its sewage. That it would be possible to re-arrange the system as suggested by me for gravitation has now been shown by the Sanitary Engineer, and the whole question of its applicability depends upon the supposed cost of the sewage filter which in the latter event would be necessary. To find that to filter 133,000 gallons of sewage in this country the filters would cost Rs 30,000 is, in my opinion, a conclusion that should not be accepted without further enquiry

Don't Print

and must, I think, imply that the estimate has been made on certain pre-conceived principles that might have been *inapplicable locally*. A filter made on the principle used by me at Vizagapatam would, at the same rates, have cost Rs 650 or, say, allowing for improvements and double filters Rs 2000. Even were the cost Rs 3,000 and the result were the *permanent* saving by the Municipality of the cost of pumping, I presume the bargain would not be so bad. But, setting aside the nature of the filters which the Sanitary Engineer has elected to use and finds amounts to so great a cost, it must be remembered that, in accepting 100,000 gallons per acre at the rate of filtration, a very high standard of purity is aimed at on one set of filter beds, without other aid than that of filtration. But, when the Sanitary Engineer is confronted with cost of this description, there was available to him the treatment by preliminary straining and erated filters ("rough" and "final ilters"); the former being worked

at the rate of 12,000 gallons per yard up to 40,000, and the latter from 582 up to 1000 gallons. So that with sewage of the probable Tanjore type, if it arrived at the "strainers" screened, it would have been possible to have arranged for use of ·0495[×] acre, or taking the cost at Rs 30,000, the total cost would have amounted to Rs 1113 even at the heavy estimate given by the Sanitary Engineer, and even doubled would have amounted to only Rs 2,226.

[×] ·0023 acre for strainers and ·0472 for final filters.

2. I do not pass the above remarks with the object of opposing the Sanitary Engineer's present scheme; but, in reference to future schemes, *I do not allow* that this Presidency *cannot* apply sewage filtration, which has been found within the last few years to fill so useful a role in Europe and America otherwise than at a prohibitive cost.

3. The Sanitary Engineer has arrived at his conclusions after giving the whole subject [illegible]

bearings, and so long as conclusions are thus arrived at, and not by mere assertions of opinion, my responsibility as one of the members of the Board ceases.

4. The scheme as it at present stands is materially improved, and I approve of it. On one point, however, I should like to see an alteration if it will not materially affect the Sanitary Engineer's Estimate. In discussing the merits of his first scheme for sub soil drains, I objected to the use of the graded sizes, and pointed to the usual practice of using two sizes only; but, in referring to the frequent use of 2" pipes for field draining, I wished it to be distinctly understood I preferred the use of a larger size - 3" at least for Sewage Farms, and, as this will be the Boards first experience of under-draining, it is well it should not be saddled with difficulties. But, if this is objected to by either Member or President

---

I do not want to see this paper back for discussion.

Surg. Lieut Col
Sanitary Commissioner

To,

The President
Sanitary Board

Sanitary Current.

Recd 18.5.96

Enc 2. (1 draft & 1 roll of plans)

B/

9/5.C.2064 2/8/97

9/3709 M of 1897

39

Sanitary Department. 18

Office Note from the Sanitary Commissioner, No. 216/S.B., dated 16th May 1896.

No. 925. d/ 2° June 1896

These papers refer to some scheme previously prepared, and without the correspondence on that scheme I can give no satisfactory opinion. As far as I can judge from the papers before me I agree with the Sanitary Commissioner that pumping should, if possible, be avoided and that Rupees 30,000 for a filter seems excessive, and that some cheaper method of filtration could be devised. The annual cost of pumping is Rs. 3,000 and that capitalised at 4 per cent represents Rs. 75,000; ~~and~~ so that even if the filters cost Rs. 30,000 it would still be advisable to use them.

2. When I receive the papers on the previous scheme, I will be able to see what are the Sanitary Commissioner's objections to 2" pipes.

Print

D. W. Campbell Colonel, R.E.
President, Sanitary Board.

To The Sanitary ~~Engineer to Govt.~~ Commissioner
with papers and 1 roll of plans.

COMMISSIONER
Register No. 174-5/5
4 - JUN. 96
GOVERNMENT OF MADRAS

10
5.C.No.642797

10
R.709 May 1897

40

43. *Sanitary Administration.*—The number of prosecutions by the police under the Town Nuisances Act, although applied for by me, has not been received up to date. Judging by the state of the town, these must have been few and far between.

(Signed) W. G. KING, Surgn.-Maj.,
Ag. Sany. Commr., Madras.

Fort St. George,
14*th March* 1894.

Extract from the Proceedings of the Municipal Council, Tanjore, at a meeting held at 5 p.m. on Wednesday, the 16th May 1894, at the Municipal office, Tanjore.

* * * * *

Resolution No. II.

Read inspection notes of the Sanitary Commissioner on Tanjore Municipality.

Passed resolutions on the inspection notes.

(Signed) K. S. SRINIVASEN,
Chairman.

No. 619.

Forwarded.

Vallam,
28*th June* 1894.

(Signed) H. M. WINTERBOTHAM,
Collector.

Order—dated 15th August 1894, No. 1096 M., Local and Municipal.

Recorded with the following remarks:—

(1) The action which the Municipal Council proposes to take on the suggestions made by Dr. King in paragraph 31 and in the concluding portion of paragraph 39 of the inspection notes has not been reported. The omission should now be supplied.

