(1) Number of pages 116

(2) Date of repair -11-87

(3) Initials of the Referencer

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P. W. DEPARTMENT

G.O. No. / B.P. No. 399	Press. / Mis.
Dated 13. — 2 — 1886	198 .

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No 358.

399/1

From

The Sub Divisional Officer
Cannanore.

To

The Executive Engineer
West Coast Division

EXECUTIVE ENGINEER
21 MAR 88
NORTH ARCOT DIVISION

Dated Cannanore 14th November 1886.

Sir,

With reference to your telegram of the 10th Instant, I have the honor to report as follows:-

2. On the 10th Instant I proceeded to Tellicherry, to inspect the building (Munsiff's Court) but as I only received the telegram at 6 P.M. I could not inspect the building till the following day. On my inspection on the 11th, I found the tower portion of the building cracked, horizontally, longitudinally and spirally and after I had examined the whole of the structure I was compelled to advise the District Munsiff to vacate the building as it is in my opinion unsafe. I examined

the building again on the 12th Instant and found that some more cracks had appeared, and I then wrote officially to the District Moonsiff advising him to vacate the building - he informed me he wished to examine the buildings in the Fort with a view to occupying some of them; as he has referred the matter to the District Judge, I am not aware of what is intended to be done. I have as telegraphed ordered the turret to be dismantled as high winds are prevailing and the fall of the turret would cause great damage to the other portions of the building.

With regard to the cause of the cracks I can only come to the conclusion that the material obtainable at Tellicherry is unsuitable for lofty structures. The tower including the turret is 53 feet in height with walls 1½ feet thick with the exception of one side (the tower is octagonal) which is 2 ft thick. The turret is arched over and I am of opinion that the weight is too

979/2

too much for the walls and that the cause is the crushing weight on bad material. On examination I find the material is that commonly used in Tellicherry but is far inferior to the laterite used in Cannanore.

The turret and tower have been pointed not plastered and I fear the late heavy rains have saturated the stones and made them incapable of resisting the great pressure brought to bear on them.

I have &ca

Signed/ H. Webb
Sub Divisional Officer.

No 849.

Copy forwarded to the Superintending Engineer 4th Circle for information.

The District Moonsiff has been advised to vacate the building for the present and it is proposed to accommodate the Court in one of the vacant buildings in the Fort (late Jail) at Tellicherry.

A further report from the Sub Divisional Officer is awaited.

Signed/ Ross Thompson Col: R.E.
Executive Engineer

Camp Kuddivattam
28th November/85

No 375 Cannanore 23rd Nov/85.

From

The Sub Divisional Officer,
Cannanore.

To

The Executive Engineer,
West Coast Division.

Sir,

In continuation of My No 372 of the 21st Instant I have the honor to report as follows:-

The turret has been dismantled to the wall plate of the Record Room as shewn in the plan Sheet No 2 accompanying at "a" (the design of the turret was altered as shewn in red ink in Sheet No 7) I have for the present covered the opening of the tower with a Cadjan roof as I do not wish to dismantle the tower to the floor level of the building until I receive instructions from you. The walls marked with a × are cracked. The upper portion was plastered with Surki and showed no cracks whatever but from the bottom of the Cornice "C" to the ground level, the cracks as already represented appear, the walls are not plastered. In removing the masonry it was found that from the top of the turret to the Cornice at "C" the stones were perfectly dry and good but from that point downward the stones were perfectly saturated and were taken out piece-meal. I have the honor to solicit further instructions. The Court has not been vacated for what reason I can't state.

Return of the plans requested.

I have &ca
Signed/ H. Noble.
Sub Divisional Officer.

No 1480.

Dismantle everything that may be dangerous and then protect from weather by temporary roof &ca. The turret will be inspected shortly by the undersigned.

If the least danger is apprehended the occupants should again be warned to vacate.

Signed/ Ross Thompson Lt Col RE
Executive Engineer.

7th December/85.

No 668.

True Copy forwarded to the Superintending Engineer 4th Circle for information in continuation of this office No 649 of 28th November 1885.

Signed / Ross Thompson Col: R.E.
10th Decr/85. Executive Engineer
West Coast Dn

No 577.

Executive Engineers office
West Coast Division
Calicut 24th October 1885.

From
The Executive Engineer
West Coast Division

To
The Superintending Engineer
Fourth Circle.

Enclosures
3. Estimates.

Sir,

The District Judge of South Canara having brought to notice that the tower of the New District Munsiff's Court House at Puthur was leaking and that the walls of the record room were found damp inside, the

building was inspected by the Sub Divisl Officer who reports that the defects pointed out by the Judge are due to the building being by its situation exposed to the full force of the South West Monsoon and to the walls being of laterite pointed instead of plastered and that the rain is also forced through the venetian shutters in the turret and through the holes in the sides of the spiral. He suggests as the only remedy to plaster the walls and the tower outside, to lengthen the venetian of the ventilators in the turret and put thick ground glass in the openings of the spiral and accordingly submits the accompanying 3 alternative estimates of Rs 417, 530, and 833 with a recommendation that the second (Rs 530 for plastering with surki &ca) be preferred, as Portland Cement is not procurable in Mangalore and that it would take some 3 months more to get it from Bombay. The Scaffolding provided for is absolutely necessary for the Octogonal spiral and record room tower which are very lofty. I agree with this recommendation and request that the second estimate may be sanctioned.

2. The work can be carried out from the savings from the estimate for the Court house.

I have &ca

Signed/ C. Subrayachariar
Executive Engineer

The second estimate viz: for Rs 830 Sanctioned.

Initialled/ R. T.
1st Novr/85.

(True Copies)

E. Beatty Col. R.E.
Superintending Engineer, IV Circle.

No 491
WW.

Supg. Engineer's Office, IV Circle.
Coimbatore, 16 December 1885.

From

The Superintending Engineer,
Fourth Circle.

To

The Chief Engineer,
P. W. Department.

