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. 99, 100, 101, 102, 103, 104 & 105	2863	Press / Mis.
Dated	5-12-	1872

Not to be folded or roughly handled

Proceedings of the Madras Government, Public Works Department, 5th December 1872.

Read the following papers :—

No. 99. From the Inspector-General of Police, to the Secretary to Government, Public Works Department, dated Calicut, 27th November 1871, No. 7,595.

I HAVE the honour to submit, for the information of Government, letters* from the Deputy Inspector-General of Police, Northern Range, and the Superintendent of Police, Vizagapatam, regarding the condition of a second-class Police station-house at Seetanagrum.

* Nos. 74 and 464, dated 3rd and 6th Oct. 1871.

2. This station-house was built in the year 1862-63 at a cost of Rupees 1,065, and is now reported to be in an utterly dilapidated and dangerous condition. A station-house of this class if properly built ought to be a very durable structure.

3. The Superintendent of Police proposes to erect a mud-walled and thatched station-house at Seetanagrum, but I do not think that this style of building is suitable for the purpose. I think that the materials of the present station-house should be utilized as far as possible in building a small station-house at Seetanagrum and a larger one at Burgavalsah.

No. 3,308.

REFERRED to the Superintending Engineer of the 1st Division for full report on the failure of the building. The names of the officers or subordinates who may be responsible should also be reported.

(Signed) J. CARPENDALE, Colonel, R.E.,
Secretary to Government.

6*th December* 1871.

No. 100. From the Acting Superintending Engineer, 1st Division.
(Here enter No. 3,676, dated 29th February 1872.)

No. 101. From do. do.
(Here enter No. 3,910, dated 20th March 1872.)

No. 102. From Conductor F. HUDSON, Sub-Engineer.
(Here enter No. ——, dated 3rd April 1872.)

No. 103. From the Acting Superintending Engineer, 1st Division.
(Here enter No. 977, dated 11th June 1872.)

No. 104. From the Acting Superintending Engineer, 1st Division, to the Secretary to Government, Public Works Department, dated Dowlaishweram, 7th November 1872, No. 2,812.

ADVERTING to your memorandum of the 22nd June 1872, I have the honour to forward copies of Major Beatty's report and its accompaniments on the Seetanagrum Police Station-house. I had purposed to go out there myself, but was prevented doing so by a sharp attack of fever and its after-effects, when the Doctor ordered me to avoid exposure to the sun for the time.

1 Copy of Report, No. A., dated 23rd Oct. 1872.
1 Sketch Plan.
1 Copy of Estimate for Rupees 520.

2. The building, it will be seen, has been constructed according to a standard plan but on very bad soil, for which sufficient foundations were not provided; the roof also is very weak, but in other respects the materials used appear to have been good.

3. I have already returned all the papers sent to me regarding this work, and Major Beatty reports no others are forthcoming. I now beg to add I am not aware on ~~what~~ authority it was partly demolished or the estimate prepared for its re-construction. It appears from Major Beatty's report the Police Department are not likely to retain Seetanagrum as a station; it would then perhaps be as well to sell the materials by auction to recover as much of the loss as possible; on such a soil it would be very unadvisable to attempt any re-construction on the present foundations, these would have to be taken out altogether and a broad base of concrete laid 9 or 10 feet wide and one and a half or two feet thick under the walls, and to beyond the verandah pillars all round the building to secure the structure.

From the Executive Engineer, Vizianagram, to the Acting Superintending Engineer, 1st Division, Dowlaishweram, dated Vizianagram, 23rd October 1872.

I HAVE the honour to report on the Seetanagrum station-house, and the causes of its failure, after a personal inspection of the building.

2. The site of the station-house, which is probably the best procurable in a very flat part of the district, is a small patch of ground about 18 inches above the general level of the land in its neighbourhood, and in the midst of swamp or wet cultivation. The soil is black cotton, containing small pieces of kunker lime.

3. There had been fine weather for about 36 hours previous to my visit to the place, but this had been preceded by some days' heavy rain, and, owing to the total absence of any attempt at drainage, I could not walk 50 yards from the station-house in any direction on dry ground.

4. The walls and foundations are of good rubble masonry, and the brick arching over doors and windows was probably very fair work. The floor was of brick-on-edge plastered. Both walls and floor are badly cracked in every direction, as shown on the accompanying sketch plan, and the cracks extend through the basement into the foundations. It is on account of these dangerous looking cracks that the station-house is objected to by the Police Department, and no longer occupied by them.

5. The roof is a tiled one; the wood work, which is of country-wood (Guggelapukarra) in the centre room, is couples and collar beams, and in the end rooms hip and corner rafters. It has spread a little, but still holds together well, and seems to have leaked very little, if at all, in the recent heavy rains. Some of the couples are cracked and bent at the junction with the lower collar beams.

