M.R.O. 1—77,006—8-6-37.

(1) Number of pages.

(2) Date of repair.

(3) Initials of the Referencer.

MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No. 2513 Press ~~Mis.~~

32-33

Dated 3-10- 1871.

Not to be folded or roughly handled

No. 32. Read the following letter from the Officiating Superintending Engineer, 5th Division, to the Secretary to Government, Public Works Department, dated Cuddalore, 5th September 1871, No. 126 :—

I HAVE the honour to forward a copy of a letter just received from the Executive Engineer, Bangalore, accompanied by a copy of the Proceedings of the Committee alluded to in the same, in order that no time be lost in acquainting Government with the state of the building at Bangalore used as a Bakery.

1 Copy of letter.
1 „ of Proceedings of the Committee.

2. It will be observed that the Committee consider the "Granary" unsafe, and the "Machinery Room" in very much the same condition, adding that they consider insufficient the measures sanctioned in G. O., No. 1,783 of 6th July 1871, estimate Rupees 660, for tying together the walls of the building by iron tie rods.

3. So far as I can gather from the Executive Engineer's letter and the report of the Committee, I consider it tolerably certain that the roof of the Granary must be removed.

4. In the meantime I have suggested that the roof be watched for further signs of yielding, and that no work be allowed under it, nor in any part of the building that would be endangered by its fall.

5. I have also requested him to forward as soon as possible, for the information of Government, at least an approximate estimate of the cost of removing and reconstructing the roof, and making good any other defects that may be observed in the building, and to intimate to me any definite recommendation that may be made by the Committee, as alluded to in paragraph 7 of his letter.

6. I think the proposal made by the Executive Engineer in paragraph 5 is worthy of attention, and would suggest that a Mechanical Engineer may be deputed to proceed to Bangalore, and report on the mooted point.

7. Finally, I would mention my having intimated to the Executive Engineer that, pending receipt of instructions from Government, I cannot venture to authorize the course proposed in his paragraph 7, namely, the removal of the roof of the Granary.

From the Executive Engineer, Bangalore, to the Superintending Engineer, 5th Division, dated Bangalore, 31st August 1871, No. 519.

THE state of the Government Bakery at this station has always given much cause for anxiety, and recently the defects appeared to be increasing so much that I entertained apprehensions for the safety of the building.

2. I accordingly requested Major-General Borton to apply to the Chief Commissioner of Mysore for the services of two experienced officers of the Public Works Department, and I beg to enclose copy of the Report of a Committee of which these two officers were members.

3. It is clear from this Report that it will be necessary to remove the roof of the whole of the upper storey of the building, in view to the walls being examined carefully, rebuilt if necessary, and the trusses themselves to be remade previous to the roof being replaced. As regards the machinery room, you will observe that the Committee have grave doubts whether the machinery, when set going, will not bring the building down. Personally I am of opinion that this sombre view is an exaggerated one.

4. You will remember that Government have already sanctioned the walls of this room being tied together, and this work is to be executed prior to the machinery being put in motion.

5. The machinery is already put up, and I would recommend that the Government should depute the best Mechanical Engineer at their disposal to inspect and report on it, as the amount of vibration will depend very much upon whether the machinery has been put together properly or not.

6. The engine, etc., has been erected by a Mechanic lately employed at the Madras Mint, but I think it is doubtful whether his report regarding the efficient fixing of the machinery should be taken as conclusive.

7. Major-General Borton intends, I believe, to call upon the Committee for some definite recommendation regarding the building. Meanwhile, I think it would be as well if I received your authority for commencing to take off the roof.

W. O. Form 263.

Proceedings of a Special Committee assembled at Bangalore on the 22nd and re-assembled on the 26th August 1871, by order of Major-General A. Borton, C.B., Commanding Mysore Division, for the purpose of examining and reporting on the state of the building used as the Bakery at the Commissariat Stores.

President.

Lieutenant-Colonel H. N. D. PRENDERGAST, V.C., R E.

Members.

Major W. R. JOHNSON, Acting Chief Engineer.