(2) The inspection notes should not have been delayed so long in the municipal office.

(3) The Sanitary Commissioner will be requested to report on his next inspection of the town the extent to which the defects pointed out in the present note have been remedied.

Print

(True Extract.)

J. F. PRICE,
Chief Secretary.

To the Chairman, Municipal Council, Tanjore.
„ Collector of Tanjore.
„ Sanitary Commissioner.
Editors' Table.

Exd. Shaik Kareem.

OFFICE OF SANITARY COMMISSIONER WITH THE GOVERNMENT OF MADRAS
2051
12 SEP. 94

41

Govt. of {1894} Madras.

LOCAL AND MUNICIPAL.

SANITARY ENGINEER TO THE GOVERNMENT OF MADRAS
746
8 MAR. 95

B

Issued

Recd.

Encl.

G.O., 15th Aug. 1894, No. 1096 M.

2-6
OW 28/5/95

AUGUST.

Inspection Notes.

Recording, with remarks, Sanitary Commissioner's — of the Tanjore Municipality.

Tanjore Municipal Office,
15th December 1894

No. 3837

44

From,
M. R. Ry K. S. Srinivasa Pillay avl
CHAIRMAN,
Municipal Council,
TANJORE.

To,

The Sanitary Commissioner
Madras.

B

Sir,

Yourletter No. 1969, dated 9th November 94.

Your Telegram Dt. 14-12-94.

× To be kindly returned

Referring to your correspondence noted in the margin, I have the honor to state that nothing has been done in the matter upto now beyond preparin a ×plan, which is herewith sent, shewing the present cou of the drainage channels within the Municipal limit Without the advice of some able professional gentlem it would be inadvisable for the Council to take any action in the matter. If it would be a question involv any considerable amount of money the work will hav to be postponed for sometime to come till the Counci is financially better than it is at present. However I shall give you more details about a week from this dat when I hope to complete the usual annual Budget re to the Government.

Dont print

I have the honor to be,
Sir,
Your most ob

No. 1969/5 of 9/11/96

To the Municipal Chairman

Tanjore ,

Sir ,

In your remarks upon my Inspection Notes of your Town emb odied in G. O No 1096 M dated 15/8/96, you state ~~under the~~ in refe ence reference to my remarks as tothe defective conduct of sewage farming that my recommendations to so extend the land at present at disposal as to en sure there should be no sewage di scharged by overflow fromthe site that thethese „will be attended to „ . ~~The Govt of India having directe~~

2 ~~having directed attentin~~ I shouldbe ob liged by your inforing me at an early date what actionhas been takeninthe matter .

3 would invite your attention to para 7 of 2190 L 26/10/96 ~~I enclose for your information an extract from~~ G. O . No--- dated--- ~~on the subject~~ .

(G.O. [illegible]

S. C. Report for 189[illegible])

1969 of 9/11/94
S

SANITARY ENGINEER
Register No. 746
8 MAR. 95
TO THE GOVERNMENT OF MADRAS.

B

12
3 of Mo of 1897

E.5
OW 23/95

12
SC 20 bk 2 of 97

SANITARY ENGINEER TO THE GOVERNMENT OF MADRAS
746
8 MAR. 95

OFFICE OF SANITARY COMMISSIONER
2785
18 DEC. 94

Bring up in a week
18-12-94

DW 2 8/95

26th October 1894, Nos. 2189, 2190 L., Local and Municipal.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

Read—the following paper :—

From J. P. HEWETT, Esq., c.i.e., Officiating Secretary to the Government of India, Home Department (Sanitary), to the Chief Secretary to the Government of Madras, dated Simla, 29th September 1894, No. 266.

I am directed to acknowledge the receipt of the report of the Sanitary Commissioner of Madras for the year 1893, together with the orders recorded thereon by the Government of Madras, forwarded with your endorsement, No. 1211 L., dated the 2nd July 1894.

2. The vital statistics of the Presidency have been very elaborately discussed by the Sanitary Commissioner in all their phases, especially in the bearing on them of meteorology and food-supply, and they have also formed the subject of careful comment by the Local Government. It is, however, noticed that the birth and death rates were only 27·0 and 19·3 per mille, respectively, which cannot be considered to be the true rates of gain and loss in the population of the Presidency by births and deaths during the year. With reference to this matter I am to invite the attention of His Excellency the Governor in Council to the Home Department Resolution, No. 2-Sanitary—106-117, dated the 18th June last, in which it was remarked that a much greater improvement in the registration of vital statistics is to be expected in the Madras Presidency. I am to say that the Government of India await the special report called for in paragraph 11 of that Resolution upon the improvements which are possible in the existing machinery for the collection and collation of the returns of births and deaths and the means by which such improvements may be effected. In the meantime I am to invite the attention of the Government of Madras to the remarks made upon the subject in paragraph 2 of the Memorandum, dated the 8th June 1894, by the Army Sanitary Commission upon the Madras Sanitary Report for 1892. A copy of that Memorandum was forwarded to the Government of Madras with Her Majesty's Secretary of State's despatch, No. 1 (Statistics), dated the 19th July 1894.

3. There was a decrease in 1893 in the number of places inspected by the Sanitary Commissioner, and I am to suggest that it may be impressed upon him that regular inspection forms an important part of the duties of his office.