6. Through the cracks in the walls white-ants have mounted to the wood work, and as this is partly buried in the masonry it is impossible to say how much of it would have to be renewed in putting up a new building.

7. My opinion is that the cracks are mainly due to the unequal settlement of the entire base of the building, but especially the back and end walls. The foundations are now 2½ feet thick by 3 feet deep below the surface of the ground. Probably in such a soil and site a broader foundation resting on a foot of concrete is what was needed.

8. But in addition to the insufficiency of foundation the weak style of frame work (couples and collar beams, etc.,) supporting the roof has undoubtedly aided in throwing the walls out of position. When this kind of roof spreads at all, as it is sure to do as soon as the weight of tiling comes upon it, and still more when weakened by nails rusting and the attacks of insects, etc, the walls must be thrust out and damaged. I would never use collar beams, but in preference fasten the rafters to a ridge pole and purlins, thereby avoiding the lateral pressure on the walls.

Proceedings of the Madras Government, Public Works Department, 5th December 1872.

9. In August last, before Mr. Baker heard that you had directed Mr. Turner to inspect the building, he had pulled down the verandah, and, I believe, purposed demolishing the entire building; but under what authority I have been unable to ascertain. Overseer Kristna Row thinks it was done at the request of the Police Department.

10. It might be possible to buttress the walls and strengthen the roof so as to make the building safe and habitable, but there would be some risk attending the operation. There is also danger from further settlement in the site, and as part of the building has already been taken down, and as it is understood that the Police Department would not now select Seetanagrum as the most convenient place for a station-house, I shall not propose attempting to repair the building.

11. The estimate of Mr. Supervisor Cormac when Range Officer in June 1871 (amounting to Rupees 520), for repairing the building, should more properly have been entitled an estimate for reconstruction with the aid of the old materials. I send herewith a copy of it.

12. The original plan and estimate furnished to the Overseer employed on the building of the station-house have not been preserved, and no copies of them can be found in the Range Office records. The old estimate-book of the Range Office for 1860-61 is in a very imperfect state, have apparently suffered severely in the great cyclone that visited Vizianagram in 1867, and up to the middle of 1862 many of the pages are either missing or illegible.

13. The station-house was built according to the standard plan of a second-class Police-station. The work was commenced on 19th March 1862 under the orders of the District Engineer in his memorandum No. 1,327 of February 1862, and finished in September 1862. Mr. F. Hudson was then the Executive Agent in charge of the Range, and the work was superintended by Overseer Chetty Gunniah.

Vide G. O., No. 80 of January 1862.

14. I need only further observe, in reference to the enquiry by Colonel Walker in his memorandum of 22nd June 1872, that except in a few large towns of the district, such as Vizianagram, terraced roofs are rarely seen, while in the village of Seetanagrum alone there are about twenty-seven tiled buildings.

No. 105. ORDER THEREON, 5th December 1872, No. 2,863.

CIVIL WORKS, No. 4.

IT is evident from the various reports relative to this small building, but especially from Major Beatty's, that its failure is attributable mainly to want of consideration of the peculiar nature of the soil, which called for considerable modification of the dimensions of the foundations laid down in the standard plan. Greater width was required, and a bed of concrete on which to spread the weight of the superstructure. A tiled roof was properly enough substituted for the terraced roof shown in the standard plan, consistently with local usage; but such change of construction should also have involved gable ends, and the use of ridge poles and purlins to support the rafters, instead of couples.

2. His Excellency the Governor in Council will hold District Engineers answerable for the proper adaptation of the foundations of all buildings to the exact sites which they are to occupy, and the Inspecting Engineer for Civil and Military Buildings will take care to ascertain that this point has been specially attended to in the preparation of all plans that pass through his hands. Where it may be necessary to use coupled roofs the greatest care should be taken to ensure the proper framing together of the timbers.

Proceedings of the Madras Government, Public Works Department, 5th December 1872.

3. The materials of this building will be utilized as far as possible as desired by the Inspector-General of Police, and plans and estimates submitted in due course for the new buildings mentioned in his letter.

(True Extract.)

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

To the District Engineer, Vizagapatam.
To all other District Engineers.
To the Inspecting Engineer for Civil and Military Buildings.
,, Judicial Department.
,, Inspector-General of Police.

Exd. S. T. Austin.

Office of the Inspector General of Police,
Calicut 27th November 1871.

No. 7595.

From

The Inspector General of Police,

To

The [redacted] *Secretary to Government,*
Public Works Department
Fort St. George.

Sir,

I have the honor to submit for the information of Government [1] *letters from the Deputy Inspector General of Police Northern Range and the Superintendent of Police Vizagapatam regarding the Condition of a 2nd Class Police Station House at Seetanagrum.*

2. This Station House was built in the year 1862-63 at a cost of Rs. 1,065-- and is now reported to be in an utterly dilapidated and dangerous condition. A Station House of this class if properly

Enclosures one

[1] *Nos 74 and 464 dated 3rd and 6th October 1871.*

properly built ought to be a very durable structure.