Enclosures 4
- 1 - Copy of Ex: Engr's Endorsement No. 649 of 25-11-85 on letter from Sub D: Officer, Cannanore
- 1 Endorsement No. 1480 of 9th Novr/85 on Sub [illegible] officer's letter No. 375 of 23d Novr/85.
- 1 Copy of the above Endorsement to S.E. No. 668 of 10-12-85
- 1 Copy of letter from E.E. W.C. Dn to Supg Engr: d/ 24/10/85 No. 577

4

Sir,

I regret having to report the failure of the Tower of the District Munsiff's Court at Tellicherry.

2. The building in question was built on the old Standard design issued with G.O. No 2294 W. of 6th September 1879. It was begun in March 1883 and finished in March 1884, while Mr J. P. Davidson was Divisional Officer of the combined West Coast and Coimbatore Division. When the work was begun Serjeant Webb was in charge of the Subdivision from March to June 1883, and subsequently June 1883 to March 1884, Mr Marjoribanks was Subdivisional Officer with Serjeant Webb as his subordinate.

3.

3. The tower, as appears from the Subdivisional officers report, as built is 53 feet high "with walls 1½ feet thick with the exception of one side, which is 2 feet thick."

According to the design the walls were to be 1½ feet up to bottom of turret, and those of the turret were to be one foot thick only.

4. As far as I can gather from the reports of the Subdivisional Officer, the turret was badly cracked probably from the material being porous and the walls so thin and unplastered; while the lower portion of the tower from the wall plates of the Record Room, about 32 feet above basement, was cracked but not dangerously, for the Supervisor dismantled the turret but not the tower awaiting instructions from the Divisional Officer, and covered the tower over with a Cadjan roof.

5. In para 3 of his letter No 358,x the Supervisor observes that "on examination I find the material" "is far inferior to the laterite used in Cannanore." Considering that Serjeant Webb was employed on the building from commencement to finish, he has been slow in making this discovery; Probably, if it had been reported at the time of Construction, and Mr Davidson had thought so, the tower would have been plastered.

x d/14 November 1886.

6. The reports give no information as to the state of the other buildings of the Court, which the Munsiff was recommended to vacate; probably the recommendation was merely given because the Court could not work without the use of the Record rooms which were in the Tower.

7. Mention is made of some alteration in the design; but this is not mentioned in the Completion Report, and it is not known what is referred to.

8. I have delayed this report greatly in expectation of a full and clear report from the Divisional Officer which is still awaited; and will be sent you as soon as it is received.

Lecam should go S.E. to [illegible] E.E. [illegible] [illegible] [illegible] report

9. There is only one other tower of this kind on the West Coast, that at the Puttur Court, which has shown no signs of failure

Dell 10874

From
The Supg. Engineer,
Fourth circle.

[illegible]

No. 2185 Cal 17-12-85

Dated 16th
Despd 17th } December/85

No. 491/W

Enc: 4.

District Munsiff's Court, Tellicherry:—

Reporting on the failure of the —; and promising a further report on the same.

No. 3/C.

379/8

Inspection notes by the Executive Engineer dated 21st November 1883.

EXECUTIVE ENGINEER 25 JAN 86 NORTH ARCOT DIVISION 56/6

District Munsiff's Court Tellichery.

Work done is good – and the building should if the contractor works properly be completed within the contract time..

The Court room has its trusses and wood work in position, in fact the entire building is ready for roofing except the terraced verandahs for which tiling is required. Doors and windows are all fitted and in position but shutters are not yet completed. About 2/3 of the rafters are ready and all the tiles for roofing. The flooring throughout is to be pitch composite and the material for this it is hoped will shortly arrive from Bombay. Lightning conductor is required for the tower and this it is proposed to do by means of slits, it will also I think be advisable to cut off the upper portion of the tower, as the upper frame work will I am afraid be a source of danger during the monsoon, plan of top of tower, as per original design, and as it is proposed to alter it are forwarded for approval, the sub-divisional officer has been told to do nothing more to this till he gets further instruction

SUPDG. ENGINEER'S OFFICE
No. 1 W.
1-Jany 86
P.W.
FOURTH CIRCLE

instructions.

There is an excess of Rs 450 owing to alterations in foundations ordered by me, and there may be some other excesses due to clearing, levelling &c. and also to the introduction of relieving Arches but the excess will probably not exceed the sum available under Contingencies. For terracing the Contractor says there is a great difficulty in getting bricks he has consequently been told that he may get them from where he likes and that he will be paid for any extra expense.

In order to clear the terraced verandah roofing the property room roof will have to be raised 18".

The estimate allows for painting the building outside, this should be done with thinner painting, but the colouring of the walls and the chunam should be omitted.

x x x x x

Sd/ J. P. Davidson
Executive Engineer

"True Copy"

Sub-Divn. officer

22/12/85

No 2
105/86

Recd 2/6/86

No. 1847

399
129

Superintending Engineer's remarks on the Inspection Notes of J. P. Davidson Esqre Executive Engineer Coimbatore Division from 20th November 1883

&c

EXECUTIVE ENGINEER'S
2 JAN 86
NORTH ARCOT DIVISION

22nd November 1883.

District Munsiff's Court Tellicherry.

Para 3.

I agree to this alteration and herewith return the plan, but as to the omission of the fixed venetians will destroy the special utility of this feature of the building, as a means of ventilation or ventilating shaft special means of ventilation should be provided by slits in the masonry.

x x x x x

Forwarded to the Sub-Divn. officer Cannanore for information. x x x

Sd/ J. P. Davidson
Executive Engineer

"True Copy"

Sub-Divn. officer

22/12/85

alteration

SUPDG. ENGINEER'S OFFICE
2/ 1 MC
1-Jany. 86
P.W.D.
FOURTH CIRCLE

Ord 1/125/86

No. 2
Dec: 1/6/86
ch IV

No: 6
W

Superintending Engr's Office
Camp. Ootacamund, 5th January /86

From

The Superintending Engineer
Fourth Circle

To,

The Chief Engineer
P. W. Department

Sir,

Enclosures 7.
1 ol Letter of Ex: Engineer No: 1 of 2d Jany. /86
2 copies of notes of Inspection
4 Plans ×
× will follow

In continuation of my letter No: 491 of 16th Instant, I have now the honor to forward the report of the Executive Engineer, West Coast Division on the failure of the turret of the District Munsiff's Court at Tellicherry, accompanied by plans showing the portions of the "turret" and "tower", and how they were built.