4. The Government of India notice that Surgeon-Lieutenant-Colonel King has written a careful and well-considered note on the epidemic of cholera with which the Presidency was visited last year.

5. It is satisfactory to observe that a great deal of practical and useful work was performed by the Sanitary Engineer and his subordinates during the year, and that the Government of Madras are endeavouring, as far as possible, to overcome the financial and other difficulties which impede the execution of sanitary works in many parts of the Presidency.

6. To obviate the inconvenience which results from the present practice, under which the Sanitary Engineer submits plans of works direct to the Local Government for sanction without consulting the Sanitary Commissioner, the latter officer has submitted certain proposals to His Excellency the Governor in Council. In this connection I am to observe that the Government of India consider it very desirable that the Sanitary Engineer should work as much as possible in concert with the Sanitary Commissioner, and, as these two officers constitute the Sanitary Board in the Madras Presidency, it would appear to be feasible to secure that projects placed before the Government of Madras should have been examined by both of them.

Don't print

7. Sewage farming was carried on during the year under review in the towns of Madras, Tanjore and Negapatam, but it is stated in paragraph 13 of the orders of the Madras Government that in the first two towns, though the system is pursued profitably, it is based on bad sanitary principles. The Governor-General in Council would be glad if it could be found possible, under the directions of the Madras Government, to remove the defects which now exist at Madras and Tanjore, as sewage farming is still in an experimental stage in India, and the failure to observe the necessity for good sanitation in the experiments made must tend to hinder the solution of the important problem of the disposal of sewage. If the farms in question are to serve as models to other municipalities it is essential they should be managed on sanitary as well as economic principles.

ORDER—dated 26th October 1894, No. 2189 L., Local and Municipal.

Communicated to the Public Department and the officers concerned.

2. The attention of the Sanitary Commissioner will be drawn to paragraph 3 of the letter from the Government of India; the remarks in paragraph 6 will be considered when orders are passed on the proposals of the Sanitary Commissioner therein referred to.

3. The Municipal Commissioners of Madras will be requested to report the steps they propose to take to remove the defects which are stated in paragraph 101 of the Sanitary Commissioner's report to exist in the sewage farm in Madras, viz., the absence of arrangements for under-draining and the discharge of effluent, and the practice of disposal by soakage in the neighbourhood.

4. The Sanitary Commissioner will be requested to specify the particulars in which the Tanjore sewage farm "requires," as stated in the same paragraph of his report, "revision from a sanitary point of view."

(True Extract.)

Lionel Davidson
2.4
for *Chief Secretary.*

To the Public Department.
,, the Sanitary Commissioner.
,, the Sanitary Engineer.
,, the Sanitary Board.
,, all Presidents of District Boards.
,, all Chairmen of Municipal Councils.
,, the President of the Municipal Commission, Madras.
,, the Surgeon-General.

ENDORSEMENT—dated 26th October 1894, No. 2190 L., Local and Municipal.

Copy to the Government of India, Home Department.

J. F. PRICE,
Chief Secretary.

Exd. A. Raitt.

OFFICE OF SANITARY COMMISSIONER
No. 2536.S
6th NOV. 94

Govt. of {1894} Madras.

LOCAL AND MUNICIPAL.

SANITARY ENGINEER
746
8 MAR. 95
TO THE GOVERNMENT OF MADRAS.

B

Issued

Recd. Encl.

G.O., &c., 26th October 1894,
Nos. 2189, 2190 L.

E.3
OW 23/95

14
S.C. 2684 2/97

OCTOBER.

W. B. BANNERMAN.
6 NOV. 94

Sanitation Report.

Communicating, with remarks, to the Public Department and the officers concerned, the remarks of the Government of India on the Madras — for 1893

14
3209 m of 1897

5/11

48

Tanjore Municipal Office,
6th February 1895.

8th FEB. 95
TO THE GOVERNMENT OF MADRAS

No. 153

From,
M. R. Ry. K. S. Srinivasa Pillay avl.
CHAIRMAN,
Municipal Council,
TANJORE.

B

To,

The Sanitary Commissioner
Madras.

Sir,

In continuation of this office letter No. 3837 dated 15-12-94, I have the honor to inform you that the Council finds it difficult to meet the charges of the Tanjore Water works. Just at present it cannot undertake to carry out any other scheme which will cost money.

I have the honor to be
Sir,
Your most obedient Servant
T. M. Krishnaswami Iyer
Chairman Delegate
5-2-95

Dont print

SANITARY ENGINEER TO THE GOVERNMENT OF MADRAS
746
MAR. 95

293.5
FEB. 95

3 2 / DW 25/55

15 / SC2 no 642 of 97

15 / 3 of 1897

No 259 / 5 ~~8/2/95~~

28 / Print

To the Chief secretary to Govt ,

sir ,

With reference to G. O . No 2189 dated 26.10.94. I have the honour ~~to~~ and Reminder no 100 / 30.1.95 ~~I have the honour to state that this ref in e is refere ce has been delayed~~

Inspection notes on Tanjore (G.O. No 1096 M of 15-8-94)

I have the honour to state that my reply has been delayed owing to the non-receipt of information from the Chairman Municipal Council Tanjore as to how far action had been taken by him in regard ~~tohis promi tothe~~ to the ~~resolti~~ Resolution of the Council that my suggestion conveyed in Para-7 of the marginally noted Report "Willbe atten ede to" . Having asked me to wait for a final answer till the ~~budget question shallbe se tillth~~ Budget for the next year shall be settled (6th mont.) , he has at length informed me that the Council mean to take no action on account of paucity of funds .

