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MADRAS RECORD OFFICE.

Government of Madras.

Public works **DEPARTMENT.**

G.O. No.	490	Press Mis.
320,321 323,324, 325,326		
Dated	15-2-1873.	

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
15th February 1873.*

No. 320.

Read the following letters:—

From Colonel E. A. FOORD, R.E., Superintending Engineer, 5th Division, to the Secretary to Government, Public Works Department, dated Camp at Salem, 17th August 1872, No. 98.

THE Report of the Committee on the condition of the Government Bakery at Bangalore having been made while I was in England on furlough, and the Proceedings of Government of the 22nd July, No. 1,736, having reached me before my visit to Bangalore, I have deferred, till now, any report of my own on that work. Having now inspected so much of the building as is standing, and the materials of the portion taken down, I beg to forward the following explanation:—

2. As regards the trusses, I submit there was not any defect or any novelty in the design, which may be seen in Tredgold's Carpentry, and the description of it in that well-known standard work is as follows:—"The advantages of this roof consist in the small number of joints in the truss, in being able to support the tie-beam at any number of points, in admitting of a firm and simple connection with the tie-beam, and in avoiding the ill-effects attending the shrinking of king and queen posts." The very same kind of trusses had been previously adopted for the roof of the engine-house at the Ulsoor Rock. No difficulty was experienced in putting them together, and they are perfectly sound and good at the present time.

3. That the Contractor was not supplied with working drawings I attribute to Captain Tulloch's transfer from Bangalore. But the Contractor could have obtained any information he required, or any drawings either of the wooden trusses of the upper-story or of the iron roof of the machinery room, by applying to the Executive Engineer. Or he might have seen every detail of construction of the trusses by going to the engine-house at the Ulsoor Rock. The trusses of the Bakery have, undoubtedly, been very badly put together, and their failure is due to the bad workmanship and not to faulty design. I have no recollection of having seen the trusses being put together at the site of the Bakery, or of having seen them at all till they were in their places in the roof. They did not show any symptoms of failure till a considerable time had elapsed.

4. It was my practice to visit Bangalore several times during the five or six months of each year that I was in the Salem District, but during the rest of the year, while in South Arcot, I was too far off to go there.

5. In 1866 I went to Bangalore five times between July and October. During those months, Captain Tulloch was Executive Engineer, and he was reporting every month most favourably on the building, of which the lower-story only was in progress, and continued to do so till his transfer in February 1867, and I did not myself notice any bad work.

6. I did not again visit Bangalore till July 1867, and I was there the whole of that month and to the 6th of August. By that time the lower-story of the Bakery had been completed and the upper-story commenced but was making slow progress. I was at Bangalore also from the 22nd to 26th of October, and according to the Progress Report for that month the upper-story was then completed with the exception of flooring and plastering.

7. In 1868, I was at Bangalore six times between June and December. There was then not very much remaining to be done, but the building was making

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very little progress, and the work had to be taken out of the Contractor's hands in October.

8. Having lately inspected the building, I cannot but admit that the materials and workmanship of the upper-story must have been of the very worst description, and I cannot understand how it was not brought to my notice or how I did not at the time observe it, though a period of six months necessarily elapsed between some of my visits; but I must express my deep regret for not having observed it. Captain Tulloch made arrangements for the Bakery being built by a perfectly competent Contractor, but he, after some progress had been made with the building, accepted an appointment at Madras, and the work fell into the hands of Contractors who have proved to be both incompetent and dishonest.

No. 321. From Major J. O. MAYNE, R.E., Superintending Engineer, Hyderabad Public Works Department, to the Secretary to Government, Public Works Department, Madras, dated Bolarum, 6th August 1872, No. 2,178 G.W.

I HAVE the honour to acknowledge the receipt of the Proceedings of the Madras Government, Public Works Department, No. 33, dated 22nd July 1872, on the failure of the Government Bakery at Bangalore.

2. In paragraph 8 thereof the Madras Government holds me to blame for not reporting on the condition of the building during my short incumbency of the office of Executive Engineer at Bangalore in 1868, and imply that I ought to have taken some steps to improve its construction.

3. The receipt of these Proceedings is the first intimation that I have received of any failure having occurred in connection with the building, and even now I am not aware of what has actually occurred.

No communication of any kind has ever been made to me on the subject, and I suddenly find myself condemned without a hearing.

In the Public Works Code of the Government of India it is laid down that whenever any charges are brought against an officer of the Public Works Department, the first thing to be done is to forward him a complete record of the case, as far as it concerns him, and call on him for any defence he may wish to offer.

This custom does not appear to prevail in Madras, but I trust His Excellency the Governor in Council will be pleased to admit that such a course would only have been just towards me, and I much regret that I should have been condemned without an opportunity of defending myself.

4. I cannot trust to my memory sufficiently to offer at once any complete defence for not having made any report on the building, but I feel certain that if I am furnished with the papers I require, I shall be able to satisfy His Excellency the Governor in Council that the censure passed on me is not warranted by facts. I will however state a few circumstances from memory only, which may therefore be liable to slight correction.

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tions, but which will, I trust, be sufficient to induce His Excellency to direct the papers and information I require to be furnished to me.

5. In the first place I would remind the Madras Government that I was posted to Bangalore against my will in 1868, (*vide* records of your office,) and from the date of my joining I had every reason to believe that I should have been again relieved any day, and I never expected to remain there more than a week together, which, in a great measure, led me to confine my duties to keeping works going and not taking up any important question, unless feeling that there was good cause. However, when I saw necessity, I did so, instance the Ulsoor water-supply scheme, which I reported on; Mr. Lee's contracts; and I made several reforms in the supply of materials at the New Cavalry Barracks; and I feel certain had any necessity been apparent I should have reported also on the Bakery.

The remark in paragraph 8 of Proceedings that I took no steps "beyond getting a formal contract drawn up with Mr. Lee, more with a view, it would appear, to ensure speedy construction than to improve its construction," strengthens me in the feeling that had I seen any prospects of failure I should have taken some steps to improve the building. In fact I did all that occurred to me as necessary. I believe I know bad from good work as well as most officers of the department, and I had no reason for concealing anything.

6. It is difficult to recall to memory exactly what took place in connection with the building whilst I was in charge. To the best of my recollection very little was done during that time, as the works were delayed by the absence of the Contractor and in waiting for the machinery, and my work was confined to finishing a few ovens, completing the chimnies, and laying the stone and asphalt pavings on ground-floor and upstairs. Nothing was done to the two rooms at the east end of building for the machinery.

To the best of my recollection no defects of any kind showed themselves during my tenure of office.

7. I have some recollection of allusions to bad materials having been used by Mr. Lee, but this was not outwardly apparent, and none, I can say, were used whilst I was in charge, and no defects were apparent in consequence of the use of those materials; and I hope it will be admitted that, where no defects are apparent, it is not the duty of each successive Executive Engineer assuming charge of a work to be opening it and looking for bad work.

I am not certain that the fact of these bad materials having been used had not been reported to the Government, or at least to the Superintending Engineer, and, under above-mentioned circumstances, I cannot see that I had anything to report in connection therewith.

8. From paragraph 2 of Proceedings I observe that the dangerous state of the main building, which has led to its being dismantled, was mainly due to the defective construction of the timber trusses, but that there was nothing absolutely faulty in the roof designs. Now,

No communication of any kind has ever been

I had nothing whatever to do in putting up these trusses; to the best of my recollection they were up and the buildings were roofed in before my arrival at Bangalore. I had, therefore, no opportunity of examining the details of their construction, and as no signs of failure were apparent again I must hold myself free from any blame for not reporting on them.

9. Again, not knowing the extent or nature of the failures that have occurred
Not able to judge how far I could have fore- I am not in a position to judge how far I
seen danger. could even possibly have foreseen them.

10. Under the above circumstances, I have the honour to request that His
Detail papers, and information required. Excellency the Governor in Council
will be pleased to direct the following
papers and information to be furnished to me, to enable me to offer a more detailed
explanation of my connection with the building.

I require copies of all the reports of the whole case with the plans of the building and Monthly Progress Reports of the building from January to July (inclusive) 1868, and of any notes made by myself or others on the building as regards the bad materials during that period or previously; and especially I should like to be furnished with copy of my Superintending Engineer's report after his inspection at Bangalore in June or July 1868.

Particularly I require information as to the extent and nature of the failures and when they first became apparent.

No. 322. From Captain J. PENNYCUICK, R. E., Executive Engineer, to the Secretary to Government, Public Works Department, dated Camp at Valelundkee, 2nd August 1872.

I HAVE the honour to acknowledge the receipt of G. O., No. 1,736, of the 22nd July 1872.

2. It seems a strange proceeding that an order of this kind, severely censuring no less than six officers of all ranks and ages, should have been issued without affording them any opportunity of explaining their respective shares in the trans- actions referred to, or even, so far as I understand, informing them that their conduct was under consideration at all.

3. With the part of the other officers concerned in the business referred to I have nothing to do, but with regard to my own share in it I request the attention of Government to the following facts.