2. From these it appears that the failure occurred only in the turret containing the spiral stair case leading to the Record rooms in the "tower", and that the latter (the "tower") has not been affected.

3. The plans also show the

alteration made in the crown of the turret during construction.

4. The Executive Engineer attributes the failure partly to the description of laterite used, which however appears to have been the best procurable in the neighbourhood, and to the fact of the staircase being made of wood, which was affected by leakage in the masonry of the turret.

5. If better stone cannot be discovered, Colonel Ross Thompson's suggestions for rebuilding in brick with stone steps may be adopted. If laterite be used, it should be plastered.

I have the honor to be,
Sir,
Your most Obdt Sert.

E. Beatty - Colonel R.E.
Superintending Engr.
1st Circle

Incl. 105

From

The Supg. Engineer,
Fourth Circle.

EXECUTIVE ENGINEER
4/65
25 JAN 86

Dated 5th
Despd 6th } January 1886.

No. 6
Genl.

Enc: 7 (4 [illegible])

District Munsiff's Court House Tellicherry:—

Forwarding the Executive Engineer's Report on the failure of the — with his own opinion thereon.

No. 1

Executive Engineer's Office
West Coast Division
Calicut 2nd Jany /86

379/12

From
The Executive Engineer
West Coast Division

EXECUTIVE ENGINEER
REGD. NO. 7/176
25 JAN. 86
NORTH ARCOT DIVISION

To
The Superintending Engineer
IV Circle

Enclosures. 6
+ 4 Plans
2. Copies of Notes of Inspection
+ sent by Banghy Post

Sir,

I have the honor to report that I inspected the Tellicherry District Munsiff's Court Building on the 21st ultimo. The "turret" containing the Spiral Stair leading to the rooms of the Record "tower" is cracked horizontally, vertically and Spirally. My opinion is that the laterite of which it is built was not sufficiently good to bear its own crushing weight when it became saturated with water during the late heavy monsoon. The Spiral wooden Stair has also been in some measure a cause of the turret's disintegration. It was probably dry and seasoned

?

wood when built in and in its most Shrunken State. On becoming saturated the wood no doubt swelled and caused the Spiral cracks. The crown of the turret and part of the walls above were at once removed when the cracks were first observed and danger apprehended. A temporary roof of bamboos and cadjans was also put over the remaining portion of the turret. The foundations do not appear to be in any way the cause of the partial collapse of the turret.

The turret should be taken down to the basement or perhaps to the foundation level but the Record tower need not be touched. If the turret is to be rebuilt, and laterite used, I would recommend the walls being 2 feet instead of 1½ feet thick and the outside should be plastered.

If bricks are to be used instead of laterite they should be procured from the German Mission Kilns

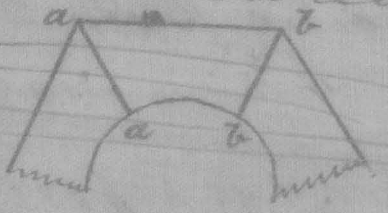
Kilns at Calicut and conveyed by native boats by sea to Tellicherry. The remainder of the building is in good order but I would recommend its being plastered outside before next monsoon as the laterite is undoubtedly of inferior quality although it was brought the Sub Divisional Officer informs me from quarries some 5 or 6 miles distant.

The turret does not appear to have been built to the full height in the Standard Design. vide notes of Inspection by the Divisional Officer and remarks thereon by the Superintending Engineer herewith. I would recommend the Spiral Stair being supported on granite stones projecting from the interior of the new turret, instead of being built into ~~with~~ the walls.

Plans shewing the relative positions of the "Turret" and the "Tower" also the alterations made in the crown of the "Turret" during construction are herewith submitted.

The "Turret" and "Tower" are connected but stand by themselves and have no connection with the other buildings.

The Sub Divisional officer mentions that the walls of the "turret" are 2 feet thick in places, he now explains that they are only so when measured at the angles. thus.



I have the honor to be
Sir,
Your most obedt Servt

R. M. Thompson Col. R.E.
Executive Engineer

2 JAN 86

No. 2 G/1
[illegible] IV [illegible] dated 12
Jany [illegible] No. 144 C. [illegible] dated 12th Jany/86
[illegible]
[illegible] dated 13th Jany/86 13 C.W.

399/14

SUPG. ENGINEER'S OFFICE
No. 1 W.C.
1-Jany. 86
P.W.D.
FOURTH CIRCLE

From
The Exec: Engineer
West Coast Division

Enc: 3/6/86
OR IV

OW J-3/105/86

Dated 2nd } January /86
Recd. }
No. 1

Enclosures. 6

District Moonsiff's Court house at Tellicherry -

Reports regarding ~~the~~ -

105

399/15

Jr W

This paper has been awaiting the receipt of the plans referred to, but they have not yet come to hand.

Cu
11.1.86

No 3057 W. 18.12.85
[illegible]5 C. 17.12.85
2299 W. 7.9.82
1570 W. 23.6.81
1050 W. 23.4.81
2294 W. 6.9.79
2068 W. 8.8.79
1216 + 3.7.74 procd
961 — 26.5.74 — do

C No 44 C d/ 12th Jany 86

Telegram (Deferred)

399/16

To Supdg Engr IV Circle
Coimbatore

Your number six of fifth instant Plans of Tellicherry Court house not yet received.

Cu

11 - 1 - 86

Despd 11/1/86

IV CIRCLE.

PUBLIC WORKS DEPARTMENT.

Service Message despatched by Telegraph.

399/17

From

The Superintending Engineer,
Fourth Circle.
Coimbatore

To

Madras Works
Madras

Plans of Tellicherry Court house despatched today.