2--With regard ~~to the natur of action required by me~~ to the nature of action that I consider ~~is don~~ is requisite on sanitary grounds, I have the honour ~~to sub join the~~ Ihave the honour to quote the subjoined ~~follwing~~ extract from my report on the Municipality of Tanjore above referred to . ~~This conveys fully~~ This report shows that whilst it is quite true a certain amount of sewgae is employed for farming not a drop more than is necessary to ~~satisf~~ satisfy the requirements of growth is so used by the Contractor, and that the surplus is allowed to run where it lists I need hardly say that a sine qua non in sewage farming is that the whole of the sewage [illegible] sahll be utilized on the spot, or, if any effluent occur, that it shallbe ~~in so puriti fed a conditionas not to~~ shall be in a purified condition as a result of its subjection to the purifying powers of the soil placed under certain appropriate condtions . I ~~consider that the Resolution of the Municipal Council not to incur any expenditu re on this head~~ I would respectfully advise that the resolution of the Council not to deal with this matter on account of the paucity of funds at their disposal be not permitted, unless it be shown by careful estimate that the expenditure contemplated would be prohibitive . On the scheme it would be possible to spend ~~anything betwe n Rs 1000 and a lakh, but I imagine it~~ a sum that is trivial or an enormous amount according to the complet ness or refinement employed, but I consider that for all practical purposes the required improvement could be made by judiciously applied measures at a very small cost .

SANITARY ENGINEER TO THE GOVERNMENT OF MADRAS
746
8 MAR. 95

No. 259/S

21
PW 25/95

16
S.C. [illegible]

16
3709 [illegible]

Local and Municipal Department.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

READ the following paper :—

From the Sanitary Commissioner for Madras dated 8th February 1895 No. 259/S, advising that the resolution of Tanjore Municipal council for not carrying out the suggested improvement for sewage farm on account of paucity of funds be not permitted and informing that for practical purposes the required improvement could be mad by judiciously applied measures at a very small co

Print

Order dated 26th February 1895 No. 291 M.M.

The Sanitary Board will be requested to prepare in consultation with the municipal council an estimate of the probable cost of effecting the requir improvements to the sewage farm, and submit t Government at an early date.

(True extract)

WFrancis

Ag: Asst. Secreta
for Chief Secret

To
The Sanitary Board
Chairman Municipal council, Tanjore
thro' the Collec

SANITARY COMMISSIONER
438. S.
11 MAR. 95
GOVERNMENT OF MADRAS

P. W. CURRENT No. 2 S

SANITARY ENGINEER
Register No. 746
8 MAR. 95
TO THE GOVERNMENT OF MADRAS.

No. 417/S

Forwarded to the President Sanitary Board for favour of disposal.

W. E. King.
Surg. Lt. Col.
Offg. Sanitary Commr.
Secretary (Genl. San. Dept.)
Sanitary Board.

~~II~~ 1st March 1895

17
S. C. [illegible] of 97

17
3709 M of 1897

Encls 7 (Plan)
Recd: 5-3-95

No. 2 S. d/ 7 March 1895

To
The Sanitary Engineer for the preparation of the required estimate

[illegible]
Col. R.E.
President Sanitary Board.

File
[illegible] 28/4

Comm 6/3/95

Note

I have already asked the Council to allot funds for the survey to be carried out.
[illegible]
8/3/95

To lie over until receipt of reply of Council

18

B 534P

Sanitary C. No. 110.

Note by the President, Sanitary Board:-

No. 116 S. d/24th July 1896

After perusal of these papers, I am of opinion that a gravitation scheme is feasible, and that even -- should the filters cost Rs. 30,000 it will be better to adopt them -- than to incur the constant expense of pumping. I therefore think the scheme should be revised accordingly. The cost of pumping as given by the Sanitary Engineer is Rs. 3,000 per annum: this at 4 per cent represents a capital outlay of Rs. 75,000, so that if the gravitation scheme costs that sum more than Mr. Jones' scheme it will still be advisable to adopt it. I think the 2" pipe allowed by the Sanitary Engineer -- will suffice.

Print

D. M. Campbell Col. R. E.,
President, Sanitary Board.

The Sanitary Engineer,
with reference to his Office Note
dated 11th May 1896, and
original papers
returned.

Enclosure to letter No. 1521 1897

Tanjore Drainage Estimates & other papers

19 / S.C. No 642 of 97

19 / 3709 [illegible]

108

58

A.

The Tanjore (Fort) Drainage Improvement Scheme.

September 1897

1 With reference to the President of the Sanitary Board's note, No. 116.S. dated 24th. July 1896, the undersigned now forwards plans & estimates for a gravitation scheme for Tanjore Fort. The undersigned has on several occasions urged that such a scheme was not feasible & it has become so only by a departure from principles which should find a place in all drainage schemes , one of these being that the gradients of drains & sewers should be such that the velocity is sufficient to keep such drain or sewer self cleansing - if this departure is allowed , the scheme now put forward can be carried out though it is not one the undersigned would have proposed and it is sent forward in view of the President's note already alluded to.