4. As to the roof trusses I distinctly remember noticing and pointing out to Captain Tulloch, before the plans were sent in, what I considered to be a defect in the design; exactly what that defect was, or whether it was the same as has been found actually to exist, I cannot say from memory, without seeing the plans, but the fact I remember perfectly. Captain Tulloch did not agree with me, and I cer- tainly do not consider that I was bound to press my opinion, which was very likely to be wrong (perhaps was) against that of an officer not merely my senior, but under whose orders I was actually serving at the time. Considering that the designs were afterwards passed both by the Superintending Engineer and by Government, I think I was justified in assuming that my objection was a mistaken one, and in putting up the trusses, as it appears I did, without further question.

5. That there was plenty of bad work in this building (and I have no doubt in many others) I am not at all surprised to hear. Considering the circumstances under which I had to work, the wonder is that any decent work was ever done.

6. The executive work at Bangalore during 1867 was far heavier than it had been for some years before (certainly double what it was when I was in charge of the range in 1864), and I believe than it has ever been since. For nearly two years before I took charge there had been two officers there; in spite of this, owing no doubt partly to the fact that a good deal of Captain Tulloch's time had to be given to the completion of his Madras Drainage project, and that my own was not

I was employed almost entirely in the prepara- tion of designs, of which that for the Bakery was not one. I never had anything to do with executive and hardly ever with office work, and knew next to nothing of what was going on.

as well employed as I think it might have been, the office work, especially as regards the submission of estimates, was in a state of absolute chaos. The arrears were so heavy that when I took charge, which I had to do rather sud-

denly (if I remember rightly no regular transfer was ever made), I was absolutely appalled at their amount. Colonel Mesham, who was then (and I believe is still) Deputy Assistant Quarter Master General at Bangalore, will no doubt be able to testify as to the state the correspondence between the two departments was in.

7. I know that for the first two months after I took charge I gave up every sort of amusement, I moved the office into another building in order that I might live under the same roof with it, and I gave up even dining at a Military mess in order to be able to devote my evenings to work. I have often worked from six in the morning till ten at night, with only the shortest intervals for meals.

8. His Excellency the Commander-in-Chief was then commanding the Mysore Division, and to him I confidently appeal as to whether there was any idleness or neglect on my part. His Excellency is in a better position for judging on this point than even the Superintending Engineer, as with him, and his staff officer, Colonel Mesham, I was in constant personal communication.

9. The Progress Reports of the year will show how heavy the executive work was. Everything had to be done by "lump contract," not on account of any special orders of Government, but because it was a physical impossibility to get through the work in any other way. The careful supervision necessary for the prevention of scamping in contract work, especially in building, where bad work can be so easily and quickly hidden, was out of the question, and I think it is surprising that there was not more than there appears to have been.

10. Almost the first thing I did after taking charge of the range was to bring to notice the insufficient establishment belonging to it, and to ask for an increase. If I remember rightly I asked for two extra Overseers and for an addition to the office establishment, to save me from the necessity of drawing plans and making estimates with my own hands. This was refused, and Government sent me instead

two European Supervisors, who were for all practical purposes perfectly useless; * and it was evident that for the future I must do my best to accomplish what I knew to be an impossible task.

* One of them went to Mercara soon afterwards, and I think did not come back till after I had left.

11. Shortly after this, I was recommended by Colonel Anderson for the post of Auditor of Railway Accounts about to be vacated by Captain Filgate, but the Government refused to allow the appointment, on the express ground (as I was told) that they specially wished me to retain charge of the Bangalore Range.

12. I remember writing to Mr. Loch, now Private Secretary to His Excellency the Governor, and who will doubtless remember the circumstances, and asking him to speak to General Orr upon the subject; I said that I was specially anxious to be relieved from Bangalore because I thought an officer of higher rank than myself ought to hold the place, partly because he would be in a better position for dealing with the Military authorities, but chiefly because *the work was too heavy for one officer*, and I knew that the Government would never give me an Assistant as they might to an Executive Engineer of higher standing.

13. If Colonel Foord or Colonel Mesham is in the habit of keeping demi-official letters, I think mine will show how bitterly I spoke of the difficulties I had to contend against, and I say plainly that for one officer properly to manage the whole of the work at Bangalore five years ago was a perfect impossibility.

14. I have no desire to plead youth or inexperience as an excuse for any proceedings of mine; I had quite enough experience at that time to know good work from bad, and if bad work was done during my tenure of office it was allowed to pass from causes which no officer, not the most skilful or experienced in the service, could have contended against. If the Government had charged me with want of skill or want of judgment I might have found a difficulty in meeting the charge; but carelessness and neglect are precisely the faults that any one acquainted with the facts would say were the very last of which I could be accused.

15. Unfortunately no member of the present Government, except his Excellency the Commander-in-Chief, was in office at the time of which I am writing; but I am sure Sir Frederic Haines will not refuse now the testimony he then always gave most cordially.

16. I will mention a few incidents, most trifling in themselves, but which will show the way in which my work was looked upon by those who had the best means of judging.

17. Shortly before I left Bangalore to join the Abyssinian force I was in wretched health, so bad that it was doubtful whether I should be allowed to go on field service. General Haines often, as I well remember, remonstrated with me on what he thought was over-exerting myself, and urged me not to try to do so much. At one time I thought it right to offer to apply for sick leave (although this would have entirely put an end to my chances of going to Abyssinia), and wrote to Colonel Mesham to ask if the General would wish me to do so. The reply was (I am writing entirely from memory):—"The General hopes you will give him the benefit of your head as long as possible; in fact, he would rather have you without your legs than any one else, legs and all."

18. Again, in a letter from Madras, written just before my departure, I was told that Colonel Shaw-Stewart (who was then Under Secretary to Government) told my correspondent "that they had had the greatest difficulty in filling up my place at Bangalore, owing to the manner in which I had done the work there, and that General Haines said there never was such an Engineer Officer."

19. On my return from Abyssinia I thought it rather unjust that I should be posted to the Perryaur Project, and remonstrated with General Orr, urging the work I had done at Bangalore as a claim for being allowed to return there. General Orr said, "You may take as much credit as you like for the work you did at Bangalore, no one will be more ready to acknowledge its value than I will."

20. However trifling these facts may be, they at least show that the Secretary to Government and the General Commanding the Division did not consider me to be chargeable with carelessness or neglect.

21. No; much bad work has been done at Bangalore and elsewhere, and will continue to be done, but the cause is not to be looked for in any neglect or unskilfulness on the part of the officers of this department, but in the false economy* which leads to a loss of 50,000 Rupees in bad work in lieu of an expenditure of 5,000 on sufficient superintendence, and it is surely unjust to cast upon officers who have striven with all their power to mitigate the evils of a faulty system, a responsibility which more properly rests with those who in defiance of warning persist in attempting to make one man do the work of three.

* The report of the Vellaur Bridge Committee is most likely now before the Government; they will find recorded there an instance of the working of this principle, more even than that which I had to contend against.

22. The moral weight of the order to which I am replying is lessened if not destroyed by its having been issued without the officers concerned having been allowed to say a word in their own behalf. Still a formal charge of "carelessness and neglect of duty" is too serious to be allowed to pass unnoticed, and I hope that the facts I have mentioned will lead the Government to modify something of the censure they have thought fit to pass upon me.

No. 323. From Major H. TULLOCH, R. E., to the Secretary to Government, Public Works Department, Madras, dated 34, Victoria Road, Kensington, 3rd October 1872.

I HAVE the honour to acknowledge the receipt of Proceedings of Government, No. 1,736, of the 22nd July 1872, in which the Government notice the amount of responsibility attaching to the several officers who are answerable for the design and execution of the Bakery at Bangalore.

2. The Government after reviewing the entire subject visit with their severest censure my want of discrimination and attention to my duties.

3. As the Government are under a complete misapprehension as to the facts of the case, I beg most respectfully to submit the following short and plain statement.

4. I am held chiefly to blame because I paid for work and materials to the extent of 37,000 Rupees out of a total expenditure of 87,000 Rupees. But the Government are evidently not aware that of this sum from 20,000 Rupees to 25,000 Rupees was not for *work done* but for *materials*—chiefly for logs of teak and for hundreds of joists kept in one of the barrack-rooms. The *work done* by me is not

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represented by more than about 15,000 Rupees or 20,000 Rupees. All this will be seen if my payment sheets are referred to. Thus, on the first head it appears that I am answerable for only a small portion of the work done, and this will be rendered still clearer by what follows.

5. *Secondly.*—Fault is found with me that I did not point the walls. Here the Government are evidently under the impression that the walls were in a state to be pointed. But I trust it is only necessary for me to say that when I left Bangalore *even the lower story was not finished.* This being the case, how could I point the walls. It would be as reasonable to complain of me that I did not build the upper-story walls properly. How could I build them till the lower story was finished, and so, in like manner, how could I point the walls when they are not ready to be pointed?

6. *Thirdly.*—Fault is found with the mortar and bricks. If these materials were bad, I am only answerable for as much of the lower-story* as was built by me, but for no more of the building. I cannot find anywhere in the Government order that objections have been taken to the lower-story. If the walls and arches

* The outer walls are not of brick but of stone, and these were built by me and no complaints are made regarding them.

put up by me are examined, I am confident they will be found to be sound, excepting such portions of the work as may have suffered for want of pointing, and the neglect to point the brick-work cannot, as I have already explained, be attributed to me. It is regarding the work of the upper-story that the Government mainly complain, and with this work I had nothing to do.