(By order)

(Signed) P. Arnachellam
Hd clerk S. E's office IV circle

12-1-86.

No. 12/Genl

Copy forwarded by post for information

Beatty

Colonel, R. E.,
Supg. Engineer, IV Circle.

Supg. Engineer's Office, IV Circle,
Coimbatore 12 Jany 1886

153 W [illegible]

No 13
EW.

Superintending Engineer's Office 4th circle
Coimbatore, 13th January 1886.

From,

399

Madras Railway Licensed Telegraphs.

Local No.

Class. DC

To (Station.)

238. Words. 26

Time tendered for transmission. Railway time.
Day.
Hour. L
Minute. C

From (Station.) Coimbator

399/18

Gr M 12/11/10 Deferred
G at Coimbator

To (Person)
Madras Works
Madras

From (Person)
Superintending Engineer
4th Circle

Plans of tellicherry courthouse despatched today.

Received From
At Hrs. Mts. on the

Sent To
At Hrs. Mts. on the
By

Date 12/1/86

Senders Signature.

E Beale
Signaller in Charge.

9th. to Madras. I have called on the Postmaster at Ootacamund for explanation.

Rich 270

Recd 14/1/86

No. 13
EM

Superintending Engineer's Office 4th circle
Coimbatore, 13th January 1886.

From,

The Superintending Engineer, 399/19
4th Circle.

To,

The Chief Engineer,
P. W. Department.

Sir,

With reference to your telegram of 11th, regarding the plans of Tellicherry Munsiff's Court, I have the honor to explain that the plans arrived here from the West Coast on the 4th Instant, and were sent to me to Ootacamund, but through some blundering of the Post Office did not reach me there, and were returned to Coimbatore*, where I inspected them on the 11th and at once ordered their despatch to Madras. I have called on the Postmaster at Ootacamund for explanation.

* I returned to Coimbatore late on the evening of Saturday the 9th.

Explanation.

I have the honor to be;
Sir,
Your most Obt Sert.

J. Beatty – Colonel R.E.,
Superintending Engr. &c &c.

S.G.

399/70

D.L.5318

From

The Supg. Engineer,

Fourth circle.

15 JAN 86

270

Dated 13th
Despd: 14th } Jany: 1886.

No. 13
Genl.

District Munsiff's Court House at Tellicherry:-

Explaining the delay in the despatch of the plans of the—

No. 435
PW

North Arcot Divn. Office
Tellicherry 25th January 1886.

From

The Executive Engineer

North Arcot Division

382/21

To

The Superintending Engineer V Circle
Madras.

Sir,

Enclos
6 arg. paper
retd.

I have the honor with reference to your No. 4365 of 22 January 1886 to submit the following remarks on the Tellichery District Munsiffs Court.

2. The papers which accompanied your No. 4365 of 22 January 1886 are herewith returned.

3. The Tellichery District Munsiffs Court was Commenced some time in the latter half of the Official year 1882-83 and was Completed in March 1884.

4. At the Commencement Mr Webb (then an overseer 1st Grade) was in Charge of Cannore Sub Division and Consequently in charge of the work; he was however relieved of the Sub Division in or about

June 1882 when Mr. Marjoribanks arrived and from this date he was the subordinate in immediate charge.

6. Before the work was started I inspected the site and found this to be very much on the slope and the foundations as allowed in the plan were to be placed at various levels; I considered it inadvisable with the supervision I had available to carry out work on the plan & accordingly levelled the site and placed the foundations on one and the same level throughout; this was approved by the Superintending Engineer.

6. On my next inspection I found that some laterite stone had been brought to site of work but I found the quality of this stone very indifferent and accordingly rejected it; after some enquiry into the matter one or two quarries some miles from Tellichery were selected as giving the best stone available in the neighbourhood and the contractor was ordered to obtain his supplies from them subject, of course, to rejection of any really bad material.

7th On a later inspection I had cause to object

object to the quality of work being done & demanded, all I considered [illegible] the time Mr. [illegible] was ill in [illegible], and Mr. [illegible] was temporarily in charge of all works in Coimbatore Division.

8. When the tower was under construction, Mr. [illegible] pointed out that the [illegible] of the tower full height & finishing stuff with heavy stone finial would be dangerous in high monsoon winds, and as personally, I had some distrust of laterite as a material, I recommended the acceptance of this suggestion to the Superintending Engineer, who approved. Wood work was to be used for the staircase as stone was not obtainable.

9. The building was, during its construction, inspected by me about half a dozen times; the Coimbatore Division as then constituted, was very extensive and unwieldy; works could not receive the attention which they deserved, and which, in a smaller and more compact Division they would have received.

so on the Building was completed towards the close of the year 1883 and with the exception of taking in the Bungalow terrace roof of verandah, which had been expected, the monsoon of 1884 exposed no defects.

11. The Building was inspected by the Superintending Engineer, Colonel Ross Thompson, and myself in October or November 1884, when I was handing over charge to Colonel Ross Thompson & it was then in good order throughout.

12. Colonel Ross Thompson attributes the failure of the tower not to the foundations, but to the ~~[illegible]~~ crushing of the laterite under its own weight and also to swelling of the wood work of staircase; he further states that the laterite is of inferior quality, and should be plastered.

13. I think, in my early notes of inspection the fact will be found recorded that, the laterite available at Tellicherry was not first class, but still, what I passed on my different inspections, was a fairly good building material and it was the

the beds being [illegible] were

then the painting of the building instead of plastering may have hastened the collapse of the turret, but I think the true cause of collapse is simply the ~~[illegible]~~ crushing of the laterite under its own weight.

14. Owing to the scarcity and the great cost of good bricks, with the prices of bricks in prohibitive, as regards general work, and laterite is invariably used in place of brick.

[illegible] had been the [illegible]

for years in the [illegible]

[illegible], buildings

to built of brick, and

way altering the dimen

for the same reason

case of the Tellichery & Palghat

offices; the estimates which

submitted and sanctioned long before

tenders for constructing the buildings in laterite, on exactly the same dimensions allowed in the standard plans & estimates.