Major W. CHRYSTIE, R.E., Assistant Secretary to the Chief Commissioner, Department Public Works.

The Committee having assembled pursuant to order, proceed to examine the building.

The rooms were inspected in the following order :—

First.—Granary.—The plastered walls of this room show the following defects : (1.)—A slight horizontal crack on the inside of the west wall, running from window to window, at about 5 feet from the ground ; between the windows and the north and south walls the cracks take a diagonal direction upwards. These apparently are caused by the thrust of the roof of the Granary outwards on the top of the wall and that of the roof of the adjoining store-room inwards, the thrust of the latter being a little below the line of the crack.

(2.) Vertical cracks at all the corners of the room, apparently due to the lateral thrusts outwards of the rafters on the walls.

(3.) The north and south walls show a disturbance of the stove wall-plates (under the tie-beams), which have lost their position from the compression of the tie-beam and the outward thrusts of the rafters on the walls.

This disturbance is more evident on the south than on the north wall.

(4.) The framing of the trusses has been disturbed, owing to the flatening of the bow at the crown, whereby the centre suspending piece has been brought into compression, throwing a portion of the weight on the tie-beams ; thus the tie-beams have sagged and drawn the purlins from the rafters, which, therefore, remain supported at the ridges and on the wall-plates only, throwing the lateral thrust abovementioned on the walls. The effects of the depression of the crown of the bow is particularly evident by observation of the ridge over the last truss in the machinery room, where the plastering over the gable wall has been broken, and the end of the ridge depressed several inches.

(5.) The joints of several of the tie-beams have failed. This roof has stood since 1867, and might still stand for many years, but, with the defects enumerated above, the Committee do not feel justified in stating that it is safe.

Second.—Machinery Room.—Much the same remarks apply to the roof and walls of the machinery room as to those of the Granary. There are similar cracks at the four angles ; and the end of the ridge (as mentioned above) has sunk several inches, breaking away from the general line of the ridge over the cross wall. The east wall is cracked similarly, and from the same causes as the west wall. Until the machinery has been at work the amount of vibration it will cause cannot be known, but if it be as great as the Committee conceive it will be, they are unanimously of opinion, looking to the construction of this room, the dimensions of its walls, and the materials used, that it would be unsafe, and they do not think that the tying together of the walls, which has been sanctioned on the recommendation of the Executive Engineer, will strengthen the building sufficiently.

Third.—Lower Storey.—The Committee noticed cracks at the eight angles of the rooms in the wings under the ends of the verandah girders, but they attribute them to insufficient wall-plates, and do not think that the injuries are of importance.

The walls of the other rooms were found to be in good order.

(Signed) H. N. D. PRENDERGAST, Lieut.-Colonel,
President.

(Signed) W. R. JOHNSON, Major,
Officiating Chief Engineer.

(Signed) W. CHRYSTIE, Major,
Offg. Under Secretary to Chief Commissioner.

No. 33. Order thereon, 3rd October 1871, No. 2,513.

MILITARY WORKS, No. 2.

His Excellency the Governor in Council considers the condition of the Bakery at Bangalore to be such as to demand the fullest inquiry, and with this view he resolves to depute Mr. Grainger, the General Superintendent of Public Works Stores, to that station, and to direct that Captain Vertue, the Officiating Superintending Engineer, will make a thorough examination of the building, at as early a date as possible, in company with that Officer, and submit a full report on its condition, including the fixing of the machinery and whether any injurious effects may be apprehended from the vibration of the machinery when at work, together with the necessary estimate for carrying out such works as may be requisite to put the building in a safe condition. The Government wish to be furnished with full information regarding the dates at which the building was commenced and completed, the names of the Officers employed as Superintending Engineers and Executive Engineers during that period, and the dates of their respective nominations and transfers.

2. During the short period of Mr. Grainger's absence from Madras, Mr. Brosnahan, who has just returned from Europe, will take charge of the duties of the General Superintendent of Public Works Stores.

(True Extract.)

Captain, R.E.,
Offg. Joint Secretary to Government.