7. *Lastly,* I am censured for the tile work and especially for the trusses. It is impossible that, in issuing their order, the Government could have been aware that not one single tile was laid down by me, nor one single truss (either of iron or wood) made by me or even commenced by me. Even the upper-story walls were not built by me. Considering then that the Government in their order expressly state that "*to defective construction of the timber trusses was, mainly due the dangerous state of the main building which has led to its being dismantled,*" and considering that I had nothing in the world to do with the construction of those trusses—that I was answerable only for the designing of them, regarding which the Government themselves admit there was "nothing absolutely faulty." Considering all these facts, I ask plainly, but most respectfully, can the Government visit me with their severest censure.

8. What I am responsible for to the Government regarding the Bangalore Bakery is—for the designs and for the general arrangements of the buildings, regarding which I took a great deal of trouble in consultation with the Commissariat authorities, and for the construction of the skeleton of the lower-story. I am not responsible for the pointing, or plastering, or finishing work of any kind, nor for the neglect to do these works, inasmuch as the buildings were not sufficiently advanced in my time to admit of my having them done. I am not responsible for any of the upper-story walls and of course for no portion of the roof. Lastly, I am not responsible at all for the chimney which was not built by me. I refer to the chimney lest anything should happen in the future and blame be attached to me.

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REFERRED to the Superintending Engineer, 5th Division, for report.

(Signed) G. W. WALKER, Colonel, R. E.,

Secretary to Government.

2nd November 1872.

No. 324. From Major J. O. MAYNE, R.E., Superintending Engineer, Hyderabad Public Works Department, to the Secretary to Government, Public Works Department, Madras, dated Bolarum, — October 1872.

IN continuation of my letter No. 2,178, dated 6th August last, I have now the honour to report that I have received, through the Superintending Engineer, 5th Division, Madras Public Works Department, the following papers connected with the Bangalore Bakery:—

Proceedings, Madras Government, P. W. D., No: 275, dated 15th May 1871.

" " " " 66, " 6th July "
" " " " 32, " 3rd Oct. "
" " " " 347, " 20th Dec. "

Extract from Monthly Progress Reports connected with the Bakery from January to July 1868 inclusive. Copy of Superintending Engineer's letter is attached.

2. From these I gather as follows, namely,—

(1.) That as regards the work done during my tenure of office as Executive Engineer, Bangalore, during 1868, what I stated in my previous letter was tolerably correct.

(2.) That the first intimation of any precautions being required for the safety of the building was reported to the Government only in May 1871, or nearly two years after I left the station.

(3.) The Superintending Engineer, Colonel Foord, R.E., who was my Superintending Engineer in 1868, and inspected the division whilst I was at Bangalore, states that he did not make any report on the Bakery in 1868 and no report was made to him of the use of bad materials, from which it may reasonably be inferred that there was nothing at that period to report in connection with the buildings. In my previous letter I mentioned that I had recollection of bad materials having been put into the work being alluded to, but could not trust to my memory. I must have been mistaken, otherwise I should certainly have mentioned the fact to the Superintending Engineer on his inspection.

(4.) From Proceedings No. 347, dated 20th December 1871, containing the report of a Committee appointed by the Government to report on the Bakery, I learn that the principal work condemned is that in the walls of the main building, with which I had nothing to do. In paragraph 7 of the Committee's report I gather that it was only in August 1871 that the Executive Engineer became at all anxious about the building, showing that the signs of weakness were only gradual.

In statement attached to Committee's report there is an error, as I did not join the division till February 1868. I was then about four and a half months daily expecting, as I before stated, to be removed. My work was confined to the following:—Finishing a few ovens and flooring in front of ovens and asphaltting

no communication of any kind has ever been

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upper rooms; completing the chimney, and some trifling work to roofing of end room. I only paid about Rupees 5,000 in all during the four and a half months owing to the absence of the Contractor, Mr. Lee, who was supposed to be in Madras purchasing timber or iron (I forget exactly which).

3. As before stated, to the best of my belief at the time I was at Bangalore there was nothing to report against the building; and now I have had before me all the papers published on the subject, there is nothing to show that there were any signs of weakness at that time, and my Superintending Engineer at the time saw nothing to report. I trust therefore His Excellency the Governor will be pleased to direct the withdrawal of the charge against me in Proceedings No. 333, dated 22nd July, of neglect of duty in not reporting on the building.

4. His Excellency the present Commander-in-Chief of Madras and a Member of the Government was commanding the Mysore Division at the time I was at Bangalore in 1868, and I feel certain that if His Excellency the Governor will be pleased to make a reference to him, he will admit my zeal and anxiety during that time to secure nothing but good and sound work, and he might be able also to confirm my statement that at that period there was no cause of anxiety regarding the building.

From Colonel E. A. FOORD, R. E., Superintending Engineer, 5th Division, to Major J. O. MAYNE, R. E., Superintending Engineer, Hyderabad Public Works Department, dated Camp at Salem, 21st September 1872, No. 212.

WITH reference to the last paragraph of your letter of the 6th of August, to the Secretary to Government, Madras, I have the honour to inform you that I did not make any report on the Bakery in 1868, and no report of the use of bad materials was made to me. I forward a letter from the Executive Engineer, Bangalore, enclosing extract from the statements of works in progress from January to July 1868 inclusive; also copies of the following orders of Government, which I request you will return to me when no longer required:—

1 Letter from Executive Engineer, Bangalore, with one Extract.
1 G. O., dated 15th May 1871, No. 1,338.
1 " " 6th July " " 1,783.
1 " " 3rd Oct. " " 2,513.
1 " " 20th Dec. " " 3,203.

15th May 1871, No. 1,338.
6th July " " 1,783.
3rd Oct. " " 2,513.
20th Dec. " " 3,203.

The plans of the Bakery were forwarded some time ago to Government and have not been returned. A drawing of the trusses used will be found in Plate VIII. of Tredgold's Carpentry, edition 1853.

I have stated that there was nothing defective in the design of the trusses, whatever there may have been in their construction. The same kind of trusses had previously been put up in the roof of the engine-house, and they are in perfectly good order at the present time.

REFERRED to the Superintending Engineer, 5th Division for report, with reference to Captain C. J. Smith's letter No. 4 of 2nd September.

6th November 1872.

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

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No. 325. From Colonel E. A. FOORD, R. E., Superintending Engineer, 5th Division, to the Secretary to Government, Public Works Department, dated Cuddalore, 21st November 1872, No. 193.

I HAVE the honour to offer the following remarks on the letters of Major Mayne and Captain Pennycuik, received with the Under Secretary's letter of the 2nd September, No. 4, and Major Tulloch's letter and Major Mayne's second letter received with your endorsement of the 6th November.

2. Major Tulloch has shown very clearly that he is not responsible for the bad work in the walls or roof of the upper story of the Bakery, for during the time he was Executive Engineer at Bangalore only the lower-story was in progress. It is mentioned, however, in the report of the Committee that the mortar used in the foundation was of inferior quality, and that the bricks in the main walls of the lower-story were of an inferior kind. Major Tulloch took great pains in the preparation of the plans for the building, and the Contractor, Mr. Standish Lee, certainly knew the difference between good work and materials and bad.

3. Major Mayne was not responsible for the bad work in the main walls of the building or in the trusses, as they were completed before he came to Bangalore. He was there only four and half months, and the building did not show any symptoms of failure till nearly two years after he left.

4. The walls of the upper-story were built and the trusses put together in 1867, during the time Captain Pennycuik was Executive Engineer. The expenditure that year on works at Bangalore was 3,15,000 Rupees. Proper supervision of the large number of works in progress was rendered impossible by the enormous amount of office work that occupied the time of the Executive Engineer. Captain Pennycuik has not overstated the case in his letter.

5. A circumstance that has lately come to my knowledge is calculated to throw light on the bad work in large contract buildings at Bangalore and elsewhere. I have received a copy of a decree of the Court of the Deputy Superintendent at Bangalore, in a suit where the plaintiff and defendants were contractors for a portion of the hospital buildings on the Race-course at Bangalore. The accounts of the Contractors were produced in Court, and it is mentioned in the decree that "Rupees 885 are alleged to have been paid on six occasions to Overseer Arunachellum Moodelly." This Overseer was also employed on the Government Bakery. The Overseer denies that he had any dealings with the Contractors, or that he ever received any money from them. The entry of this Overseer's name in the Contractor's accounts is not of itself a proof that the Overseer received any money, but it indicates a possible cause of the general badness of contract work.

No. 326. ORDER THEREON, 15th February 1873, No. 490.

ESTABLISHMENT, No. 24.

In these letters Major Tulloch, Captain Pennycuik, and Major Mayne protest against the degrees of censure passed on them by the Government in Order No. 1,736, of 22nd July 1872, and the apportionment of their respective shares of responsibility for the admitted defects of the Bakery at Bangalore.

No communication of any kind has ever been

*Proceedings of the Madras Government, Public Works Department,
15th February 1873.*

2. As stated in the above order, it is a clearly established fact that to the faulty construction of the timber trusses was due the dangerous state of the main building. And not until the effects of such faulty construction began to show (nearly three years after they were put up) to an extent which necessitated the adoption of measures to obviate danger, did the fact of bad materials having been used throughout the work become patent.

3. That bad workmanship, and the use of bad material, were confined to the upper-story of the building, as maintained by Major Tulloch, cannot be admitted.