16. The fact that, in these buildings, as

new feature in the shape of a tower of this height was introduced, was overlooked, or, more probably, it was assumed that what could be done in brick could also be done in laterite —

19. The failure of the tower at Tellichery after its second monsoon, and the very leaky state of the tower at Puthur after its first monsoon, prove that, beyond certain limits, brickwork and laterite work are not interchangeable —

20. I may here mention that I had always [illegible] laterite to some extent, and was [illegible] to it [illegible] were [illegible] have been able to pay [illegible] the works on the West [illegible] that it might have [illegible] in constructing the towers at Tellichery and Puthur without giving them a greater bearing surface at the bottom, but my visits to these works were necessarily few and far between, and I quite overlooked the fact (as also

apparently

apparently had those who prepared & sanctioned the estimates) that a tower of over 50 feet, built in laterite, required special treatment, or more correctly, I had not realized that the towers were of this height —

22. The tower at Puthur has been completed since I handed over charge, but considering that, after its first monsoon, it showed defects which the tower at Tellichery did not, I should think it very probable that it may also fail; the stone obtainable at Puthur was, as far as I remember, superior to that obtainable at Tellichery —

23. Laterite being a quarried material, it is, of course, impossible to be certain of obtaining a really first class stone within a reasonable distance of any new work that is started, and in such cases, the excessive cost of transport being taken into account, the only course open is to make use of the best of the material at hand —

24

24 I think a series ~~[illegible]~~ of experiments as to the crushing weight &c. &c. of Laterite of various qualities would be of use.

25 Pointing in preference to plastering is, judging after the event, probably unwise in the case of laterite except of the very best quality, still there are many cases of pointed buildings on the West Coast and the effect is certainly to be infinitely preferred to plaster.

26. Mr Webb remarks that on "examination he finds the laterite to be that ordinarily used at Tellichery, and that it is inferior to that in use at Cannanore" is to me unintelligible.

27. Considering Mr Webb was in charge of the work from start to finish either as Sub Divisional Officer or subordinate, and that in this latter capacity he had the passing of all material used, it is not easy to understand why it required examination on his part, to find that the laterite was not Cannanore laterite—

28 The comparison of Cannanore and Tellichery laterite is also in my opinion unnecessary, Cannanore lies 14 miles by road from Tellichery & its quarries probably lie outside the Cantonment, moreover during the Construction of the work the backwater lying 1½ to 2 miles from Tellichery was unbridged, the bridge having been dismantled as dangerous; also ~~moreover~~ during the Construction of the work, Mr Webb who, from his long stay at Cannanore, as a subordinate in the Sub Division, was in the best position to judge, was convinced that the laterite for the building we were getting was the best obtainable.

29. In Conclusion, I think the true explanation of failure is, that, both at Tellichery and Puthur a material the qualities of which were not then, and are not now, satisfactorily known was used for work which differed from anything previously carried out.

I have the honor to be

Sir

Your most obedient Servant

W. Davidson

Executive Engineer

399/26

p18

Encls. Six pr.
Annexed.

1 FEB 86

No. 4476

Forwarded to the Chief Engineer P. W. Department with reference to G. O. No. 153 W. dated 19th January 1886.

C. W. Prendergast
Col. R.E.

Supdg. Engineer
5th Circle

29th January 1886.

Ref. No. 5937
26-1-86
Incl. 777

From

The Executive Engineer
N. Arcot Dt.

To

The Superintending Engr.
5th Circle

Dated 25th } Jany./86
Received }

No. 435/ee

Incls. 6

District Munsiff's Court at Tellicherry – Returns the papers with his Explanation

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Supdg. Engineer's Office, 4th Circle.
Camp Badagara 1st February/86.

No. 79C
E.W.

From

The Superintending Engineer,
Fourth Circle.

39/27

To

The Chief Engineer,
P. W. Department.

Sir,

Enclosures 4 & Plans already sent by Draughts

As directed in G.O. No. 153 of 19th January 1886, I have the honor to report further on the failure of the turret of the Tellicherry Munsiff's Court after personal inspection on the 30th and 31st January and inquiry on the spot.

2. I may first state that the Munsiff's Court was begun in 1882-83, and finished in 1883-84. It was handed over to the District Judge on the 16th April 1884, and I inspected it with Colonel Ross Thompson and Mr. Davidson on the 23rd October 1884. At that time no cracks were observed in any part of the building; no complaint was made about the turret; and the only part

of the building considered defective was the sloping terrace verandahs of the Clerks' rooms which had leaked, as all terracing does on the West Coast. Terracing of any kind is unsuited to the heavy rainfall of that coast; and these verandah roofs, which have since been unsuccessfully treated with the usual composition of tar and sand, will have to be covered with Mission tiles on × planking to make them watertight.

× or corrugated iron

3. In August and September 1885, Serjeant Webb, the Sub Divisional Officer, visited the Court three or four times when the tar and sand composition was being applied to the verandah roofs, but he did not enter the turret, no cracks had been observed in its walls, and his attention was not drawn to it, or to any other part of the building except the verandah roofs of the Clerks' rooms.

4. I may here state that the set of three record rooms are, as will be observed from the plan, each 13½ feet square, and placed one above the other. The lower room is now occupied as a record room, and I was assured, by the Court Officials who were present at one of my inspections, that the one room was ample for the wants of the Court as regards storing records, and would always be; because every month the records disposed of are sent to the District Court about 50 m. off for safe custody. The upper two record rooms, which can only be approached by the turret, have, therefore, never been used. The old Munsiff who died in December, had some intention of using one of them as a tiffin room, but there are no signs of its ever having been used for that or any other purpose. It is a pity he did not use it, as we should then probably know about what time the cracking took place. But as the upper rooms exist, and may hereafter be put to some use, the turret will have to be rebuilt; at least to a height of 8 or 10 feet above the floor of the upper room.