To the Superintending Engineer, 5th Division.
do., 3rd do.
" Controller of Public Works Accounts.
" Military Department.
" General Superintendent of Public Works Stores.
To Mr. Brosnahan.

Exd. S. T. Augustin.

No. 263.

Proceedings of a Special Committee assembled at Bangalore on the 22nd and re-assembled on the 26th August 1871 by order of Major General A. Burton C. B. Commanding Mysore Division for the purpose of examining and reporting on the state of the building, used as the Bakery at the Commissariat Stores.

President.

Lieut-Col: H. N. D. Prendergast V.C. R.E.

Members.

Major W. R. Johnson, Acting Chief Engineer.

Major C. Chrystie R. E. Asst: Secretary to the Chief Commissioner D. P. W.

The Committee having assembled pursuant to order, proceed to examine the building.

The rooms were inspected in the following order

(1st) Granary. The plastered walls of this Room shew the following defects. (1) a slight horizontal crack on the inside of the west wall running from window to window at about 5 feet from the ground, between the windows and the north

north and south walls. the cracks take a diagonal direction upwards. These apparently are caused by the thrust of the roof of the Granary outwards on the top of the wall and that of the roof of the adjoining store room inwards, the thrust of the latter being a little below the line of the cracks.

(2) Vertical cracks at all the corners of the room apparently due to the lateral thrusts outwards of the rafters on the walls.

(3) The north and south walls show a disturbance of the stone wall-plates (under the tie-beams) which have lost their position from the compression of the tie-beam & the outwards thrusts of the rafters on the walls.

This disturbance is more evident on the south than on the North wall.

(4) The framing of the trusses has been disturbed owing to the flattening in the bow at the crown whereby the centre king pinding piece has been brought into compression throwing a portion of the

on the tie-beams - thus the tie-beams have sagged and drawn the purlins from the rafters which therefore remain supported at the ridges and on the wall plates only, throwing the lateral thrust above mentioned on the walls. The effects of the depression of the crown of the bow is particularly evident by observation of the ridge over the last truss in the Machinery room where the plastering over the gable wall has been broken and the end of the ridge depressed several inches.

(5) The joints of several of the tie-beams have failed. This roof has stood since 1867 and might still stand for many years but with the defects enumerated above, the Committee dont feel justified in stating that it is safe.

(6) Second Machinery Room - much the same remarks apply to the roof & walls of the Machinery Room as to those of the Granary. There are similar cracks at the 4 angles and the end of the ridge (as mentioned above) has sunk several inches, breaking away from the general line of the ridge over the cross wall. The East wall

is cracked similarly and from the same causes as the west wall. Until the Machinery has been at work the amount of vibration it will cause, cannot be known, but if it be as great as the Committee conceive it will be - they are unanimously of opinion - looking to the construction of this Room the dimensions of its walls and the materials used, that it would be unsafe, and they do not think that the tying together of the walls which has been sanctioned on the recommendation of the Executive Engineer, will strengthen the building sufficiently.

3rd Lower Story.

1) The Committee noticed cracks at the 8 angles of the Rooms in the wings under the ends of the Verandah girders but they attribute them to insufficient wall plates, and do not think that the injuries are of importance.

(8) The walls of the other rooms were found to be in good order.

(signed) H. K. D. Prendergast Lieut. Col: President.

(signed) R. R. Johnson Major, Offg: Chief Engr.

(signed) W. Chrystie Major, Offg: Under Secty: to Chief Commissioner.

(True Copy)

(signed) H. M. Wood Capt. R.E.

Executive Engineer - Seeree Division

(True Copy)

Offg: Secy

No 514. Executive Engrs Office,
Bangalore, 31st August 1871.

From,

The Executive Engineer,

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3. It is clear from this report that, it will be necessary to remove the

is cracked similarly and from the same causes as the west wall. Until the Machinery has been at work the amount of vibration it will cause, cannot be known, but if it

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Enclosure No. 2 in Letter
No. 126 dated 25th Sept. Contd
1871 from the Actg. Supt. Govt.
Steam Dept. to the Secy.
to Govt. of B.P.W. —

P. W. 4248/71

(Signed) W. Chrystie Major, Offg. Under Secty. to Chief Commissioner.