4. In the special report recorded with G. O., No. 3,203, of 20th December 1871, it is expressly stated that the mortar used throughout the building is of very inferior quality; and that the main walls of the lower story were built of a very inferior kind of brick, and not faced with table-made bricks as provided in the estimate. Paragraphs 15 and 16 of the report also condemn the stone verandah walls, and paragraph 17 the pillars and beams supporting the upper-story. And in Superintending Engineer's letter No. 171, of 30th October 1872, the work in the walls of the lower-story is described as nearly if not quite as bad as in the upper, so that the entire Bakery would have to be rebuilt.

5. As regards Major Mayne it would appear that his memory did not fail him with reference to allusions to use of bad materials having been made before his time, inasmuch as no less than 26 memoranda are stated in Executive Engineer's letter No. 921, of 12th November 1868, to have been recorded between April 1867 and June 1868 complaining of slowness of progress made, or bad quality of materials used, in works executed by Mr. Lee. It is also mentioned in the same letter that his successor's attention was called to the paltry style of brick-work in the body of the building. And the Superintending Engineer's letter No. 157, of 25th November 1868, alludes to the walls not having been built in accordance with the estimate.

6. Still, the main fact has to be kept in mind (as stated in paragraph 2) that to the faulty construction of the timber trusses was due the dangerous state of the main building. Their design has been proved by Colonel Foord not to have been defective; and the effects of their imperfect construction forced themselves on notice so gradually that an interval of upwards of three years elapsed between Major Mayne's departure from Bangalore in May 1868 and August 1871 when his successor became so anxious about the building as to call for a Committee on it. The inference is that the defects of the materials used were not in themselves so great as to have endangered the building, had the workmanship of the trusses been such as to obviate the thrusts under which the walls yielded.

7. The fact of his having put up the trusses being admitted by Captain Pennycuik, it follows that he was answerable for their defects, but for which the building might have answered its purpose in spite of other shortcomings. And it appears to His Excellency the Governor in Council that these defects of construction are clearly attributable to "neglect of duty" on his part, in that the contractor was not supplied with sufficiently detailed drawings of these trusses of unusual pattern; and to "want of care" in seeing that their component parts were such that, when accurately fitted together, each would do the duty it was theoretically intended to bear. His Excellency in Council is willing to admit, in addition to the plea of inexperience already allowed, that of an amount of work and responsi-

*Proceedings of the Madras Government, Public Works Department,
15th February 1873.*

bility disproportionate to Captain Pennycuik's standing and position at the time. His charge against the Government, of neglect to attend to his calls for assistance, is hardly borne out by his own admission, that instead of two Overseers that were asked for two Supervisors were supplied; and the fact that in June 1867 the additional Office Establishment asked for was sanctioned. And Captain Pennycuik is reminded of his own expression in letter No. 1,019, of 22nd March 1867, that "there is hardly any limit to the amount of work which an officer can superintend in a station like this, provided he has only a sufficient subordinate establishment;" which, as above noted, appears to have been supplied him.

8. In the general remarks of paragraph 2 of the Government Order No. 1,736, of 22nd July, is to be found the clue to the cause of the disaster which has befallen the building in question, namely, undue reliance on the competence of the contractor, not only to supply good materials and workmen, but to ensure accurate compliance with a design of which sufficient details were not supplied him. An hour or two devoted, in personal communication with him, to the explanation of the principles of the truss to be used, and of the detailed drawings with which he ought to have been supplied, would have been much more effectual towards securing good work, than the threat to hold the contractor responsible for the consequences of any error or omission in the drawings actually supplied him, which appears to have been relied on.

9. On final review of all the circumstances of the case, His Excellency the Governor in Council declines to modify the blame assigned to Major Tulloch and Captain Pennycuik.

10. But inasmuch as no work affecting the stability of the building was executed by Major Mayne (and Captain Wood), and the effect of the defective construction of the trusses did not show themselves for nearly three years after the former gave up and the latter assumed charge, His Excellency in Council is willing to absolve those officers from blame in not having reported earlier on the bad workmanship and use of bad materials which late reports have made known.

11. His Excellency the Governor in Council notices with much displeasure the unbecoming tone of Captain Pennycuik's letter, paragraphs 2 and 22.

12. This is not the first occasion on which Captain Pennycuik has departed from the proper and recognized style of official writing. He will be informed that a repetition of this offence will leave His Excellency in Council no alternative but to remove Captain Pennycuik from employment under Government.

(True Extract.)

Colonel, R.E.,
Secretary to Government.

To Major J. O. Mayne, R.E.
„ Major H. Tulloch, R.E.
„ Captain Pennycuik, R.E.
„ Captain Wood, R.E.
„ Colonel Foord, R.E.

Ed. S. T. Austin.

no communication of any kind has ever been

N^o 98.

Superintg. Engrs. Office, 5th Divⁿ
Camp Salem 17th August 1872

From

The Superintending Engineer
5th Division

To

The Secretary to Government
Public Works Department.

Sir,

The report of the Committee on the condition of the Government Bakery at Bangalore having been made while I was in England on furlough and the Proceedings of Government of the 22nd July N^o 1736 having reached me before my visit to Bangalore, I have deferred till now any report of my own on that work. Having now inspected so much of the building as is standing, and the materials of the portion taken down, I beg to forward the following explanation.

2. As regards the trusses, I submit there was not any defect or any novelty in the design, which may be seen in Fredgold's carpentry

no communication of any kind has ever been

carpentry and the description of it in that well known Standard work is as follows: "The advantages of this roof consist in the small number of joints in the truss, in being able to support the tie beam at any number of points, in admitting of a firm and simple connection with the tie beam and in avoiding the ill effects attending the shrinking of king and queen posts." The very same kind of trusses had been previously adopted for the roof of the engine house at the Ullsoor rock. No difficulty was experienced in putting them together, and they are perfectly sound and good at the present time.

3. That the contractor was not supplied with working drawings, I attribute to Captain Tulloch's transfer from Bangalore. But the contractor could have obtained any information he required, or any drawings either of the wooden trusses of the upper story or of the iron roof of the machinery room, by applying to the Executive Engineer. Or, he might have seen every detail of construction of the trusses by going.

2
going to the Engine house at the Ullsoor Rock. The trusses of the Bakery have undoubtedly been very badly put together, and their failure is due to the bad workmanship and not to faulty design. I have no recollection of having seen the trusses being put together at the site of the bakery, or of having seen them at all till they were in their places in the roof. They did not show any symptoms of failure till a considerable time had elapsed.

4. It was my practice to visit Bangalore several times during the five or six months of each year that I was in the Salem District, but during the rest of the year, while in South Arcot, I was too far off to go there.

5. In 1866 I went to Bangalore five times between July and October. During those months Captain Tulloch was Executive Engineer, and he was reporting every month most favorably on the building, of which the lower story only was in progress, and continued to do so till his transfer in February 1867, and I did not myself notice any bad work.

6. I did not again visit Bangalore till

no communication of any kind has ever been

till July 1867 and I was there the whole of that month and to the 6th of August. By that time the lower story of the Bakery had been completed and the upper story commenced but was making slow progress. I was at Bangalore also from the 22^d to 26th of October and according to the progress Report for that month the upper story was then completed with the exception of flooring and plastering.

7. In 1868 I was at Bangalore six times between June and December. There was then not very much remaining to be done, but the building was making very little progress, and the work had to be taken out of the contractors' hands in October.

8. Having lately inspected the building I cannot but admit that the materials and workmanship of the upper story must have been of the very worst description, and I cannot understand how it was not brought to my notice or how I did not at the time observe it, though a period of six months necessarily elapsed between some of my

3
my visits; but I must express my deep regret for not having observed it. Captain Tullock made arrangements for the Bakery being built by a perfectly competent contractor, but he, after ^{some} progress had been made with the building, accepted an appointment at Madras, and the work fell into the hands of contractors who have proved to be both incompetent and dishonest.

I have the honor to be,
Sir,
Your most Obedient Servant.

E A Mord Col, R.E.
Superintg. Engineer, 5th Division

no communication of any kind has ever been

No. 2178 G.M. of 1872.

From

The Superintending Engineer
Hyderabad P.W. Department.

To

The Secretary to Government
Public Works Department
Madras.

Supg: Engineer's Office, Bolanur 6th August/72
Sir,

I have the honor to acknowledge the receipt of the Proceedings of the Madras Government P.W. Department. S. 33 dated 22nd July 1872 on the failure of the Government Bakery at Bangalore. 1. In para 3 thereof the Madras Government holds me to blame for not reporting on the condition of the building during my short incumbency of the Office of Executive Engineer at Bangalore in 1868, and imply that I ought to have taken some steps to improve its construction. 3. The receipt of these Proceedings is the first intimation that I have received of any failure having occurred in connection with the building, and even now I am not aware of what has actually occurred.

No communication of any kind has ever been

Acknowledges receipt of Proceeding.

Ans: of blame imputed 1st time by Madras Govt.

Compliment of him condemned without affectation of defending himself

1872 2nd August
1872 19th July 1872
Office of Superintending Engineer
Hyderabad

The Secy to Govt.
P.W. Dept.

Dated 19th July 1872
No. 19th July 1872
S. 33

Offering explanation regarding the design of the house at the Government Baking

Ob 328.

C. 3024/173

Surgeon to the Madras Govt.

been made to me on the subject, and I suddenly find myself condemned without a hearing.