5. The walls of the turret, covered

with a light cadjan roof, are still standing, with the substantial wooden spiral staircase, and I was therefore able to make a very thorough inspection both of the turret and the upper record rooms.

6. The fact of the cracked condition of the turret was not known to anyone until the 9th November, the date on which the Sessions Judge telegraphed to the Sub Divisional Officer at Cannanore requesting him to examine the building. Its condition would not even then have attracted notice (because as above explained it was never used, and no signs of cracking were apparent in the lower record room or through the entrance from it to the foot of the turret) but for the fall of a lump of plaster off the inner face of the walls on to the wooden stair-case. The attention of the clerk in the record room was thus drawn to the turret, he entered it, and going up a little way he observed the cracks in the plastering.

7

7. Externally there is nothing likely to be observed by any ordinary observer. For three feet or three feet and a half from the ground there is not the faintest sign of a crack. Above that level on very close inspection here and there at intervals, not continuous or near one another, a few fine cracks only are discernible on very close inspection. And the first cracks in the plaster inside, are at about the same level. They become more frequent in the plaster of the interior higher up, and where the plaster has fallen or been removed, the cracks are found to extend to the masonry. At the top of the walls we know from Serjeant Webb's report, he found them not only damp, but coming away in pieces apparently full of minute cracks. The word "saturated" in his letter No. 375 of 23rd November 1885, gives, as I now understand, a somewhat exaggerated idea of the actual state of the stone, and the word used should more properly have been "damp". But the cracks are principally vertical, or

the vertical ones are the most dangerous looking. There are, also horizontal ones, but these strike me as having something to do with the sections of the masonry or plaster that were, done at a time in the course of construction.

8. The substantial wooden stair-case, with a wooden newel 8" diameter, built of planking 1¼ inches thick, is in perfect order, and has not been at all affected by what has happened to the walls of the turret. Serjeant Webb informs me that the treads were let 4 inches into the masonry.

9. The masonry roof of the turret, which was built of laterite and plastered in Surki Cement, was about 15 feet high, on 18-inch walls 38 feet high. When taken down by Serjeant Webb he says the masonry× was perfectly sound, and free from cracks, and the cracks only began in the walls below the level of the cornice; i.e., below the level of 38 feet from the ground.

× of the roof

When

When Serjeant Webb inspected the turret on 10th November he found no signs of leakage in the walls and when he felt them to ascertain if the cracking of the plaster was due to saturation, he found the walls perfectly dry; on taking off the roof however, and coming to the top of the walls below the cornice, the stones were still damp, and cracked, and could only be removed in bits.

10. The laterite used appears to me to be fairly good material, and I do not consider it at all inferior to the laterite in ordinary use in the buildings of the West Coast. I do not attribute the cracks to the quality of the laterite, or to leakage, or saturation, or to the woodwork of the stair case. As to crushing, if the material has failed in that way, one would naturally expect to find it in worse condition the greater the weight upon it, but the base of the turret which has the greatest weight upon it is in perfect

order.

11. I attribute the failure to the position of the turret, on an elevated site within a furlong of the sea, exposed to the full force of the wind in the South West Monsoon. My view of the case is that the turret was too weak in section to withstand a storm, and that the cracks were the result of the shaking which the lofty ornamental top received in some storm, during the last South West Monsoon. Possibly the walls were also weakened by partial saturation from the heavy rain beating against them.

12. I observe that the loop holes introduced into the walls to admit light and air have been placed so that two are in the same plane, though at some distance apart. This may have contributed to weaken the structure. It would have been better if these had been arranged differently so that no two should have been in the same

plane

plane either vertically or horizontally.

13. I consider that the material has shown no signs of crushing, and that it will be sufficient to demolish the turret to about three feet above the basement and rebuild with carefully selected blocks of the best material procurable, making the walls only just high enough to admit of entrance from the top of the stair case to the upper room (say 30 feet), and instead of the lofty conical roof providing one of 2 or 3 feet only. The exterior surface of the new work to be plastered in chunam. The total height of the turret would then be about 38 feet at most, instead of 53. According to the standard design, it should have been about 60 feet high.

14. If however it has to be rebuilt of the same height as before, I would, for greater stability, rebuild from the foundations giving a broader base and walls of 2½ or 2¾ feet at bottom above the basement, reducing them

at every 12 or 14 feet, to 18 inches at top;- 18 inches is the usual length of laterite blocks, and it is not convenient to make the minimum thickness at top of wall less.

15. One other point requires notice; viz, that the plaster of all the other walls of the court except the turret is sound and free from cracks; and as these walls are of the same thickness as those of the turret, it is evident that they are able to keep out damp though unplastered; and that if damp penetrated the walls of the turret, it must have been by the cracks.

16. I must also state that I looked for any trace of the damage having been done by lightning, but there was none. The building is however one of those that has still to be provided with lightning conductors.

17. I have despatched to you this day by banghy, the four plans of the court that I obtained from you at

Madras.

Madras.

I have the honor to be,
Sir,
Your most Obedt. servant.

E. Beatty - Col: R.E.,
Superintg. Engineer, 4th Circle.

Judl. 916

From

The Supg. Engineer,
Fourth Circle.

To

The Chief Engineer,
P. W. Department.

Dated 1st } February 1886.
Despd 2nd }
Recd 5

No. 79C / W

Enc: 1 (Plan)

Turret of the Tellicherry District Munsiffs' Court:—
Reporting further, after personal inspection, as directed in G.O. No. 153 W of 19th January 1886.

Sent separately
11. 2. 86

No. 961 d/26. 5. 74. Judl.
" 1216 d/3. 7. 74 "
" 2068 W d/8. 8. 79
" 2292 W d/6. 9. 79
" 1050 W d/22. 4. 81
" 1578 W d/18. 6. 81
" 2299 W d/7. 9. 82
" 3657 W d/18. 12. 85

C.O. 6203/86

Proposal may be drafted for sanction in lines of attached note — vide G.O. dated 19-1-86 No. 153 W.