(True Copy)

(Signed) H. St. Wood Capt. R.E.
Executive Engineer.

(True Copy)
General Barton

No. 571.

Executive Engineer's Office,
Bangalore, 31st August 1871.

From,

The Executive Engineer,
Bangalore.

To,

The Superintending Engineer,
5th Division.

Sir,

The state of the Government Bakery at this station has always given much cause for anxiety and recently the defects appeared to be increasing so much that I entertained apprehensions for the safety of the building.

2. I accordingly requested Major General Barton to apply to the Chief Commissioner of Mysore for the services of two experienced officers of the P. W. D. and I beg to enclose copy of the report of a Committee of which these two officers were members.

3. It is clear from this report that, it will be necessary to remove the

tion of the upper story of the building - in view to the walls being examined carefully, rebuilt if necessary and the trusses themselves to be remade previous to the roof being replaced. As regards the Machinery Room you will observe that the Committee have grave doubts whether the Machinery when set going will not bring the building down. Personally I am of opinion that this somewhat is an exaggerated one.

4. You will remember that Government have already sanctioned the walls of this room being tied together and this work is to be executed prior to the Machinery being put in motion.

5. The Machinery is already put up and I would recommend that the Government should depute the best Mechanical Engineer at their disposal to inspect and report on it, as the amount of vibration will depend very much upon whether the Machinery has been put together properly or not.

6. The Engine &c has been erected by a Mechanic lately employed at the Madras Mint but I think it is doubtful whether his report regarding the efficient fixing of the Machinery should be taken as conclusive.

7. Major General Burton intends I believe to call upon the Committee for some definite recommendation regarding the building. Meanwhile I think it would be as well if I received your authority for commencing to take off the roof.

I have the honor to be &c

(Signed) H. St. Wood Capt. R.E.,
Executive Engineer, Bangalore.

(True Copy)
James Burton Captain R.E.,
Offg: Superintending Engineer, 5th Div.

No 126. Inspector's Engineer's Office, 5th Division,
Carlisle 5th September 1871.

From, Captain James Verbrugge R.E.
Assistant Inspr. Engineer, 5th Division.

To, Colonel F. Harpendale R.E.
Secretary to Government, I.S. Department.

Sir,

Enclosures 2. I have the honor to forward herewith
letter of date a letter from Messrs Thomas Hall
1 Copy of Specification and Estimate
the Committee. Engineer, Bangalore, accompanied by a
copy of the Specifications of the Committee
attended to and the estimate - with order, Revd
on June the last on acquainting Govern-
ment with the state of the Building
at Bangalore under as Warrant.

2. Messrs Hall & Co have that the
Committee consider the Tenders unnecessary,
and the Machinery (Rotary) unnecessary
the same conditions, adding thereto
the usual sufficient the Buildings complete
complete in G.O. No 117 of 6th July 1871 Estimated
at Rs 3000 - for typing letters the walls
made Building by Messrs Hall & Co.

3 I have &c
[illegible]

Enclosure noted in letter
No. 126 dated 5th September
from the Asst. Engr. 5th Division
to the Secretary
Govt. of India.

P. W. 4248/71.

Executive Engineer's letter, and the Report
of the Committee, I consider it tolerably
certain that the Roof of the Granary
must be removed.—

2. In the meantime I have suggested
that the Roof be watched for further signs
of yielding; and that no work be allowed
under it, nor in any part of the Building
that would be endangered by its fall.—

3. I have also requested him to forward
as soon as possible, for the information
of Government, at least an approximate
Estimate of the cost of removing and
reconstructing the Roof, and making good
any other defects that may be observed
in the Building, and to intimate to me
any definite recommendation that may
be made by the Committee, as alluded
to in Para 7 of his letter.—

4. I think the proposal made by the
Executive Engineer in Para 5 is worthy of
attention, and would suggest that a
Mechanical Engineer may be deputed
to proceed to Bangalore, and report on the
mooted point.—

7.— Finally I would mention
my having intimated to the Executive
Engineer that, pending receipt of
instructions from Government, I cannot
venture to authorise the course proposed
in his Para 7- viz- the removal of the
roof of the Granary.—

I have the honor to be
Sir
Your most obedient Servant.