In the S.M. Code of the Government of India it is laid down that whenever any charges are brought against an Officer of the Public Works Department, the first thing to be done is to forward him a complete record of the case, as far as it concerns him, and call on him for any defence he may wish to offer.

This custom does not appear to prevail in Madras, but I trust His Excellency the Governor in Council will be pleased to admit that such a course would only have been just towards me, and I much regret that I should have been condemned without an opportunity of defending myself.

4. I cannot trust to my memory sufficient to offer at once any complete defence for not having made any report on the building, but I feel certain that, if I am furnished with the papers I require, that I shall be able to satisfy His Excellency the Governor in Council that the censure passed on me is not warranted by facts. I will however state a few circumstances from memory only, which may therefore be liable to slight

asserts that I reported on such points at Benjapur that appeared necessary.

No complete defence can be submitted trusting to memory only.

corrections, but which will I trust be sufficient to induce His Excellency to direct the papers and information I require to be furnished to me.

5. In the first place I would remind the Madras Government that I was posted to Bangalore against my will in 1868, (vide records of your Office) and from the date of my joining I had every reason to believe that I should have been again relieved any day, and I never expected to remain there more than a week together, which, in a great measure, led me to confine my duties to keeping works going and not taking up any important question, unless feeling that there was good cause. However, when I saw necessity I did so, instance the Ulloor Water Supply scheme which I reported on. Mr. Lee's contracts and I made several reforms in the supply of materials at the New Cavalry Barracks, and I feel certain had any necessity been apparent I should have reported also on the Bakery.

The remark in para 8 of Proceedings that I took no steps "beyond getting a formal contract drawn up with Mr. Lee, more with a view it would appear, to ensure speedy construction than to

improve

"improve its construction" strengthens me in the feeling that had I seen any prospects of failure I should have taken some steps to improve the building. In fact I did all that occurred to me as necessary - I believe I know had from good work as well as most Officers of the Department, and I had no reason for concealing anything.

6. It is difficult to recall to memory exactly what took place in connection with the building whilst I was in charge. To the best of my recollection very little was done during that time as the works were delayed by the absence of the Contractor and in waiting for the Machinery, and my work was confined to finishing a few ovens, completing the chimneys, and laying the stone and Asphaltic pavings on ground floor and upstairs. Nothing was done to the two rooms at the last end of building for the Machinery.

To the best of my recollection no defects of any kind showed themselves during my tenure of Office.

7. I have some recollection of allusions to bad materials having been used by Mr. Lee, but this was not outwardly apparent, and more, I can say

What took place in connection with the building during my incumbency in 1868

Reports of bad materials - but nothing could be ascertained by my reporting them

say, were used whilst I was in charge and no defects were apparent in consequence of the use of those materials. And I hope it will be admitted that where no defects are apparent it is not the duty of each successive Executive Engineer assuming charge of a work to be opening it and looking for bad work.

I am not certain that the fact of these bad materials having been used had not been reported to the Government or at least to the Superintending Engineer, and under above mentioned circumstances I cannot see that I had anything to report in connection therewith.

Nothing apparent to justify my report on roof.

8. From para 2 of Proceedings I observe that the dangerous state of the main building which has led to its being dismantled was mainly due to the defective construction of the timber trusses, but that there was nothing absolutely faulty in the roof design. Now I had nothing whatever to do in putting up these trusses - to the best of my recollection they were up and the buildings were roofed in before my arrival at Bangalore - I had therefore no opportunity of examining the details of their construction and as

no signs of failure were apparent,
again I must hold myself free from
any blame for not reporting on them.

9.- Again not knowing the extent or
nature of the failures that have oc-
curred I am not in a position to
judge how far I could even possibly
have foreseen them.

10.- Under the above circumstances, I
have the honor to request that His
Excellency the Governor in Council
will be pleased to direct the following
papers and information to be furnished
to me, to enable me to offer a more
detailed explanation of my connection
with the building.

I require copies of all the reports
of the whole case with the plans of
the building and Monthly Progress Re-
ports of the building from January
to July (inclusive) 1868, and of any
notes made by myself or others on the
building as regards the bad materials,
during that period or previously;
and especially I should like to be fur-
nished with copy of my Superintending
Engineer's report after his inspection at
Bangalore in June or July 1868.

Particularly I require information as
to the extent and nature of the failures

not able to
have far
have far less
danger.

Details of papers
& information
required

8
Camp Pulehuathee
2nd August 1872

and when they first became apparent

I have the honor to be
Sir

Your most Obedient Servant

J. Somers Major R. E.
Superintending Engineer
Hyd. & M. Department

without affording them any opportunity of
explaining their respective shares in the
transactions referred to, or even, so far as
I understand, informing them that their
conduct was under consideration at

all-
3. With the part of the other officers

no signs of failure were apparent

8
Camp Palahuanhee
2nd August 1872

From Capt. J. Pennington R.E.
Executive Engineer

To The Secretary of Government
Public Works Department

Sir
I have the honour to acknow-
ledge the receipt of G.O. No 1735 of
the 22nd July 1872 -

2. It seems a strange proceeding
that an order of this kind, severely
censuring no less than six officers of all
ranks and ages, should have been issued
without affording them any opportunity of
explaining their respective shares in the
transactions referred to, or even, so far as
I understand, informing them that their
conduct was under consideration at
all -

3. With the part of the other officers

labore during 1800 years

my

4273

From

Major J. C. O. Llanos

Major J. C. O. Llanos

Major J. C. O. Llanos

Major J. C. O. Llanos

Major J. C. O. Llanos

Major J. C. O. Llanos

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Major J. C. O. Llanos

Major J. C. O. Llanos

Major J. C. O. Llanos

Major J. C. O. Llanos

Major J. C. O. Llanos

1. The writer joined

concerned in the business referred to, I have nothing to do, but with regard to my own share in it, I request the attention of Government to the following facts.

4. As to the roof trusses, I distinctly remember noticing and pointing out to Captain Tulloch, before the plans were sent in, what I considered to be a defect in the design; exactly what that defect was, or whether it was the same as has been found actually to exist, I cannot say from memory, without seeing the plans,

but the fact I remember perfectly - Captain Tulloch did not agree with me, and I certainly do not consider that I was bound to press my opinion, which was very likely to be wrong (perhaps was), against that of an officer, not merely my senior, but under whose orders I was actually serving at the time - Considering that the designs were afterwards passed both by the Superintending Engineer and by Government, I think I was justified in assuming that my objection was a mistaken one, and in putting up the

to the extent and nature of the failures

As the writer joined the business referred to in the year 1867, it is probable that the plans were sent in before that time.

trusses, as it appears I did without further question -

5. That there was plenty of bad work in this building (and I have no doubt in many others) I am not at all surprised to hear. Considering the circumstances under which I had to work, the wonder is that any decent work was ever done -

6. The executive work at Bangalore during 1867 was far heavier than it had been for some years before (certainly doubtless what it was when I was in charge of the range in 1864) and I believe, than it has ever been since - For nearly two years before I took charge there had been two officers there; in spite of this, owing no doubt partly to the fact that a good deal of Captain Tulloch's time had to be given to the completion of his Madras drainage project, and that my own was not as well employed as

I was employed almost entirely in the preparation of designs, of which that for the Baky was not one. I scarcely anything to do with executive work hardly ever with office

I think it might have been, the office work, especially as regards the submission of estimates, was in a state of absolute

failure during 1860 or thereabouts

chaos. The means were so heavy that when I took charge, such I had to do rather suddenly (if I remember rightly no regular transfer was ever made) I was absolutely appalled at their amount. Colonel Ingham, who was then (and I believe is still) Deputy Assistant Quarter Master General at Bangalore will no doubt be able to testify as to the state the correspondence between the two departments was in -

7. I know that for the first two months after I took charge I gave up every sort of amusement, I moved the office into another building, in order that I might live under the same roof with it, and I gave up even dining at a military mess, in order to be able to devote my evenings to work. I have often worked from six in the morning till ten at night, with only the shortest intervals for meals.

8. His Excellency the Commander in

work, and knew best to nothing I did was going on -

10
Chief was then commanding the Mysore Division, and to him I can confidently appeal, as to whether there was any idleness or neglect on my part. His Excellency is in a better position for judging on this point than even the Superintending Engineer, as with him, and his staff officer, Col. Ingham, I was in constant personal communication.

9. The Progress reports of the year will show how heavy the executive work was. Everything had to be done by "lump contract", not on account of any special orders of Government, but because it was a physical impossibility to get through the work in any other way. The careful supervision necessary for the prevention of reamplifying in contract work, especially in building, where bad work can be so easily and quickly hidden, was out of the question, and I think it is surprising that there was not more than there appears to have been.

10. Almost the first thing I did after

labors during 1800 were

Taking charge of the Range was to bring
to notice the insufficient establishment
belonging to it, and to ask for an increase.
If I remember rightly I asked for two
extra overseers and for an addition to
the office establishment, to save me from
the necessity of drawing plans and
making estimates with my own hands. See G.O. 1973
of 25th April 1877
This was refused, and Government sent
one instead of two European supervisors who
were for all practical purposes perfectly S.E. reply to
para 5 - that
order 2

useless*; and it was evident
that in the future I must
do my best to accomplish
what I knew to be an
impossible task.