2. The main intercepting sewer which will be a 9" half oval open drain (Burn & Co's glazed tiles) will have a grade of 1 in 790 only, for its whole length and this grade cannot be improved - it has only ~~to be~~ been obtained by omitting any storage tank above the sewage farm - to introduce a storage tank would require the loss of a large portion of the available farm area which all lies to the west end of the town - The 9" drain will carry the sewage coming from the east end of the Fort & this is calculated to amount to 32 C.ft or 200 gallons per minute (that is taking half the sewage as flowing off in 6 hours). The full discharging capacity of this drain is 37 C. ft per minute. Its velocity is however only 93 feet per minute or 1½ ft a second so that it cannot be self cleansing- On the acceptance of the above arrangement depends the remainder of the scheme which is much cheaper of course in every respect than the other schemes put forward & it no doubt will serve Tanjore for years to come if due attention is paid to this open drain- it is kept clean and free from silt.

Print

3. The scheme itself may now be described-

As in former schemes the sewage of the East Main Street & its adjoining streets is intercepted where it enters the Fort Ditch & here there is an overflow carried to the existing outlet east of East Main Street as shewn on the plans and sections (- sheets 1& 2) . The contributory drains to East Main Street Drains are dealt with as in former designs all sewage being brought to East Main Gate street & being diverted from the Fort Ditch.

4. The intercepting sewer will consist of 9" semi oval (Burn & Co's) glazed tiles with spigot and faucet joints laid on the top of an embankment passing along the side of the Fort Ditch & laid at a grade of 1 in 790. The intercepting sewer at its head receives the sewage of East Main street & no other contributory drain enters until Ranavoical street is reached- here the sewage & storm water of Ranavoical street & part of North Main Street will be received & a 30" built drain (see section on sheet No.2) will be constructed for a length of 775 feet where it meets the drain from West Main Gate street. Thence to the sewage farm there will be a 36" drain (part of it covered) which will be carried in a direct line to the South East corner of the proposed sewage farm where it meets the existing storm water & sewage channel, near the point vide sheet No. -the Main sewage carrier will be taken off & led to the east side of the sewage farm.

5. The total amount of sewage which it is calculated will be received at the sewage farm is 300,000 gallons for 20,000 people taking 15 gallons a head half flowing off in 12 hours, the discharge per minute will therefore be 416 (say 420) gallons per minute- of this there will be received by the intercepting sewer 200 gallons at the east end, at Ranavoical street 100 gallons & at West Main Street 120 galls.

6. The area which it is proposed to take up for the farm at present is 10 acres ; this portion is shown by red border line (vide sheet 4).

7. The water supply to Tanjore at present does not exceed 10 gallons per head daily over the portion supplied so that the farm would be required to dispose of about 20,000 x 10 = 200,000 gallons daily which gives 20,000 gallons or 2000 people per acre. This is greater than the area in most farms where intermittent filtration is in use in England & this farm will be very thoroughly underdrained . In any case there is ample room for an extension of the farm so that there is no harm in beginning with a reasonable area.

8. The main carrier passes along the east of the farm & the sub carriers take off at every 300 feet . The subsoil drains will be laid 3 feet deep, the main subsoil drain being 3" in diameter & the subsidiary subsoil drain 2" in diameter . The Main subsoil drain will discharge into a deep channel cut along the west of the farm which will be filled with gravel, through this the clarified water discharged will find its way to the channel by which the storm water passes to the Vadavar (Vide sheets 4 & 6) . The whole area of the farm will be levelled & graded as shewn on sheet No. 5.

9. The total cost as estimated (abstract & detailed estimates herewith) is Rs 33,440. Should Government be able to grant half the sum & lend the remainder at 4¼ % the annual cost for interest to the Municipality will not exceed Rs 690 ; to this should be added

710.6.9

Per month

2 Drain cleaners (extra) at Rs 6/- = 12

Sewage Farm {
1 Farm Supt------------------at " 20 = 20
4. Distributing Coolies-------" 7 = 28

60

The cost of any other labor engaged from time to time can be set off against the farm receipts which in time ought to be considerable . If the yield amounts to 25 tons* per acre per annum or in all 250 tons , this ought to bring in an income of about $\frac{250 \times 2240 \times 8}{100 \text{ lbs}}$ = Rs 5,300 annually

* Madras yield = 29½ tons

10. If the farm is properly worked & sufficient sewage received there will be a gain to the Municipality by the execution of the work even if the whole money for the scheme has to be borrowed at 4¼%, presuming of course that a ready sale can be had for the grass as is the case in Madras.

Office of the Sanitary Engineer ,
Fort St. George, 18 September 1897

Sanitary Engineer to Govt.

202

Enclosure to letter No. 1521 of 1897

58

20 / E.C. No 642 of 97

20 / 3709 M of 1897

No. 1521.

59

138

Government of Madras.

Office of Sanitary Engineer,

Fort St. George, 18th September 189

From

J. A. Jones Esq. Mem. Inst. C.E., F.R.S.E,
Sanitary Engineer to Government.

To

The Secretary,
Sanitary Board,
Chepauk.