W

7-2-86

380/33

399/33

[illegible] turret [illegible]
[illegible] 11.2.86
S. A. W.

I cannot accept S.E.'s opinion without qualification 399/ Without doubt the exposed position of the building had much to do with the failure of the turret, — but that failure would not have taken place if the material had been of proper quality. For the use of inferior laterite Serjeant Webb must be held responsible. It was all passed by him, although he now expresses surprise to find, after the failure of the turret, that its quality was so poor. He must be censured, & warned that another such instance of carelessness & negligence will seriously interfere with his departmental prospects.

Although Mr. W. must be held to be mainly in fault, the officers & subordinates who, besides him, were officially connected with the work cannot be absolved from responsibility.

With respect to the future, I would accept S.E.'s proposals in para 13 of his letter dated 1-2-86, — also the suggestions made by Mr. Davidson in para 24 of his letter dated 25-1-86

Note

389/32

The C. C. was in charge & the C. E. & subordinate who built the work are of opinion that the failure of the tower was due to the crushing of the laterite of which the walls were constructed. The S. E. however after a careful inspection has arrived at the conclusion that the cracks were caused by the tower being much shaken by the wind in some storm during the Monsoon & he considers that the fact of the base of the tower not cracking shows that the failure could not have been due to crushing as the weight to be borne was the greatest at the bottom. It is however possible that a better material was used in the lower portions which are also more protected from rain: After consideration it seems most probable that the S.E's opinion is correct & the walls cracked owing to vibration caused by the wind acting on the thin walls of the lofty tower. The suggestion contained in para 13 of the S.E's report can be accepted

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and an estimate
shall be submitted
for carrying them
out.

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c. 18. 2. 86 L 13. 3.

Tellicherry Court House

This is an unsatisfactory matter. The best thing to be done at present is to issue an ad interim order instructing the S.E. to submit his recommendations after personal inspection, which should be made as soon as possible.

In the meantime the two letters received from the S.E., of 16-12-85 and 5-1-86, should be forwarded (through S.E. II) to Mr. Davidson, for any remarks or explanation he may have to offer.

The order should also notice with dissatisfaction the delay on the part of the E.E. to proceed to Tellicherry. He appears to have deferred his inspection of the building until at least six weeks after the first report of its danger reached him.

18.1.86

SAW

Note

The papers herewith refer to the failure of the ~~tower~~ turret of the District Moonsiff's Court at Tellicherry. The building was begun in March 1883 & completed in March/84. It was constructed in accordance with the old standard design issued with G. O. No. 2294 W of 6th Sept/79 accept ~~that~~ an alteration in the upper portion of the turret which could not possibly have been the cause of the failure. The turret is said to be cracked horizontally vertically & spirally. These cracks seem to have appeared sometime before 10th of Nov/85 and the building officer reported the matter to the E.E. on 14th Nov. This report was forwarded to S.E. by E.E. with a remark that a further report was awaited. The building officer submitted this further + report on 23rd Nov/85 & in it he stated that the building was in a dangerous state. The E.E. does not however appear to have inspected the building till 21st Dec & his report on it is dated 2nd Jany/86

The turret it appears is 53' high & built of laterite 1½' thick

and the C.E. is of
opinion that the
laterite was of inferior
quality & was unable
to bear the crushing
weight when saturated
~~it~~ he also attributes the
failure partly to the
thoroughly seasoned wood
of the spiral staircase
which was built into
the walls becoming
wet & swelling: he states
also that the foundations
are sound.

From the directions of
the cracks it is probable
that the failure is due
to the inferior laterite
crushing; but it is
improbable that the
swelling of seasoned wood

Could

have cracked the walls & it is more likely that the spiral cracks were ~~are~~ caused by un-seasoned wood warping. The C. E. in charge during the construction of the building was Mr Davidson, the military officer from March to June /83 was Sergeant Webb & from June to March /84 Mr Mapilants assisted by Sergeant Webb.

It is noticed that Sergeant Webb in his report on the failure dated 14th Nov/85 states ~~[illegible]~~ "On examination I find the material in that company used in

Tellicherry brick is far inferior to the laterite used in Cannanore" he also concludes that it is unsuitable for lofty structures.

It is much to be regretted that inferior materials have allowed to be put into the work & it should have been apparent that a tower 53' & walls only 1½' thick required to be constructed with specially selected materials.

The C.E. recommends taking down the tower to foundation level & rebuilding with walls 2' thick either with laterite or good bricks, he also recommends that the whole of the outside of the building be plastered.

It is thought that unless really good laterite can be got an estimate should be submitted for rebuilding the turret with 1st class bricks, the walls to be 2' thick and plastering the whole of the outside of the building.

As the turret seems to be connected with the tower, great care will have to be taken

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399/46

Letter from the S.E. IV Circle
No 491 d/ 16.12.85
" 6 d/ 5.1.86

To Dw.

For orders.

Cu
15.1.86.

Buildings & Roads

Civil Works

PUBLIC WORKS DEPARTMENT.

399/47

Circ. 777

D.W. 399/47

For orders.

Col. Beatty's report might perhaps be awaited.

Cir

1.2.86.

Await Colonel Beatty's report

1/2/86

1.2.86

D.W.

Col. Beatty's report has been received, & the file is submitted for orders.

Cir

5.2.86

16.2.86

Buildings & Roads
Civil Works
PUBLIC WORKS DEPARTMENT.

390

399/48

District Munsiff's Court
at Tellicherry

The S. E. IV sent a
roll of plans connected
with above.
What has been done
with them?
If here, send them to
me now

W
27-1-86

G. O. No. 153 W
dated 19-1-86.

W

File with plans
submitted.

Cr
27.1.86

Plans handed to S. E.
IV Circle by me - He
will return ~~[illegible]~~ with his
report - DK W

16.2.86

Buildings & Roads
Civil Works

PUBLIC WORKS DEPARTMENT.

No. 399 W.

391/49

PROCEEDINGS OF THE MADRAS GOVERNMENT

A/Circ.