* One of them went to
Munara on a few weeks,
and I think did not
come back till after I
had left.

11. Shortly after this, I was recommended
by Colonel Anderson for the post of auditor
of railway accounts, about to be vacated
by Captain Pilgote, but the Government
refused to allow the appointment, on
the express ground (as I was told) that they
specially wished me to retain charge of
the Bangalore range.

new extent and nature of the railways

12. I remember writing to Sir Arch, now
~~Anderson~~ then Private Secretary to
His Excellency the Governor, and who will
doubtless remember the circumstances,
and asking him to speak to General Br
upon the subject; I said that I was
specially anxious to be relieved from
Bangalore, because I thought an officer
of higher rank than myself ought to
hold the place; partly because he would
be in a better position for dealing with
the military authorities, but chiefly because
the work was too heavy for one officer, and

I knew that the Government would never
give me an assistant, as they might do
an Executive Engineer of higher standing.

13. If Colonel Wood or Colonel
Inesham is in the habit of keeping
semi-official letters, I think mine will
show how bitterly I spoke of the difficulty
I had to contend against, and I
say plainly that for one officer properly
to manage the whole of the work at

Bangalore during 1800 was

Bangalore five years ago, was a
perfect impossibility -

14. I have no desire to plead youth
or inexperience as an excuse for any
proceedings of mine; I had quite enough
experience at that time to know good
work from bad, and if bad work was
done during my tenure of office, it was
allowed to pass from causes which no
officer, not the most skilful or experienced
in the service, could have withstood
against - If the Government had charged
me with want of skill or want of judgment
I might have found a difficulty in meeting
the charge; but carelessness and neglect
are precisely the faults that any one
acquainted with the facts would say
were the very last of which I could be
accused.

15. Unfortunately no member of the
present Government, except His
Excellency the Commander in Chief was
in office at the time of which I am
writing; but I am sure Sir Frederic
Haines will not refuse now the testimony

of the nature of the failures

12
He then always gave most cordially -
16. I will mention a few incidents,
most trifling in themselves, but which
will show the way in which my work
was looked upon by those who had the
best means of judging -

17. Shortly before I left Bangalore to
join the Abyssinian force I was in wretched
health, so bad that it was doubtful whether
I should be allowed to go on field
service - General Haines often, as I well
remember, remonstrated with me on
what he thought was over exerting myself
and urged me not to try to do so
much - At one time, I thought it right
to offer to apply for sick leave (although this
would have entailed just an end to my
chances of going to Abyssinia) and
wrote to Sir Frederick to ask if the
General would wish me to do so - The
reply was (I am writing entirely from
memory) "The General wishes you will
give him the benefit of your head as
long as possible, in fact he would rather

Bangalore during 1800 war

have you without your legs than any
one else, legs and all".

18. Again, in a letter from Madras,
written just before my departure, I was
told that Colonel Shaw Stewart (who
was then under secretary to Government)
told my correspondent "that they had
had the greatest difficulty in filling up
my place at Bangalore, owing to the
manner in which I had done the
work there, and that General Hailes
said there never was such an Engineer
Officer".

19. On my return from Abyssinia, I
thought it rather urgent that I should
be posted to the Periar project, and
remonstrated with General Sir, urging
the work I had done at Bangalore
as a claim for being allowed to return
there. General Sir said "You may
take as much credit as you like for
the work you did at Bangalore, no one
will be more ready to acknowledge it

...nature of the failures

value than I will".

20. However trifling these facts may
be, they at least show that the
Secretary to Government, and the General
commanding the Division, did not
consider me to be chargeable with
carelessness or neglect.

21. No; much bad work has been
done at Bangalore and elsewhere,
and will continue to be done, but
the cause is not to be looked for
in any neglect or unskilfulness on
the part of the officers of this
department, but in the false economy

* The report of the Victoria bridge
committee is most likely now
before the Government; they will
find recorded there an instance
of the working of this principle, worse
even than that which I had to con-
tend against -

which leads to
a loss of 50,000
rupees in bad
work in lieu
of an expenditure
of 15,000 on

sufficient superintendence, and it is
surely urgent to cast upon officers
who have striven with all their power
to mitigate the evils of a faulty

system, a responsibility which more properly
rests with those who in defiance of warning
persist in attempting to make one man
do the work of three -

22. The moral weight of the order
to which I am replying is lessened if
not destroyed, by its having been issued
without the officers concerned having
been allowed to say a word in their
own behalf. Still a formal charge
of carelessness and neglect of duty
is too serious to allow to pass
unnoticed, and I hope that the
facts I have mentioned will lead
the Government to modify something
of the censure they have thought
fit to pass upon me -

I have the honor to be
Sir

Yours most obedient servant

Benjamin Disraeli
Secretary General

P. W. 1872 Dept. of
Public Works
From No 4279.

The Executive Engineer
in charge of Sindgubli

To
The Secretary to Govt
P. W. Department

Dated 2nd August 1872
Received 2nd Sept 1872.

P. W. 4277/72.
15th Feb 1873.
Reply to order of

Government No 1736 of
22nd July 1872 =

P. W. 5797/72.

No 322

22nd July 1872

34 Victoria Road

Kensington

3rd October 1872

To The Secretary to Government
Public Works Dept.

From Major A. Tulloch R.E.

Sir, I have the honor to acknowledge
the receipt of Proceedings of Government
No 1736 of the 22nd July 1872, in which
the Government advise the amount
of responsibility attaching to the several
officers who are answerable for the
design and execution of the Bakery
at Bangalore.
2. The Government after reviewing
the entire subject visit with their
everiest censure my want of dis-
crimination and attention to my duties.
3. As the Government are under
a complete misapprehension as to
the facts of the case, they must

respectfully to submit the following short and plain statement.

4. I am held chiefly to blame because I paid for work and materials to the extent of 37,000 Rs out of a total expenditure of 87,000 Rs. But the Government are evidently not aware that of this sum from 20,000 Rs to 25,000 Rs was not for work done but for materials - chiefly for logs of teak and for hundreds of pick kept in one of the barrack rooms. The work done by me is not represented by more than about 15,000 Rs or 20,000 Rs. All this will be seen if my payment sheets are referred to. Thus on the 1st head it appears that I am answerable for only a small portion of the work done, and this will be rendered still clearer by what follows.

5. 2^{ndly} fault is found with me that I did not paint the walls. Here the Government are evidently under the impression that the walls were in a state to be painted. But

* the outer walls are not of brick but of stone, and these were built by me and no complaints are made regarding them.

"The work in the 10 walls of the lower story is nearly if not quite done. I am not in the habit of the entire building will have to be retained."

By the Hon. Secy. to Govt. of Madras, 17th Dec. 1868.

I trust it is only necessary for me to say that when I left Bangalore ~~even~~ the lower story was not finished. This being the case, how could I point the walls. It would be as reasonable to complain of me that I did not build the upper story walls properly. How could I build them till the lower story was finished, and so, in like manner, how could I point the walls when they were not ready to be pointed?

6. 3^{rdly} Fault is found with the mortar and bricks. If these materials were bad, I am only answerable for as much of the lower story as was built by me, but for no more of the building. I cannot find anywhere in the Government Order that objections have been taken to the lower story. If the walls and arches put up by me are examined, I am confident they will be found to be sound, excepting such portions of the work as may have suffered for want of pointing.

Galore during 1868 what I stated in my

and the neglect to finish the brick-
work cannot, as I have already
explained, be attributed to me.
It is regarding the work of the
upper story that the government
mainly complain, and with this
work I had nothing to do.

7. Lastly, I am censured for the
tile work and especially for the
trusses. It is impossible that, in
issuing this order, the government
^{could have been} aware that not one single
tile was laid down by me, nor one
single truss (either of iron or wood)
made by me or even commenced
by me. Even the upper story
walls were not built by me. Con-
sidering then that the government
in their Order expressly state that
"the defective construction of the
timber trusses was mainly due
to the dangerous state of the main
building which has led to its being
dismantled", and considering that
I had nothing in the world to do with
the construction of those trusses -
that I was answerable only for the

designing of them regarding which
the government themselves admit
there was "nothing absolutely faulty".
Considering all these facts, I ask
plainly but most respectfully,
can the government visit me
with this severe censure.

8. What I am responsible for
to the government regarding the
Bangalore Bakery is - for the
designs and for the general ar-
rangements of the buildings, re-
garding which I took a great deal
of trouble in consultation with
the Commissioner and Authorities -
and for the construction of the
skeleton of the lower story -
I am not responsible for the
pointing, or plastering, or finishing
work of any kind, nor for the
neglect to do these works, in-
asmuch as the buildings were not
sufficiently advanced in my time
to admit of my leaving them done.

Bangalore 'during 1868 what I stated on my

I am not responsible for any
of the upper story walls and
of course for no portion of the
roof. Lastly I am not responsible
at all for the chimney which
was not built by me. I refer
to the chimney, but anything
should happen in the future and
blame be attached to me.

I have the honor to be

Sir

Your most obedt servant

H. Hullock

Major R. R. R.

No. 1000 19

P.W. 1872 Report
 From Major St. Tuller
 No 5258.

To The Secy to Govt.
 D. P. W.

Forwarded 3rd Oct/72
 Recd 30—

Explanation re-
 garding the Govern-
 ment Bakery
 at Bangalore.