3. The Superintendent of Police proposes to erect a mud walled and thatched Station House at Seetanagrum, but I do not think that this style of building is suitable for the purpose. I think that the materials of the present Station House should be utilised as far as possible in building a small Station House at Seetanagrum and a larger one at Burgavalsah.

I have the honor to be,

Sir,

Your most obedt. Servant

(Illegible)

Inspector General of Police

SUPERINTENDING ENGINEER'S OFFICE, 1ST DIVISION.

DOWLAISHWARUM, 29 February 1872

No. 210

Public Works 187 Dept.
Original for December.
No. 5737

From

The Inspector General
of Police,

To P. W. 1502/72

The Chief Secretary
to Government,
(Public Works Deptt,
Fort St. George.

No. 2863. Dated 27th November 1871.
Received 4th December 1871
No. 7595

Forwards for information letters from the D.I. of Police N. Range and the Supt of Police Vizagapatam regarding the dilapidated Condition of Seetanagrum Station House

Referred to the Supg. Engineer of the 1st Division for full report on the failure of the building. The names of the Officers & Subordinates who may be responsible should also be reported

Colle
Secy to Govt
6 December 1871

Superintending Engineer's Office, 1st Division.
Dowlaishwarum, 29 February 1872

No. 3696

From

Lieut Colonel J. T. Fischer R.E.
Ag. Superintending Engineer
1st Division

To

Colonel J. Courtenay R.E.
Secretary to Government D. P. W.
MADRAS

SIR,

With reference to your endorsement dated 6th December 1871 on a letter from the Inspector General of Police regarding the dilapidated condition of the Seetanagrum Station house, I have the honor to forward herewith, copy of a report received from the Supervisor in Charge No 3 Range Vizagapatam for the information of Government.

2. It will be seen from Mr Supervisor Baker's report that the failure of this Building is attributable apparently to the work having been constructed on insufficient foundations, but the report is far from clear and not at all satisfactory and made most needlessly prolix.

I have the honor to be
Sir,
Your most obedient Servant
Lieut Colonel R.E.
Ag. Superintending Engineer 1st Div.

No. 108

No. 3 OR VIZIANAGRAM RANGE OFFICE,
VIZAGAPATAM DISTRICT. 20th June, 1871

From

The Officer in charge of the
Vizianagram Range.

To

The Superintendent of Police.
Vizagapatam.

Sir,

I beg to inform you, with refe-
rence to your letter No 39 of 22nd ult.
that I have inspected the Station House
at Vizianagram; the building is plain
in brick & cubicon, that any money
kept in safeking if up, would be also
by water; the walls are cracked from
top to bottom, and one cracke is the
door wall, is wide enough to admit
of a man's hand thro' from back to
the street, I consider it unsafe
and I think it should not be used until
something has been done to it.

I beg to forward an estimate
for repairing the Station House, which

P. W. 1872 Despatch
From Ro for March
No. 1151.
To Wg Supdg Engineer
1st Division
Copy
The Secretary to Government
Public Department
Madras

Dated 29th February 1872
Recd 6th March 1872.

No. 2636

Forwarded Copy of Report
received from Executive Engineer
Vizagapatam relative to the defec-
tive state of the Police Station
Vizianagram Police Station &
Houses and Observation Tower
referred to in Govt Proceedings
for information

No 2803 dated 9th April 1872
No. 96.

No 108
618 June 72

is the only course I can recommend
to be taken regarding it.

I am Sir
Your most obedient Servant
Thomas Dundas
In Charge of No 3 Range.

From

The Officer In-charge of No. 3
or Vizianagrum Range,
Vizagapatam District

To

The Supdt of Police
Vizagapatam

Dated 20 June
Despd. 22d do } 1881
Received

No. 108

Enclosures. two

No 464
1871

Trichy, 6th October 1871

From

The Deputy Inspr. Genl. of Police
N. Range

To

The Inspector General of Police
Madras,

Sir,

In giving over charge of Cutcherry No. 74 dated the 3rd of October from the Supt. of Police Vizagapatam, I have the honor to report that in the year 1862 or 63 a 2nd Class Station House was built by the D.P.W. at Seetanagaram which was then fixed on as the Head Qrs. of the Senior Assistant Agent and Assistant Supt. of Police. The head quarters were afterwards changed to Parvatipur, but not until after the Station House was built.

2. This building is now reported as being in a dangerous state cracked from the foundation to the roof & is unsafe

1,550 Copies
1871 Depts

Enclosure in a letter from the Inspector General of Police dated Calicut 27th November 1871 No. 7595

Lieut Colr W. Baker
Deputy Inspr General
Calicut

From

The Deputy Inspector General of Police N. Range
P. Dr. 1502/72
Dated 6th October 71 No. 464

Forwards a letter from the Supt of Police Vizagapatam reporting upon the state of the Seetanagaram Station House.