UNDER date the Feby 13. 1886

again
READ the following

Letter from the S. E. IV Circle (Ae. No. 491/E.W. d/ Decr. 16th 1885)
Telegram to the ~~4~~ do — (" " 2185 C d/ " 17th ")
Letter from the ~~5~~ do — (" " 6/E.W. d/ Jan 5th 1886)
Telegram to the ~~6~~ do — (" " 144 C d/ Jan: 12th ")
Telegram from the ~~9~~ do — (" " d/ Jan 12th ")
Letter from the ~~10~~ do — (" " 13 E.W. d/ " 13th ")

Read ~~again~~

G.O. No. 153 W. d/ January 19th 1886

Read also.

Letter from the E.E. North Arcot Dt. (Ae. No. 435 d/ Jan: 25th 1886)
Endorsement thereon by S.E. IV Circle (" " 4476/S.E. d/ " 29th ")
Letter from the S. E. IV Circle (" " 79 C/E.W. d/ Feb. 1 ")

No: 491. E.W. d 16.12.85

In his first letter recorded above, the Supdg Engineer, IV Circle

Circ. 16. 2. 86 S 13. 2.

reported the failure of the tower of the District Munsiff's Court at Tellicherry. According to the Sub-divisional officer's report, it had cracked horizontally, longitudinally, and spirally, to such an extent as to render the building unsafe, and to necessitate its immediate vacation by the District Munsiff.

2. Instructions were at once issued to the Executive Engineer, West Coast Division, to inspect the Court house,

Telegram No: 2185. C. d 17.12.85

and to submit a full report on the subject. The Executive Engineer's reply was received under cover of the Supply Engineer's No. 6 EW. d/ 5th January 1886, and from it the Government learnt that the failure occurred only in the turret containing a spiral staircase leading to the record rooms in the tower, and that the tower itself had not been affected. The Executive Engineer attributed the failure to

(1) The laterite used being not sufficiently good to bear its own weight, when saturated with water during the late heavy monsoon.

(2) The spiral staircase being built of dry and seasoned wood which swelled considerably when saturated by rain water which found its way in through leaks in the turret.

3. The Court house at Tellicherry was begun in 1882/83, and finished in 1883/84; and

during the time it was under construction Mr. J. P. Davidson was the Divisional officer in charge of the combined West Coast and Coimbatore Divisions, and Sergeant Webb was serving in the subdivision. The laterite used for the tower was all passed by the latter officer.

G.O. 153. W.S. 19.1.6.

4. On the 19th January 1886, the Govt., after recording the dissatisfaction with which they had received the reports of the failure of the turret, desired

the Supdg Engineer to submit a full report on the subject after personal inspection of the building, and called upon Mr Davidson for any remarks or explanation he might have to offer.

5 Replies from both officers have been received. Mr Davidson reports that he inspected the building ~~about~~ on several occasions ~~half a dozen times~~ while it was in course of construction; but

that, owing to the large extent of the Coimbatore Division as then constituted, works could not receive the attention which they deserved. He is of opinion that the true cause of the failure was the crushing of the laterite under its own weight. Mr Davidson further states that the laterite available at Tellicherry is not first class; but what was passed by him at his different inspections of the walls was a fairly good building material and the best to be got. He is of opinion that the laterite used both at Tellicherry and Puttur is a material the qualities of which were not and are not satisfactorily known. In this connection, attention is directed to the remarks contained in para 22 of

Mr

399/15/3

Mr Davidson's report in view to the tower at Puttur being carefully watched, and any needful precautions taken against a similar failure occurring in it.

6 The Superintending Engineer, after ~~careful~~ inspection of the building, is of opinion that the laterite used is a

fairly

the failure would not have taken place if the material used had been of proper quality. For the use of inferior laterite Sergeant Webb must be held responsible, as it was all passed by him; although he now expresses surprise to find, after the failure of the turret, that its quality was so poor. The Supdg Engineer will convey to Sergt. Webb a severe censure, and will warn him that another such instance

389/55

of carelessness and negligence will seriously interfere with his departmental prospects.

8. Although Sergeant Webb must be held to be mainly in fault, the officers and subordinates who, besides him, were officially connected with the work cannot be absolved from responsibility. The Supdg Engineer V Circle will furnish Mr Davidson with a copy of this order,

and a copy will be forwarded to Mr. Majoribanks by the Supdg Engineer IV Circle.

~~9 The Govt. have already expressed their dissatisfaction at the long delay which the present Executive Engr., Colonel Ross Thompson, allowed to occur, after hearing of the dangerous state of the building, before he inspected it personally.~~

10. 9. The proposals made in para 13 of the Supdg Engineer's No. 79 C/E.W. dt 1st Feby 1886, are

accepted, and he will submit at an $^{399/5}$ early date an estimate for rebuilding the turret to the height recommended by him. Care will be taken that only the best materials are used. A separate estimate will be submitted at the same time for protecting the tower from lightning, in the manner laid down in the Code of Instructions.

10. The suggestion made by Mr. Davidson, in para 24 of his

letter dd 25th January 1886, that Experiments be made as to the crushing weight and other properties of laterite of various qualities, is approved; and the Supdg Engineer will be directed to take the necessary steps for carrying out the Experiments. The results will be submitted to Govt accompanied by a report from the Supdg Engineer.

12. 11. The Govt trust

399/57

that this unfortunate occurrence will serve as a warning to all officers and subordinates serving on the West Coast, to exercise the greatest care in the selection of their building materials, especially in regard to the quality of laterite.

11-2-86

S.E. IV Circle ✓

S.E. V Circle ✓

Dspd
26/2/86

399/58

Conv. 11. 2. 86 Sl 13. 2. 86

777

Govt. of 1886 M[illegible]dras.

PUBLIC WORKS.

Dated Sanc 17/2/86

Recd.

G.O. /3 2/ 1886 No. 3[illegible]

[illegible] of the [illegible] ~~[illegible]~~

Court at Tellicherry

[illegible] on [illegible] on

[illegible] failure of the

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