Sir,

Circumstances having prevented the programme of ~~we~~ work as laid down in Go.No. 252 M of 19th February 1897 being completed owing to the facts given in my No. 1224 dated 16th July 1897 addressed to the Secretary to Government, Local and Municipal Department and sent through you, I have been able to proceed with the design and estimates for the Tanjore(Fort) Drainage improvements and these I have now the honour to forward with a report on the scheme and other papers and plans as detailed below.

I have the honour &c.
(Sd), J. A. Jones,
Sanitary Engineer to Govt.

1. Bundle of former papers
1. Report
1. Estimate (abstract & detail)
1. Roll of plans (6 sheets).

(True copy)

V. Raghava Chari

for Ag. Secretary to Government

Print

Report on proposed Improvement of Drainage of Tanjore.

The sewage from the Fort at Tanjore is disposed of by delivery on to small farms in, or adjacent to the various outlets, and such farms are in or adjacent to the Fort Ditch on the north of the town. Sewage farming is not carried out as it ought to be, and only a minor part of the sewage is used while the remainder flows by various outlets to tanks to the Vadavar or until lost in the earthen ditch through which it flows. The Sanitary Commissioner having recommended that matters should be put on a proper footing, Government ordered that an estimate of cost be prepared; the Council

Print

Supple

7 23/4 m98

supplied funds for the necessary levels &c.

2. The scheme to which the accompanying plan & estimate refer includes

(1) The alteration & regrading of the drains in East Main Street & East Gate Street & adjoining streets so that all sewage from this locality & the sewage from the Main drain may be carried to the head of one of the intercepting sewers hereafter described.

(2) The construction of two intercepting sewers collecting the sewage from the various existing drains discharging into the Fort Ditch.

(3) The provision of a pumping station & delivery main.

(4) The construction of a sewage farm.

The population of the Fort t Tanjore is about 20,000. The total drainage provided for is 300,000 allons, one half flowing off in

6 hours or at the rate of 416 gallons per minute.

The manner in which it is proposed to regrade the street drains near East Gate Street is shown in the accompanying section.

The two intercepting sewers with gradients of 1 in 140 (East Sewer) & 1 in 190 (West Sewer) ~~respectively~~ can discharge 218 gallons & 185 gallons per minute respectively. This is less than the total amount, but a portion of the sewage will be received at North Gate Street opposite the pumping station. The manholes as shown will be built up to above the entrance level of the sewers. The sewers will receive the drainage from the East Main & West Main Streets at their upper ends & at their junction from a small area flowing in at North Gate Street.

The sewers discharge into a well situated outside the proposed Engin House to the north of the Fort Ditch.

The size of the engines & the cost of

the pumping main is dependent on the site of the sewage farm.

If the sewage farm is placed to the east, the left will be only 12 feet and a gravitation pipe of stone-ware 9" diameter can be used.

If the sewage farm is on the west the main will be under pressure and 7" diameter iron pipe is necessary.

The objection to locating the farm to the east is that the land is flooded on occasions of rain fall and is below the flood levels of the Vadavar. The ordinary flood level of this channel is 131.80, the maximum flood level is 134.74 while the average level of the proposed sewage farm area is 129.00. This, it is believed, is the land proposed for the sewage farm by the Sanitary Commissioner.

No - See my note

The only other suitable area for sewage farming is that to the west on to which the greater portion of the sewage now discharges and is

shown on the plans. A large portion of the area is waste land, the remainder irrigable land. It is located so that it can be easily drained & the effluent sent to a branch of the Vadavar.

This is the area selected

The area available for the farm on the west is not limited, that to the east cannot exceed 25 acres. It is proposed to take up on the west an area of 40 acres, thus allowing for the sewage at 15 gallons per head of 600 persons per acre; as it is proposed to underdrain the farm, this will be sufficient. It is proposed to place a sewage storage tank at the higher end of the site. A design for this accompanies.

Estimates.

The total of the estimates is

Farm to the west	Rs 68,400
do east	45,700

These might be reduced by the omission of 12" & 6" tiles for the main & sub carriers, earthen channels being alone used, and by the omissio omission of the subsoil drainage pipes of which I doubt the possible efficacy in this country. If the former are omitted the reduction would amount to Rs 10,350 in the former & Rs 4,340 in the latter amount.

4. The plans are self explanatory of the proposals made.

5. The annual cost to the Municipality would depend on the amount of the Government grant & the working charges. The cost of pumping to the farm on the west would be about Rs 3,000 annually, on the east Rs 840 annually, and allowing Rs 1000 for working the farm in each case the cost would be (taking the Govt. grant as 50%).

$$\overset{Rs}{\frac{68,400}{2}} \times 5\cdot96\% = \overset{Rs}{2,038}$$

Pumping = 3,000

Farm —— = 1,000

6,038

$$\frac{45700}{2} \times 5\cdot96\% = 1,360$$

Pumping = 840

Farm —— = 1,000

3,200

6. Government

No. 291 Mis., dated 26th February 1895, Local & Municipal, that the matter should be considered in consultation with the Municipal Council. After the Sanitary Board has decided as to the plans to be adopted or any modification thereof; these as well as the estimates may be sent to the Municipal Council for remarks.

Sany. Engr. to Govt.

II

1
[illegible] 642 of 97

5
2314 [illegible]

1
3709 No of 1897

Rc³ 1521 7

GOVERNMENT OF MADRAS.