Oct 1871

From Office of the Supt of Police
Vizagapatam 3rd Oct 71

No 74.

To

The Inspector General of Police
Madras

Sir

I have the honor herewith to forward a report from the Engineer Officer upon the State of the Setanagram Station House built by the M. P. W. I believe when the district was first taken up by the Police, on receipt of the above letter I wrote to Mr Cormac, Enquiring what would be the value of the Materials of this building, in case we made use of them in building a Station House at Burjavalasa, Some 250 miles distant on the road to Gunjaputtinagram, where we are much in want of a Station, he replied Some Rs 60, would be saved, by using the iron doors & Some Rs 40, on account of the wood work.

We do not require a large Station House at Setanagram, but as the present one, is uninhabitable, I would suggest that a Small Station House of Mud Walls & thatch, with a Small lock up, Such as are generally build, be built, and the Materials of the present Station, handed over to the Engineer, to be made use of in building the Station House, at Burgavala sa. Plan & Estimate for which I hope shortly to forward for Sanction

I have the honor to be

* Original could not be found in this Office

No 108 dated 20th June 71

Amount Rs 520

Oct 1871

Oct 1871

for men to stop in.

3 The Executive Engineer has submitted an estimate for repairing or rather for rebuilding the Station at a cost of 540 Rupees.

4 I would venture to suggest that the state of this building should be specially brought to the notice of government, for, if the foundations had been properly laid and ordinary care taken in building the Station, it would scarcely have fallen into the dilapidated Condition as reported by the Executive Engineer whose letter No. 108 dated 20th of June/71 is forwarded.

I have the honor to be,
Sir,
Your most obt. Servt.

J. L. Simmonds
by Dept. Genl. of Police
Ranges.

P.M. 1872

22 Nov

I have the honor to be
Sir
Your Most Obdt Servt
R. W. Draper Captain
Superintendent of Police

To
The Dy Inspr Genl
of Police Mds

D.O. No. 1542 dated 11/12

Dalhousie

Dated 11th Dec 1871

Superintending Engineer's Office, 1st Division.
Dowlaishwarum, 20 March 1872

No. 3910
From

Lieut Col C. L. Fischer R.E.
Acting Superintending Engineer
1st Division

To

Colonel G. J. Carbonell R.E.
Secretary to Government D. P. W.
MADRAS

SIR,

I am requested in your Memo of the 11th Instant No 96, I have the honor herewith, the Letter from the Inspector General of Police regarding the Sedaingrum Native House, also its Enclosures.

I have the honor to be
Sir
Your Most Obt Servant

Lieut Col R.E.
Actg Supt Engineer 1st Division

Copies of the communi-
-cation being implicated

Madras 3rd April 1872

Copy Telegram
No 116
Inspr Genl of Police in charge Mr
Ill or Telegram Rangt
Bangalore Dist
To Sir Superintending Engineer
1st Division
Madras

Dated 2nd June 1872
Rec'd

Enclosure One
Postpaid

Copy of Letter from the Inspector
General of Police regarding
the Telegram Station
Salem

Dated 3rd June 1872

Rec'd 4th June 1872

Ro 11 March 1872 No 96 Pris

P. W. 1872 Department

From Origl sent for Sl. No 1502

The Superintending Engineer,
First Division.

To

The Secretary to Government
Department Public Works
MADRAS

Dated 20 May
Received 26 May

No. 3910
Encls. Four

Subject.

Returns as requested
the Letter from the Inspector
General of Police, regarding
the Telegraph Station
Salem

No 2863-5 Dec 1872

No 101
C. Booth 19 June 72.
Ro 18 Nov 72

No. 90

Madras 3rd April 1872

25

From Conductor F Hudson
Sub Engineer

To The Secretary to Government D. P. W.
Fort St. George

Sir

Referring to Mr. Supervisor Baker's letter (herewith returned), regarding the Police Station house at Seetanagrum, I respectfully beg to state that the failure of this building, - so far as it has failed - is due to the conditions upon which it was designed, and not to any neglect on my part: the plan was a standard one, and I had strict orders to adhere to it. An inspection of the plan will show that the feet of the rafters ought to be tied together, and that the hips should give place to gables, or that the breadth of the building, as well as that of the end rooms, should be so adjusted that the hip rafters would meet on the partition walls. Mr. Baker's report clearly shows that the thrust of the roof has caused all the mischief, as the cracks commence at the top of the wall, and do not extend more than half way down; and yet that Officer infers that it is the foundation, and not the roof, that is in fault; and that a roof could not thrust out the tops of the walls or tumble down without the foundation being implicated

P. W. 2977/72.
Enclosure in a letter
No 977 dated 11th June 72
from the Sup Engr
1st Division to the
Secretary to Govt
D. P. W. Madras

2 With regard to the breadth of the foundation being about two feet, there must be some mistake; it would be well to look again and see if the foundation and basement are not in one, and, with a batter, in which case the thickness of the walls plus that of the offsets would not give the correct thickness of the foundation; should this thickness turn out to be one inch less than that shown in the plan and Estimate, I will pay the cost of the whole building.