P.W. 5797/72.
 No 490-15th Feb 1873

Reference to the S.S. 5.45.
 for Report -
 6.11.72

No 323
 e. 20 Jan/73.
 Report to Govt. 1st Nov 72

No 19
 of 1872

From Major J. O. Mayne. R.E.
 Supg. Engineer. M.D.
 To The Secretary to Government
 Public Works Department
 Madras

Copy Engrs Office Kolarum October 1872

In continuation of my letter No 2778
 dated 6th August last I have now the honor
 to report that I have received through the
 Supg. Engineer & Division Madras M.D.
 the following papers connected with the
 Bangalore Bakery.

Proceedings Madras Govt. M.D. No 275 dated 15th
 May 1871
 do do do No 66 do 6th
 July 1871 do do No 32 do 3rd
 October 1871 do do No 347 do 20th

December 1871
 Extract from Monthly Progress Reports
 connected with the Bakery from January
 to July 1868 inclusive - Copy of Supg.
 Engineer's letter is attached.

From these I gather as follows viz
 (1) That as regards the work done during my
 tenure of office as Assistant Engineer Ban-
 galore during 1868 what I stated in

my previous letter was tolerably correct.
(2) That the first intimation of any precautions being required for the safety of the building was reported to the Government only in May 1871 or nearly two years after I left the station.

(3) The Engr. Engineer Colonel Ford R.E. who was my Engr. Engineer in 1868 inspected the Division whilst I was at Bangalore states that he did not make any report on the Battery in 1868 and no report was made to him of the use of bad materials from which it may reasonably be inferred that there was nothing at that period to report in connection with the building. In my previous letter I mentioned that I had recollection of bad materials having been put into the work being attended to, but could not trust to my memory. I must have been mistaken, otherwise I should certainly have mentioned the fact to the Engr. Engineer on his inspection.

(4) From Proceedings No. 347 dated 20th December 1871 containing the report of a Committee appointed by the Govt. to report on the Battery I learn that the principal

principal work condemned is that in the walls of the main building with which I had nothing to do. In para. of the Committee's report I gather that it was only in August 1871 that the Executive Engineer became at all anxious about the building, shewing that the signs of weakness were only gradual.

In statement attached to Committee's report there is an error, as I did not join the Division till February 1868. I was then about 4 1/2 months daily expected as I before shaked to be removed. My work was confined to the following - Finishing a few beams - and flooring in front of ovens and asphaltting up two rooms - Completing the Chimney and some trifling work to roof of end room. I only paid about Rs. 5000 in all during the 4 1/2 months owing to the absence of the Contractor Mr. Lee who was supposed to be in Madras purchasing timber or iron (I forget exactly which).

3. So before shaked to the best of my belief at the time I was at Bangalore there was nothing to report against the building; and now I have had before me all the papers published on

on the subject there is nothing to show that there were any signs of weakness at that time and my sup. being in at the time some nothing to report. I trust therefore His Excellency the Governor will be pleased to direct the withdrawal of the charge against me in proceeding No. 333 dated 22nd July, of neglect of duty in not reporting on the building.

His Excellency the present فرماندار in Chief of Madras and a member of the Govt. was commanding the Mysore Division at the time I was at Bangalore in 1868, and I feel certain that if His Excellency the Governor will be pleased to make a reference to him, he will admit my zeal and anxiety during that time to secure nothing but good and sound work, and he might be able also to confirm my statement that at that period there was no cause of anxiety regarding the building.

I share the honor to be,
 Your most obed^t Serv^t
 J. R. M. M. Major R.E. Smith
 Sup. Engr. Mys. M.D.

No. 212.

Supg. Engrs Office, S. P. On 21
 Calcutta, 21st September/72
 The Inspecting Engineer
 5th Division

From,

To,

Major J. P. Mayne
 Inspecting Engineer
 Hyderabad S. P. Works

Sir,

Enclosures 5.
 Letter from P. of your letter of the 6th of August to the Secy.
 Engrs Bangalore
 with abstract.
 G. O. of 15th May 1871
 No. 1338.
 G. O. of 6th July 1871
 No. 1783.
 G. O. of 22nd Oct 1871
 No. 2513.
 G. O. of 26th Decr 1871
 No. 3203.

With reference to the last para of your letter of the 6th of August to the Secy. to Govt. Madras, I have the honor to inform you that I did not make any report on the Battery in 1868, and no report of the new of bad materials was made to me. I forwarded a letter from the Ex: Engrs Bangalore enclosing abstract from the statements of works in progress from January to July 1868 including also copies of the following orders of Govt. which I request you will return to me when no longer required.

15th May 1871 No. 1338
 6th July 1871 No. 1783
 22nd October 1871 No. 2513
 26th December 1871 No. 3203.

The plans of the Battery were forwarded some time ago to Govt. and have not been returned. A drawing of the trusses need will be found in Plate VIII of Bradgalt's Carpenter

Carpenby relation 1853.

I have stated that ^{there} was nothing defective
in the design of the trusses whatever there may
have been in their construction. The same
kind of trusses had previously been put up
in the roof of the Engine House and they
are in perfectly good order at the present
time.

I have Recd
Lef. E. A. Ford Coll. A. E.
Infg. Engrs 5th Division

True copy

from

P. M. 5443/12

10 102

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No. 193.

Supply Engrs Office, 5th Div.,
Cuddalore, 21st November 1872.

From The Superintending Engineer,
5th Division.

To The Secretary to Government,
Department of Pub. Works.

Sir, I have the honor to offer the following remarks on the letters of Major Mayne and Captain Prunjevic received with the Under Secretary's letter of the 2nd September No. 4, and Major Tulloch's letter and Major Mayne's second letter received with your endorsement of the 6th November.

Major Tulloch has shown very clearly that he is not responsible for the bad work in the walls or roof of the upper story of the Bakery, for during the time he was Executive Engineer at Bangalore, only the lower story was in progress. It is mentioned however in the report of the Committee, that the

Enclosures 4.
2 Letters from
Major Mayne
1 to from Major
Tulloch
1 to from Captain
Prunjevic to

P.W. 1872 Depto
of Public Works
No. 5443.

From Major J. Q. Mayne
Super. Engr. Hyderabad
C.A.O. P.W.D.

Dated 2nd Decr
Recd 8th Decr 72.
Encl. 1.

Requesting to
be relieved of the
blame imputed to
him in connection
with the supervision
and construction of the
Bangalore Bakery -

P.W. 5797/72.
1870-1871

Reference to the Sub-Engineer's
report for report, with reference
to Captain C. J. Smith's
letter No. 4 of 2nd Decr.

6.11.72

20/4/73 No 324

mortar used in the foundation was of inferior quality and that the bricks in the main walls of the lower story were of an inferior kind. Major Tulloch took great pains in the preparation of the plans for the building, and the Contractor Mr. Standish Lee certainly knew the difference between good work and materials and had.

3 Major Mayne was not responsible for the bad work in the main walls of the building, or in the trusses, as they were completed before he came to Bangalore. He was there only $4\frac{1}{2}$ months, and the building did not show any symptoms of failure till nearly two years after he left.

4 The walls of the upper story were built and the trusses put together in 1864, during the time Captain Dringnick was Executive Engineer. The expenditure that year on works at Bangalore was three lacs and fifteen thousand rupees. For supervision of the large number of

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works in progress was rendered impossible by the enormous amount of office work that occupied the time of the Executive Engineer. Captain Dringnick has not overstated the case in his letter.

5. A circumstance that has lately come to my knowledge is calculated to throw light on the bad work in large contract buildings at Bangalore and elsewhere. I have seen a copy of a decree of the Court of the Deputy Superintendent at Bangalore, in a suit where the plaintiff and defendants were Contractors for a portion of the Hospital buildings on the race course at Bangalore. The accounts of the Contractors were produced in Court, and it is mentioned in the decree, that Rupees 885 are alleged to have been paid on six occasions to Overseer Aranchellum Moodelly. This Overseer was also employed on the Government Bakery. The Overseer denies that he had any dealings with the Contractors, that he ever received any money from

In these letters
Major Tulloch, Captain
Pennycook and Major
Mayne protest against
the degrees of censure
passed on them by the
Government in order
No. 1736 of 22^d July 1872
and the apportionments
of their respective shares
of responsibility for the
admitted defects of the
Bakery at Bangalore.

As stated in the
above order, it is ^a clearly
established fact that
the faulty construction
of the timber trusses was
due the dangerous state
of the main building -
And not until the ef-
fects of such faulty
construction began to
show (nearly three years
after they were put up)
to a extent which
necessitated the adop-
tion of measures to
abviate danger, did
the fact of bad materials
having been used
throughout the work

I do not under-
stand this. If
it meant that
however well built
the walls had been,
the trusses would
have ruined the
building? As I
understand
the matter - the
entire building -
materials & all -
is to bid - that
no perfection in
any one part
justifies any other
part - If the trusses
only are wrong, why
build the walls?

J. O. S.

become patent.

That had workman-
ship, and the use of bad
material, were confined
to the upper story of
the building, as main-
tained by Major Tulloch,
cannot be admitted.

In the special Report re-
ported with G. O. No. 3203
of 20 December 1871 it
is expressly stated that
the mortar used through-
out the building is of
very inferior quality;
and that the main
walls of the lower story
were built of a very
inferior kind of brick,
and not faced with

table made bricks as provided in the Estimate.