SANITARY ENGINEER'S DEPARTMENT.

~~SPECIFICATION and Detailed~~ detailed & abstract Estimate No. 7

of 1897-98 of the cost of constructing

Tanjore (Fort) Drainage

Improvements,

for the town of

of Tanjore.

Amount of Estimate No. 7

Rs. 33,440.

Covering letter No. 1521 dated 18.9.97,

21/5 C No 642 of 97

21/3709 M of 1897

S.E./6. 1,000—8-3-97.

No. 1521

GOVERNMENT OF MADRAS.
OFFICE OF SANITARY ENGINEER,
Fort St. George, 18 Septr 1897.

From

J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E.,
SANITARY ENGINEER TO GOVERNMENT,

To

The Secretary,
Sanitary Board,
Chepauk.

SIR,

Circumstances having prevented the programme of work as laid down in G.O.No. 252.M. of 19th. February 1897 being completed owing to the facts given in my No. 1234 dated 16th July 1897 addressed to the Secretary to Government, Local & Municipal Department, and sent through you, I have been able to proceed with the design & estimates for the Tanjore (Fort) Drainage Improvements and these I have now the honor to forward with a report on the scheme & other papers and plans as detailed below.

I have the honor to be,
Sir,
Your most obedient servant,

JA Jones

Sanitary Engineer to Govt.

Print

1. Bundle of former papers
1. Report
× 1. Estimate (abstract & detail)
1. Roll of plans (6 sheets)

69

Government of Madras. 8

SANITARY BOARD OFFICE.

3709 M

Proceedings of the Sanitary Board, No. 730/8, dated 26-10-97
despd 26-10-97

Read the following :—

Letter from the Sanitary Engineer to Government, No. 1521 dated 18th September 1897.

Resolution.

With his letter read above, the Sanitary Engineer submits plans and estimates for the Tanjore (Fort) Drainage Improvements. The scheme is described in paras 3 to 8 of the report. It is much cheaper than any other scheme which has been proposed, and if attention be paid to the open drain, it will, in the opinion of the Sanitary Board, prove effective.

Print

2. The total cost is estimated at Rs 33,440 and, should Government be able to grant half this sum and lend the remainder at 4¼ per cent, the annual cost for interest to

22/3709 M of 1897

to the Municipality will amount to Rs-710. To this sum has to be added the cost of permanent establishment, Rs 60 per mensem. The receipts for the Sewage farm are estimated at Rs. 3,300 annually

3. It would thus appear that the financial prospects are good, and that under proper management, the scheme is likely to be a source of profit to the Municipality even if the whole capital is borrowed at 4¼ per cent.

4. The Sanitary Board accordingly recommends the scheme for the sanction of Government.

(True Extract)

R. Sarton S.
Secretary, Sanitary Board.

KS
To

The Secretary to Government, Local & Municipal Department, with papers in original

" Sanitary Commissioner

K.S.

G.
25

B/

71

LOCAL AND MUNICIPAL DEPARTMENT.

C. No. 3709 M

SUBJECT.

The Tanjore (Fort) Drainage Improvements.

FOR ORDERS.

~~The plans are not split up. If they can be sent (we leave tomorrow (Friday) at [illegible] Vallam, Tanjore), I can probably go into the matter on the spot.~~

~~RS~~
~~25/11/97~~

No assumption of the kind must be made. The town must find the money practically & can easily do so.

RS

Don't print

With its proceedings read above, the Sanitary Board forwards the plans and estimates of a scheme for the drainage of Tanjore, prepared by the Sanitary Engineer. The scheme deals only with the drainage of the Fort and its initial cost is estimated at Rs 33,440. Assuming that Government will make a grant of one half of the total outlay and lend the balance at 4¼ per cent interest, the Sanitary Board thinks that the annual cost on account of interest will be Rs 710, and that, if this is added to the cost of the establishment required for flushing drains, &c, (Rs 720), the total expenditure will be Rs 1,430 per annum. The Sanitary Board ~~and the Sanitary Engineer~~ has, however, overlooked the fact that in addition to interest, a certain amount will have to be paid annually towards the repayment of the principal. As no loan can be sanctioned for a longer period than twenty years, except under very special circumstances and with the special sanction of the Government of India - vide the Resolution of the Government of India in G.O. No 1808 & dated 30th September 1896, the annual payment on account of a loan of Rs 16,720 from Government, being half the initial cost, at 4 per cent interest, repayable in twenty years will be Rs 1,230, which together with the annual charges amounting to Rs 720, will bring the total annual cost on account of the scheme to Rs 1,950. The income from the sewage farm is estimated at Rs 3,300 annually, so that the scheme will be more than self supporting, if the Government makes, as usual, a half grant from Provincial funds and lends the balance on the terms above referred to. It is, however, doubtful whether in the existing state of its finances the Government can hold out any promise of a grant or loan from Provincial funds, especially in view of the remarks of the Government of India in paragraph 4 of its resolution embodied in G.O. No 323, Financial, dated 8th April 1897.