3 The usual soil at Seetanagrum is the black cotton, this building is located on the best site that could be found, the apese of a flat cone,- that is the ground slopes away from the building in all directions,- and as soils do not continue indefinitely nor are they parallel, it is presumable that the surface soil here if black cotton, is not very thick, and the Lime kunkar which underlies it, makes of course a perfect foundation, but as the ground does not get very muddy in the rains (I have encamped there in rainy weather) and the apothecary Mr. Lears a very scientific man, built his house as close to this building as he was allowed, it is not probable that there is much the matter with the surface soil. As regards the sub-soil, the walls of this building are of stone and the roof of jungle wood and tiles, which are light, and the weight of the whole is not so equally distributed as it ought to be, and the foundations have the minimum thickness and do not appear to have yielded, so that the sub-soil cannot be very bad: and the necessity for an artificial foundation is not made out, and there is not a house in the Vizagapatam District that has such a thing.

4 I further beg to remark that this building could not have got into its present state all at once unless the mischief has been caused by an earthquake, and if my successors thought that the foundation was failing or likely to fail, it is a little strange that they did not try to prevent it and not wait till the building is on the point of tumbling and then to recommend that it should be abandoned and hand up the names of the persons who built it. The Code says plainly enough that the Officers of the Department are responsible for the good condition of all completed works within their respective circles; and this building is ten years old and has already paid for itself. What this building requires, and what it did require on the day it was finished, is, two buttresses, tie rods for the rafters and paving with lime kunkar around the building and this could be done for about one hundred Rupees. In conclusion it is but right that I should state that I have written from memory.

I have the honor to be
Sir
Your most Obedient Servant
J. [illegible]
Sub Engineer

No 357 Camp Parvatipore

No 30 of Vizianagrum Range Office

Vizagapatam District. 20th February 1872

From

The Superviser in Charge

No 3 Range Vizagapatam District.

To

The Superintending Engineer

1st Division

Dowlaitcherum

Sir,

Agreeable to your Memorandum No 2889 dated 15th December 1871, and with reference to the documents which accompanied the same I have the honor to submit the following report on the present State of the Police Station House at Seetanagrum.

From an inspection of the building this morning, I have no hesitation in pronouncing it unsafe in fact to be in a dangerous State and its present abandonment or rather non-occupation by the police; a judicious proceeding. For the building will shortly Collapse. The rear wall is diffuse with vertical Cracks, extending from top to about half way down; they are much wider at the top than at bottom: The Cracks

No. 1872 Dated Vizagapatam the 20th February 1872.

From

Lieut. [illegible]

Officiating Superintendent

Vizagapatam Police.

To

The Superintending Engineer

1st Division

Dowlaitcherum.

Sir,

I have the honor to forward herewith a Report from the Superviser in Charge of the Police Station House at Vizianagrum in the Vizagapatam District

No 2889 dated 15th December 1871

Cracks which affect the stability of the structure and which are both wide and deep, are those which are at the angles of the building, where the rear walls joins the sides.

The form of the Cracks clearly shows that the walls have been subject to an outward thrust, bearing most on the upper portions. And this borne out by the depression distinctly visable in the ridge of the building, Especially towards the centre, and which has caused a corresponding kick or thrust along the hip or Corner rafters; and they being fixed to the Corners of the building have acted on the same.

The Couple rafters have also participated in this thrust, thereby bearing on the front and rear walls and causing the Cracks which exist in them.

The Cracks in the front walls are few, and not dangerous, and are to be accounted for by the support given to it by the verandah abutting on it.

The soil on which the building stands may be classed amongest the "black Cotton" soils.

It is of a dark brown Color and interspersed with small lime stone nodules. It is Susceptible of extreme Changes swelling out and becoming plastic when moistened. During very hot and dry weather contracting Considerably, so as to leave deep and narrow fissures (as I observed around the building) and forming itself into hard masses.

Owing to successive dry and wet seasons settlements have doubtless occurred in the soil, it yeelding to the superincumbent weight of the structure.

This settlement (presumeably an irregular one) causing the depression in the roof, and a corresponding yielding in other weak portions of the building.

On Examining the foundation (which as well as the walls above is built of rough stone in Chunam) I found it sunk 3 feet in depth with a breadth of about 2 feet only. This breadth I consider quite insufficient in such yielding soil, to resist the lateral pressure to which the foundations are subjected.

In my opinion the failure of the structure is entirely due to insufficient precaution being taken to form a firm sub-soil on which the foundations ought to have been laid and to the limited breadth given to it as a base necessary to guard against the settlement natural in such soils as that on which the Police Station at Seetanagrum is erected.