Para 15 and 16 of the ^{small} report also condemn the stone, verandah walls; and para 17 the pillars and beams supporting the upper story.

The Contractor likewise alleges in his letter F of 7th January 1888 that the painting in question was commenced in Capt. Lillie's time.

and in Mr. Popham's letter No 171 of 30 Oct/72, the work in the walls of the lower story is described as nearly if

~~not quite as bad as in the upper, so that the entire Bakery would have to be rebuilt.~~
~~As regards Major Hayne it would appear that his memory did not fail him with reference to allusions to use of bad materials having been made before his time; inasmuch as no less than 26 Memoranda are stated in Executive Engineer's letter No 921 of 12 Nov/78 to have been recorded between April 1887 and June 1888 complaining~~

I would omit this -
We cannot take a Contractor's word against a Com. Missed Officers.

not quite as bad as in the upper, so that the entire Bakery would have to be rebuilt.

As regards Major Hayne it would appear that his memory did not fail him with reference to allusions to use of bad materials having been made before his time; inasmuch as no less than 26 Memoranda are stated in Executive Engineer's letter No 921 of 12 Nov/78 to have been recorded between April 1887 and June 1888 complaining

of slowness of progress
made, or bad quality of
materials used, in works
executed by Mr. Lee.

It is also mentioned
in the same letter that
his successor's attention
was called to the
poor style of brick-
work in the body of
the building - And the
Prof. Engineer's letter No. 157
of 25th Nov. / 68 alludes
to the walls not having
been built in accord-
ance with the estimate.

Still, the main
fact has to be kept in
mind (as stated in para 2)

imperfect

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that to the faulty con-
struction of the timber-
trusses was due the
dangerous state of the
main building. Their
design has been proved
by Col. Foord not to
have been defective;
and the effects of their
defective construction
forced themselves on
notice so gradually
that an interval of up-
wards of 3 years elapsed
between Major Mayne's
departure from Banga-
lore in May 1868, and
August 1871 when his
successor became so
anxious about the

building as to call for
a Committee on it.
The inference is that the
defects of the materials
used were not in them-
selves so great as to have
endangered the building,
had the workmanship
of the trusses been such
as to obviate the
thrusts under which
the walls yielded.

The fact of his having
put up the trusses being
admitted by Captain
Perrywick, it follows
that he was answerable
for their defects; but
for which the build-
ing might have

answered its purpose
in spite of other short-
comings. And it appears
to His Excellency the
Governor in Council
that these defects of con-
struction are clearly
attributable to "neglect
of duty" on his part, in
that the Contractor was
not supplied with suf-
ficiently detailed draw-
ings of these trusses of
unusual pattern; and
his "want of care" in seeing
that their component
parts were such that,
when accurately fitted
together, each would
do the duty it was
theoretically intended

to hear. His Excellency
in Council is willing
to admit, in addition
to the plea of inexperience
already allowed, that of
an amount of work
and responsibility dis-
proportionate to Capt.
Perry's standing
and position at the
time. His charge
against the Govern-
ment, of neglect to
attend to his calls
for assistance, is
hardly borne out by
his own admission
that instead of two
Overseers that were
asked for two Super-
visors were supplied.

I would not admit
Captain Perry's
defense of overwork. He
had the assistance he asked
furnished to him - and
he cannot pretend, that
if he had reported to
him that the Bakery was,
as he could have ascertained,
being built of bad materials
under a contractor who was
careless or incompetent, that
it would require special super-
vision on his part. He
should not have
regarded such a report
I would put this more
briefly and decidedly than
in the draft. M

30
and the fact that in
June 1867 the additional
Officer establishment
asked for was sanctioned.
And Capt. Perry's
is reminded of his own
expression in letter
No 1019 of 22nd March 1867
that "there is hardly any
limit to the amount
of work which an Offi-
cer can superintend
in a station like this
provided he has only
a sufficient subordinate
establishment" which,
as above noted, appears
to have been supplied
him.

In the General Remarks
of para 2 of the Government

Order No. 1736 of 22^d July
is to be found the clue
to the cause of the
disaster which has
befallen the building
in question, viz: undue
reliance on the compe-
tence of the Contractor,
not only to supply
good materials and
workmen, but to
ensure accurate com-
pliance with a design
of which sufficient de-
tails were not supplied
him. An hour or two
devoted, in personal
communication with
him, to the explanation
of the principles of the
truss to be used, and

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of the detailed drawing
with which he ought to
have been supplied,
would have been much
more effectual towards
securing good work,
than the threat to hold
the Contractor responsible
for the consequences
of any error or omission
in the drawing actually
supplied him, which
appears to have been
relied on.

On final review of
all the circumstances
of the case His Ex-
cellency the Governor in
Council is ~~forced to~~
~~the conclusion that~~
declines to modify
little if any modification

of the ~~degree~~ of blame
applied
imputed to Major
Lulloch and Captain
Pennycook. in con-
nection with it can
be made. But inas-
much as no work af-
fecting the stability
of the building was
executed by Major
Mayne (and Captain
Wood) and the effect
of the defective con-
struction of the trusses
did not show them-
selves for nearly three
years after the former
saw up and the latter
assumed charge. His
excellency in Council

I pass this on the
supposition that Major
Meade, could not in
Col Walker's opinion have
detected the defects, if
he had ~~expectedly~~ gone
thoroughly into the exami-
nation of the Bakery. otherwise
I would not relieve Major
Meade. This is a matter
for personal opinion &
I am content to abide by
Col Walker's opinion ^{on consideration} if he
acquits Major Meade.
J.D.S. PM
I would say nothing more
about Captain Wood who

has made no remonstrance
and who is the only officer who
comes out of the business with
credit

J.D.S.
I would omit this
It is of course as a rule
desirable that the fullest
opportunity should be given
to officers to defend themselves
but I cannot admit
that any of the persons
concerned were unfairly
dealt with or had
any right to suspect
unfairness on the
part of Mr. J.D.S.

The logical

is willing to absolve
these Officers from
blame in not having
reported earlier on the
bad workmanship and
use of bad materials
which late reports have
made known.

It is made a matter
of remonstrance by
these Officers that they
were not called on to
defend themselves. The
presumptive regret that
they should have had
occasion to feel aggrieved
by any apparent un-
fairness and want of
consideration shown
towards them. But
in their instructions

To the Super Engineer.
No 109 of 10 Febuary
Calling for a careful
search to be made for
all reports on the sub-
ject that may have
been submitted by
each Executive Engineer.
They were under the im-
pression that they had
taken sufficient steps
to ensure submission
of all information re-
quired to throw light
on the matter. And
they trusted to the Super
Engineer to supplement
such information
from his own know-
ledge and judgment.

Conclusion. Obed
these papers lead
is that all is
right & no body
has done wrong.

Major Bullock
I know that if he
could not print the
rolls - this seems a
valid plea. Also
that if the money he
submitted must not
be used - or for he
removes him self
but this does not
materially improve
his position for
all the mistakes
and the building
work done in his
time here bad. If
he had started
the work properly

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to a greater extent
possibly ^{it} ~~he~~ ^{he} ~~will~~ than he has done;
have more well: owing probably to
to I see his loss his having resumed
Relieve him from charge of his Division
the can do. in the middle of

Major Maize the inquiry. GMW

I think it better
himself - but with
this I leave
them to their ^{ed. W. H. H.} ~~own~~ ^{disposition}
decision.

Capt Perry, and his inability is
I think correctly set forth in the draft.
I think he should be given a
warning that if he again writes in
the coming & in his own absence
2 & 22 of his letter he will be re-
moved from the Dept.

I must confess that first
are these letters much to blame for
all this - Major Bullock ought not to

have been sent
 there in the line
 Drainage scheme
 in hand. and
 Capt Pennycook
 has much to
 say an officer.
 He seems to have
 looked very hard
 at the J.A.

The undersigned
 Capt Pennycook
 letter of the 22nd
 and that Captain
 is informed that
 his letter has been
 written in a manner
 that is not
 proper for an officer

His Excellency the
 Governor in Council notice
 with much displeasure
 the unbecoming tone of
 Captain Pennycook's letter
 paras 2 and 3.

This is not the first
 occasion on which Captain
 Pennycook has departed
 from the proper and
 recognized style of
 official writing. He

will be informed that
 a repetition of this offence
 will leave His Excellency
 in Council no
 alternative but to remove
 Captain Pennycook from
 employment under Govt.

will be informed that
 a repetition of this offence
 will leave His Excellency
 in Council no
 alternative but to remove
 Captain Pennycook from
 employment under Govt.
G.M.W.

30

- to Major J. O. Mayne R.E.
- " H. Tulloch R.E.
- " Captain Pennycook R.E.
- " Wood R.E.
- Col. Ford R.E.

Desp. 19/2/73.

Ofs 4017, 4277, 4279,
5-258, 5-44345797
Govt. of 1873 Madras.

PUBLIC WORKS.

Major J. C. Mayne B.C.



Dated

Recd.

Encl. 6

G.O. 15th July No. 490.

Nos. 320 @ 326.

Taken at Bangalore.

Copied orders on letters
from Majors Tallock,
Mayne, and Captain
Percywick protesting
against the censure
placed on them in F. 6.

No. 736 of 1872 in connection
with the Bangalore taken.