A loan from the Public might be for 30 or more years. Fifty years is a usual time. The longer the time, the better ~~the~~ terms which can usually be got.
BS

P

There's no doubt about it. Besides if we had the money it wouldn't go to Tanjore
BS

If the Council borrows the whole of the required money in the open market on terms of repayment in 30 years with interest at six per cent, the annual payment on account of the loan will be Rs 3,121 (Interest Rs 2006 + Principal Rs 1115) which together with the working charges (Rs 720) comes to Rs 3,841. As against this, the estimated income from sewage farming is Rs 3,300, and the Council must be able to find the balance of Rs 541 out of its current revenue. Before, however, passing final orders in the matter, it is submitted that the municipal council may be consulted about the proposed

I believe I know how they c^d get the money at 4 or 4½%
BS

BS

scheme and asked to report how it proposes to finance it.

V.R.
22/11/97

H.M.

Tanjore is a rich town & can easily in my opinion afford to finance the scheme without any aid from Govt; & it shd be asked to do so

2/12/97

H.B.
9/12/97

Local & Munl. (1897) Department.

CURRENT No. 3709 M

9D

Rise

Order. No. 2775 M Mi of 11-12-97

The plans and Estimates will be forwarded to the municipal Council of Tanjore for remarks and for report as to how it proposes to find the required funds for Carrying out the work and for meeting the annual expenditure which its execution would involve. The Govt is not prepared to make any grant or loan from Provincial funds on account of this work, but ~~would~~ sanction the (from orders) raising of a loan in the open market.

V.R.
11/12/97

H.T.
11 12 97.

From The Secretary, Sanitary Board

27 OCT. 1897

No. 130/S

Dated 26th October 1897

Received 27-10-97

Registered

Enclosures 23 (1 book of plans ~~+ counterfoil of plans~~)

Spare copies

SUBJECT.

The Tanjore (Fort) Drainage Improvements:—

Recommending for the san
tion of Government a schen
for —

To The Chairman, M.C. Tanjore
(with plans & estimates to be retd.)
thro the Collector
„ Sanitary Board

Despd 11/12/97

BACK PAPERS.

G.O.	No.	Department.	Date.
Go	2200	Rev	11-10-97
"	2190	Rev	8-10-97
"	551	Rev	15-3-97
"	252	Rev	19-3-97
"	1634	Rev	23-4-97
"	291	Rev	26-2-95
"	2189	L. Rev	26-10-95
"	1096	Rev	15-9-94

FURTHER PAPERS.

G.O.	No.	Department.	Date.

---

8 78 B

TANJORE MUNICIPALITY.

Extract from the Proceedings of the Municipal Council, Tanjore, at a meeting held at 5 P. M. *on* Friday *the* 25th February 1898. *at the Municipal Office, Tanjore.*

PRESENT.

Councillor.

* * *

~~Resolution No.~~

~~Read~~

M.R.Ry. V. Appasami Vandyar avl Chairman
" Vythilingam Pillai avl Councillor
" Palaniandi Pillai avl "
" Kandasami Pillai avl "
" Muthukristna Naidu Garu "
" C.S. Kristna Row avl "
" S.A. Anantha Narayana Iyer avl "
" Iroola Pillai avl "
" N. Rathakristna Naidu Garu "
" T.D. Swaminatha Iyer avl "

Don't print

Reso No I.

Read endorsement No 355 M of 1897 dated 25-1-98 from the Collector of Tanjore requesting to place before the Council the G.O. No 2775 M Mis dated 11th December 1897 forwarding plans and estimates of the drainage improvement of the Tanjore Fort for remarks and report as to how to find the required funds for carrying out the works and for meeting the annual expenditure.

The Scheme suggested by the Government is approved unanimously. As for the funds necessary for the purpose the Council resolves by a majority that necessary funds be raised by a loan in the open market. M.R.Ry Kandasami Pillai Avl. M.R.Ry Iroolu Pillai Avl. and M.R.Ry Vythilingam Pillai Avl. dissenting on the ground that the Municipality is not in a position to pay up any loans that may be raised.

(Signed) V. A. Vandyar
Chairman

True Extract,

V. A. Vandyar
Chairman

4/
23/4

B

TANJORE MUNICIPALITY.

Extract from the Proceedings of the Municipal Council, Tanjore, at a meeting held at 5 P. M. on Wednesday the 22nd June 1898. *at the Municipal Office, Tanjore.*

PRESENT.

~~Councillor~~.

* * *

~~Resolution No~~.

~~Read~~

1 M.R.Ry. C. Murugesam Pillai Avl. Dy Collector & Chairman
2 " M. Nataraja Iyer Avl Councillor
3 " S. W. Upsham Esqr. "
4 " S. Ramadas Iyer Avl. "
5 " H. A. F. Nailer Esqr. "
6 " Muthukristna Naidu Gru "
7 " S. A. Anantha Narayana Iyengar "
8 " Iroolu Pillai Avl. "

Don't print

Resolution No. II.

Read letter No. 335 Mul. of 1898 dated 8-4-98 from the Co

requesting to forward a fo
application for the loan to be
raised for sewage farming.

The draft application is
approved.

(Signed) C. Murugesan
Chairman

(True Extract)

For

Dy. Collector & Chairman

---

given for copying

L. & M.
2,000

Examined

Signed

189

T

IN G.O., No. , DATED
189

SURES TO C. No.

OF GOVERNMENT .. .. .. A A A A A A A

TES OF GOVERNMENT.

T WITH DITTO.

AS NOT FILED UP, BEING MEANT FOR DESPATCH
IN ORIGINAL.