The building which in accordance with the Standard plan for 2nd Class Police stations was constructed in 1862-63 when Mr Superviser (now Sub Engineer) Hudson was in Charge of the range and under the immediate superintendence of C. Gurrinah a late Sub Overseer in the Department

I beg to remain

Sir,

Your most Obedient Servant

(Signed) W Baker

Superviser in Charge

No 3 Range Vizagapatam District

(True Copy)

Wm. F. Fischer Lieut Col R.E.

Ag. Superintending Engineer 1st Dn

Superintendence Engineer Office
Doveton near Madras 11th June 1872

No 977.

From

Lieutenant Colonel [illegible] Fischer RE
Superintending Engineer 1st Division

To

Colonel G. H. Walker RE
Secretary to Government P.W.D.
Madras.

Sir

1 Ltr. from Secretary

I duly sent to G.O. of the 9th April Cast. No 78, and its enclosures, I have the honor to forward a plan of the Station House at Sedanagrum as constructed, received to the docket No 116 dated 5th Instant, from the Officer in charge of the party.

2 Mr. Hudson has apparently made some mistake when submitting his explanations to Government. He states "the plan was a standard one, and I had strict Orders to adhere to it" — Now the standard plan sent to me, and herewith returned, shows a flat roof, whereas the building as constructed, has a tiled roof, and this

29/6
2nd
1872

P.W. 1447/72.

Enclosures as
letter, 2 Plans
2nd Endorsement
Acting Engineer
1st Division
Assistant Engineer
Deputy Engineer

this is also noted in Mr Hudson's
explanations. I am quite at a loss therefore
to account for this discrepancy -

3. Further, the span of the building
is only 15 feet, and I do not therefore
consider the objections urged by Mr Hudson
regarding the roof to be of much importance -
it appears to me the Building has far
too many openings in the walls, in fact
as built, it is almost all doors, windows,
and ventilators, apparently without any
proper Arch work over them, but until
the point is established, if this was the
standard plan given to Mr Hudson to follow,
no satisfactory results can be arrived
at, tho' I cannot but imagine, the
foundations must be at fault too -
for no such soil as described by
Mr Baker in his letter No 357 dated
the 20th February 1872, a depth of 2 feet
of

of Concrete at least should have been
spread for the foundations to rest on -

I have the honour to
be
Your most Obed.t Serv.t
Thos Matthews Lieut Col RE
Dr. Superintending Engineer 1st Div

Estimate No: 1871/72 37

Salary Rs. [illegible]

Actual - Vizagapatam [illegible]

Estimate of the Probable cost of Repairs &c. to Native Station House at Santaniagram.

Number	Length in Feet	Breadth in Feet	Height in Feet	Superficial area	Cubic contents	Description of Work	Rate	Remarks	Total
2	36½	2½	6	"	1095	Foundation of side walls			
4	15	2½	6	"	900	do. of cross walls			
2	9	2½	6	"	135	do — do.			
4	36	1½	12	"	1296	Side walls above			
2	15	1½	12	"	1080	Cross walls do.			
1	3	1½	12	"	162	do do.			
					7088				
					648	deduct for door Venn doors			
					4020	or 149 cubic yds of Burnt Stone			
						in chunam	2 "	Rs 298 "	
2	7½	1	5	"	85				
1	9	1	2½	"	22½				
					107½	or 4 cubic yds of brick in chunam	3 "	Rs 12 "	
4	36	12	"	17	28	Front and Rear walls			
4	36	1½	"	1	8	Flanking walls for Verandah			
2	15	1½	"	0	45	do of Ends			
2	16	12	"	15	35	Cross and back walls			
2	8	4	"	1	28	Gables			
				35	44	Total of Masonry Works	2 "	Rs 71 "	

Rec'd 9 April/72 Rec'd 18 Ditto

No. 1071. 1872. Vizag

From Govt for Rs. 2977.

The Superintending Engineer

1st Division

To

The Secretary to Government

G.O.S.

Dated 11th June 1872

Received 17 "

No. 2977

Enclosure Three

Subject Station

Forwards a plan of the Station House at Santaniagram as Constructed, received from the Officer in charge of No 3 Range Vizagapatam as called for in G.O. No 78 dated 9th April 1872 and offers certain observations thereon.

No 2863 - 5th Dec 1872.