Colonel Pettie
Captain
Offg: Superintending Engineer,
5th Division.—

Letter from the Supg: Engineer of the 5th Division No. 126 dated 5th September 1871.

Circulated for orders.

From a considera-tion of the Committee's report and Lieut: Colonel Roberts' Memorandum printed with G. O. No. 1783, 6th July 1871, I am led to believe that the building in its present condition is unsafe owing to bad work in the construction of the roof; and the walls being also of inferior quality, the danger from

I would transfer an enquiry conducted by Mr. Grainger in conjunction with Capt. Vertue, into the state of the building generally, walls & roof. A report should be submitted to Govt. at once stating the dates at which the building was commenced & terminated, the names of the Officers employed as Sup. Engineers & Executive Engineers during that period & the dates of their respective nominations and removals. N

N

P. W. 1875 [illegible]
From The Supdg: Engineer, 5th Division
To, The Secy. to Government P. W. Departt.
Dated 5th / Recd. 8th September 71.
No. 126.
Enclosures 2.
Bakery at Bangalore.
Submitting, with observations, copy of a letter from the Ex: Engr. Bangalore with a copy of the Pro: of the Committee alluded to therein, on the state of the Government Bakery at Bangalore.
No. 2573 - 3 October /71.

Procdg. 6 July /71 No. 66-67

No. 32

6 Oct, 9 Sept /71 R 2/10/71.

the thrust of the roof is greater than it would otherwise be. I fear there is no help for it but to remove the roof preparatory to ascertaining whether the walls are sufficiently strong to carry a roof of the same design when reconstructed and better put together; or if any further precautions to ensure stability must be taken. Meanwhile it seems desirable that Mr. Grainger, who is I believe an experienced Mechanical Engineer, should be ordered to inspect the building in order to his reporting

whether the working of the Machinery would materially increase the risk of danger.

J. 13th Feb.

№ 6248

№ 2513 — 237

Under date the 3d Oct. 71.

His Excellency the Governor in Council considers the condition of the Battery at Bangalore to be such as to demand the fullest enquiry, and with this view he resolves to depute Br. Grainger, the General Superintendent of Public Works Stores, to that Station, and to direct that Capt. Verture, the Officiating Asst. Engineer will make a thorough Examination of the Land Brg. at as early a

date as possible, in company with that Officer, and submit a Bill Report on its Condition, including the fixing of the Machinery and whether any injurious effects may be apprehended from the vibration of the Machinery when at work, together with the necessary estimate for carrying out such works as may be requisite to put the building in a safe condition. The Govt. wish to be furnished with full information regarding the dates at which the building was commenced and completed, the names of the

Officers employed as Executive Engineers and Executive Engineers during that period and the dates of their respective nominations and transfers.

During the short period of Mr. Grainger's absence from Madras, Mr. Broughton, who has just returned from Europe, will take charge of the duties of the General Superintendent of Public Works Stores.

2nd Feb.

6

To
5 Supt 5th Div
" 2nd "
Controller
15 Mil Defts
1 Sec to Govt of P.W. Depts

Mr. S. Defts 3/10/71 Stores Co. Stores
Blue Mountains

C- No- 424

Govt. of {1871} Madras.

PUBLIC WORKS.

To The Superintending Engr
5th Division

Dated

Recd. Encl.

G. O. 3rd October No. 2513.

Nos. 32 & 33

Bakery at Bangalore

Deputing the Premises &
to make a thorough examination
of the Buildings in
conjunction with the Offg
Exec Engr & calling for the
Estimate for carrying out-
the required works & put the
Buildings in a safe condition
also appointing the Branchdam
& the Charges temporarily to Entitl
Head Engr & P. W. Stores