No 163

Dept 16 Dated 19 June/72

						Brought Over					381	"	"		
4	36	12	"	17	28		Front and Rear walls								
2	36	1½	"	1	6		Buttress for ditto								
2	15	1½	"	"	45		Do at ends								
8	15	12	"	15	35		Cross and End walls								
4	8	4	"	1	28		Gables								
				35	45										
					0	35½	Sqrs of Corrugated Iron	"	4	"	80	8	14	"	
							7 80/100 Sqrs of Roofing	3	8	"	80	27	4	9	
							2 7/8 Sqrs Bengal Roofing	8	"	"	80	21	9	7	
1	16	⅓	½	"	"	2 ⅓	Ridge pole								
4	16	⅓	½	"	"	10⅔	Purlins								
8	13	¾	7/24	"	"	6 23/72	Rafters								
						19	Cubic ft of Sal wood wrought & put up	2	"	"	64	38	"	"	
							Sundries							476	12 4
							Total Rs							43	3 8
														520	0 0

P.W.S. 5894/72.

No 3 Range Office
Vizianagram 21st June 1871

(Signed) J Comac Ewences
In charge of Vizianagram Range

True Copy

W Bethell
Superintendent
In charge of Vizianagram Range

No 3 Range Office
Vizianagram July 1872

This Schedule was prepared at the request of the Police Department

Matthew Lind Capt
Actg Deputy Insp Genl

Secretariat Engineer Office
Vizianagram 23rd October 1872

From,

Major J Beatty RE
Executive Engineer

To,

Lieutenant C A Fischer RE
Assistant Executive Engineer 1st Class
Dowlaiswaram

Sir,

I have the honor to report for the Collector's information the Causes of the failure, after a personal Inspection of the building.

2. The site of the Station House, which is probably the best procurable in a very flat part of the District, is a small patch of ground about 18 inches above the general level of the surrounding neighbourhood, and in the midst of swamps or wet cultivation. The soil is black cotton containing small pieces of Kunker lime.

3. There had been fine weather for about 36 hours previous to my visit.

6

to the place, but this had been preceded by some days heavy rain, and owing to the total absence of any attempt at drainage, I could not walk 50 yards from the Station House in any direction on dry ground.

4. The walls and foundations are of good rubble masonry, and the brick arching over doors and windows was probably very fair work. The floor was of brick on edge plastered. Both walls and floor are badly cracked in every direction, as shown on the accompanying Sketch plan, and the cracks extend through the basement into the foundations. It is on account of these dangerous looking cracks that the Station House is objected to by the Police Department, and no longer occupied by them.

5. The roof is a tiled one; the wood work which is of country wood (Guggelapu-Karra) in the centre rooms is couples and Collar beams, and in the end rooms hip and corner rafters. It has spread a little, but still holds together well, and seems to have leaked very little, if at all, in the recent heavy rains. Some of the couples are cracked and bent at the junction with the lower collar beams.

6. Through the cracks in the walls white ants have mounted to the wood-work, and as this is partly buried in the Masonry it is impossible to say how much of it would have to be renewed in putting up a new building.

7. My opinion is that the cracks are mainly due to the unequal settlement of the entire base of the building, but especially the back and end walls.

The

The foundations are now 2½ feet thick by 3 feet deep below the surface of the ground. Probably in such a soil and site a broader foundation, resting on a foot of concrete is what was needed.

8. But in addition to the insufficiency of foundation the weak style of framework / couples and collar beams &c / supporting the roof, has undoubtedly aided in throwing the walls out of position. When this kind of roof spreads at all, as it is sure to do as soon as the weight of tiling comes upon it, and still more when weakened by nails rusting and the attacks of insects &c, the walls must be thrust out and damaged. I would never use collar beams, but in preference fasten the rafters to a ridge pole and purlins, thereby avoiding the lateral pressure on the walls.

9. In August last, before Mr Baker heard that you had directed Mr Turner to inspect the building, he had pulled down the Verandah, and I believe purposed demolishing the entire building; but under what authority I have been unable to ascertain. Overseer Kristiarow thinks it was done at the request of the Police Department.

10. It might be possible to buttress the walls and strengthen the roof so as to make the building safe and habitable, but there would be some risk attending the operation. There is also danger from further settlement in the site, and as part of the building has already been taken down, and as it is understood that the Police Department would not now select Sitana = grow as the most convenient place for a Station House, I shall not propose attempting to repair the building.

11. The estimate of Mr Supervisor Cornac, when

when Range Officer in June 1871, (amounting to Rupees 520/) for repairing the building should more properly have been entitled an estimate for reconstruction, with the aid of the old materials. I send herewith a copy of it.-

12. The original plan and estimate furnished to the Overseer employed on the building of the Station House have not been preserved, and no copies of them can be found in the Range Office records. The old estimate book of the Range Office for 1860-61 is in a very imperfect state, have apparently suffered severely in the great Cyclone that visited Vizianagrum in 1867; and up to the middle of 1862, many of the pages are either missing or illegible.

13. The Station House was built according

× Vid. G.O. No 80 of 8 January 1862

45

according to the standard plan of a 2d. class Police Station. The work was commenced on 19th March 1862, under the orders of the District Engineer in his Memo No. 1327 of 28th February 1862, and finished in September 1862. Mr. F. Hudson was then the Executive Agent in charge of the Range, and the work was superintended by Overseer Chetty Ummiah

14. I need only further observe, in reference to the enquiry by Colonel Walker in his Memorandum of 22d June 1872, that except in a few large towns of the District such as Vizianagrum, terraced roofs are rarely seen, while in the Village of Sitanagrum alone there are about 27 tiled buildings.

I have &c.
(sd) J. Beatty Major R.E.
Executive Engineer

True Copy
(sd) W. H. Lucas Lieut. Col. R.E.
Actg. Superintending Engineer 1st Div.

P.W. 2572/72

No 2812

Superintending Engr's Office 1st Divn
Commencement 7th November 72
Despd 9th

From

Lieutenant Colonel A.F. Fischer RE
Asst Superintending Engineer 1st Divn

To

Colonel G.H. Walker RE
Secretary to Government PWD
Madras

Sir,

I have the honor to forward copies of Major Beatty's report and its accompaniments on the Silanagarum Police Station house. I had purposed to go on there myself but was prevented doing so by a sharp attack of fever and ague. After effecting the Collector's order not to avoid exposure to the sun for the time.

2nd The Building it will be seen has been constructed according to a standard plan but on a cramped soil

for

for which sufficient foundations were not provided, the roof also is very weak & not in other respects the Materials used appear to have been good

3. I have already returned all the papers sent to me regarding this work and Major Beatty reports no others are forthcoming. I now beg to add I am not aware on what authority it was partly demolished or the Estimate prepared for its reconstruction; it appears from Major Beatty's report the Police Department are not likely to retain Silan again as a Station, it would then perhaps be as well to sell the Materials by auction to recover as much of the loss as possible; on such a sale it would be very unadvisable

to attempt any re-construction on the present foundations these would have to be taken out altogether and a broad base of concrete laid 9 or 10 feet wide and 1½ or 2 feet thick under the walls and to beyond the verandah pillars all round the Building to secure the structure

I have the honorable
to be
Your Most Obedt Servt
Wm. H. Meadows Lieut Colonel R.E.
Superintending Engineer &c.

P.M. Dispatch

Proceedings of the Madras Government
Read the following

From the Inspector Genl
of Police

(Here enter Abstract of Letter)

From the Assistant Supt
No ——— Do ———

(Here enter Abstract of Letter)

From Conductor J. Hutton
Asst Supt

(Here enter Abstract of Letter)

From Asst Supt
No ——— Do ———

(Here enter Abstract of Letter)

Proceedings of the Madras Government
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From Conductor J. Hutton
Asst Supt

(Here enter Abstract of Letter)

From Asst Supt
No ——— Do ———

(Here enter Abstract of Letter)

G.O.W. 1872 Depart
Proceedings for Decr
From No. 5589.

The Asst. Secy. to Govt.
1st Divn.

To,

The Secy. to Govt.
Dept. Public Works
Madras.

Dated 7th Novr. 1872.

Rec. 14——"

2-E. No. 2812

1-D. "

Enclosure Three

Subject

Forwards copies of
Major Broadley's Report
and its accompaniments
on the Dertanagarum
Station House—

No. 2863 - 5th Dec. 1872

G.O. 1804

Chittoor

of the soil, which called
for considerable modifica-
tion of the dimensions
of the foundations laid
down in the Standard
Plans Specifications which
was required, and a
bed of concrete on which
to spread the weight of
the superstructures. A
tiled roof was properly
enough substituted for
the terraced roof shewn
in the Standard plans,
consistently with local
usage, but such change
of construction should
also have involved gable
ends, and the use of
Ridge poles and purlins
to

to support the Rafters,
instead of Couples.

His Excellency
the Governor in Council
will hold Districts
Engineers answerable
for the proper adapta-
tion of the foundations
of all buildings to the
exact sites which they
are to occupy. And
the Inspecting Engineer
for Civil and Military
Buildings will take
care to ascertain that
this point has been
specially attended to
in the preparation of
all plans that have
throughout

through his hands. Where it may be necessary to use coupled roofs the greatest care should be taken to ensure the proper framing together of the timbers.

The materials of this building will be utilized as far as possible as directed by the Inspector General of Police, and plans and estimates submitted in due course for the new buildings mentioned in his letter.

Desp. 9/12/72.
To the Dy. Insp., Vizagapatam
all other Dys.
Supt. Engr. for Civil Work
Asst. Supts.
Supt. Govt. of Police

8 Nov/72

Cfs. 5737, 1502, 1657, 1157, 2977, 5589,

Govt. of Madras.

PUBLIC WORKS.

To The Collector Cuyp.
Vizagapatam

Dated

Read. Encl. 12

G. O. 5th Dec. 1872. No. 2863.

Nos. 330/115

Plan Station house at Tekanagram, Vizagapatam District. Papers & Letters on papers relating thereto. Station house at Tekanagram.