(1) Number of pages 32

(2) Date of repair 4.9.86

(3) Initials of the Referencer

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W.D DEPARTMENT

G.O. No.
B.P. No. 8854 W
Press.
Mis.

Dated 2.10.1878 197

Not to be folded or roughly handled

Archives'1—10,006—19-4-79.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

2nd October 1878, No. 3,854 W.

Buildings and Roads.
Civil Works.

Read the following papers :—

No. 40. From Captain R. R. E. BROCKMAN, R.E., District Engineer, Tanjore, to the Chief Engineer, Public Works Department, dated Noothellu Sivalingum, 23rd May 1878, No. 1,088.

I HAVE the honor to forward for the sanction of Government and for the special allotment of funds the enclosed plan and estimate, amounting to Rupees 390 for rebuilding Police Station-house at Kottoor and fixing ventilators in the walls, also a copy of letter, No. 39, dated 30th January 1878, from the Officer in charge of Mannargudi Division, explaining the necessity of re-arching the building.

One plan.
One estimate.
One report to accompany estimate.
One copy of letter.

2. The plan and estimate have been duly countersigned by the Inspector-General of Police in token of his approval.

3. I request, therefore, you will be good enough to move the Government for a special allotment for the work in question, as the Inspector-General of Police in his memorandum No. 2,017, dated 11th May 1878, has stated that the district allotments for the current year cannot bear the charge.

From J. A. FOX, Esq., Sub-Engineer in charge Mannargudi Division, to the District Engineer, Tanjore, dated Kattathy, 30th January 1878, No. 39.

WITH reference to your docket No. 2,182, dated 21st December, and its enclosures herewith returned, I have the honor to report that I have inspected the Police Station at Kottoor and consider that the cause of the cracks and leakage in the arch is owing to its faulty construction and the manner in which the bricks in it are laid, and not to the yielding of the foundation or to the insufficiency of the strength of the walls. I enclose a plan showing the manner in which the bricks are laid in the arch, and it will be observed that they are so placed that there is no pressure in the direction of the face or broadest side of each brick to keep the joints together, and to make the mortar in them well compressed and impervious to water as is the case of the horizontal joints of bricks in a wall.

2. I opened out the plaster and a layer of flat bricks laid on the top of the arch, and exposed the arch bricks to view, and after careful inspection ascertained the manner in which the bricks were laid. The plaster on top over the flat bricks as well as the coating of tar has a net-work of fine cracks, chiefly around each flat tile ; the coating of tar of course cracked with the plaster. The flat tiles are well laid, but the stuff found below them and above the arch bricks is soft and gets very easily pulverised, and the rain appears to first get through the cracks in the plaster between the joints of the flat tiles, and then through the soft porous chunam supposed to be intended for concrete, and finally finds its way down between the loose and incompressed joints of the arch bricks.

3. The arch inside was quite wet, although it had not rained for many days, and a view of it from inside reminds one of a wet tent in a heavy rain.

4. The stuff, 2¼ inch thick, below the flat tiles is neither concrete nor pure mortar, but a loose mixture of mortar, lime stone (" kuppy "), and minute pieces of bricks. Whether this is an attempt at " soorkee " mortar or not I do not know.

5. The coating of tar to the arch outside appears to have added to the troubles of the roof, as the black coating must necessarily have been subject to greater extremes of heat and cold and helped perhaps to expand and contract the flat tiles in a greater degree than formerly and thus helped the joints to crack, and as the concrete below as well as the brick on edge were loose and porous, the plaster of the inner roof always kept wet and communicated its moisture even to the plaster of the walls down to floor level.

6. Considering that the walls are 2 feet wide and not high, and the foundations carried very deep, I fully believe there is no danger in the foundation. The rear wall, though very slightly cracked in one or two places, does not appear to have lost its perpendicular position in the least, and, as the arch is semi-circular, there is no lateral thrust. Moreover there is an error made in the construction of the foundation that adds to its stability, and the floor level, instead of being 1½ feet above the level of the ground, is built on a level with it, so that the foundations have been taken half a yard lower than the depth estimated.

7. In my opinion the whole fault is in the arch itself, which, like numerous arches of its kind found among pagodas in this district, may one day collapse without the walls shifting in the least. I would therefore propose removing the arch completely, as in its method of construction it ignores the principles of engineering, and of rebuilding it like bridges in general without any attempt to giving it a " dome-like " appearance, the ends being closed or gabled up.

8. The smaller arch of the verandah is said to have once fallen in during construction and built up again, and does not appear to be so subject to moisture as the larger arch. It is built semi-circular, and is not the segmental arch shown in the plan. Buttresses may be added to the rear wall, but really believe they are unnecessary, as there does not appear to be any settlement of the foundation, notwithstanding the very heavy monsoon experienced this year and the numerous cracks found in the arch.

9. I forward for your inspection the plan and specification of the building. In the latter it will be observed that, although extensive detail instructions are given as to how mortar and plaster are to be made and laid on, no attempt whatever is made to define the manner in which the " dome " was to be constructed and its bricks to be laid, and it is most surprising therefore that when a peculiar shaped plan of a roof of the pagoda style was handed to the maistry that he should have adopted the usual custom of constructing such arches in this part of the country. What induced me to examine the detail construction of the arch was that I have observed similar looking arches in numerous pagodas in this part of the district collapse without the wall being in any way injured or in fault.

10. The building is also sadly in want of ventilation; all recent improvements observed in the ventilation of public buildings have been ignored in this, and one feels stifled and hot after remaining a few minutes in the building. The rooms are not fit to confine prisoners in, and I would propose a window in the centre of the rear wall and two ventilators in each of the side rooms; but before submitting the estimate, I beg your opinion on the matter brought to light with reference to the mode of construction adopted in the arch.

11. I am given to understand that the Sub-Overseer who was immediately in charge of this work during construction was one Ganapathi Pillay.

No. 40-A. From the same Officer, dated Shiyali, 11th June 1878, No. 1,268.

WITH reference to your memorandum, No. 2,426, of the 3rd instant, calling for some information relative to the rebuilding of the Police Station-house at Kottoor, I have the honor to inform you that it was designed by the late Superintending Engineer Colonel Roberts, R.E., and was executed by Sub-Engineer Mooneappa Pillay by the agency of late Sub-Overseer Ganapathi Pillay, who was reduced by me to the temporary establishment a year ago for bad work.

2. This work was commenced in March 1875 and was completed in March 1876.

No. 41. ORDER THEREON, 2nd October 1878, No. 3,854 W.

THE plan and estimate of Rupees 475 for rebuilding the roof of the Police Station-house at Kottoor and fixing ventilators in the walls as designed and estimated for by the Chief Engineer are sanctioned, and funds appropriated from the Provincial Reserve, as a special case.

2. The District Engineer will take care that the ventilators are fixed as near the ceiling of the cells as possible.

3. This sanction has been registered as Provincial No. 108 B of 1878-79.

(True Extract.)

(Signed) E. A. FOORD, Colonel, R.E.,
Secretary to Govt., P.W.D.

(True Copy.)

Major, R.E.,
Under Secy. to Govt., P.W.D.

To the District Engineer, Tanjore, with plan and estimate.
" Examiner of Public Works Accounts.
" Inspector-General of Police.
" Judicial Department.

Exd. T. D. Ryan.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of [1878] Madras.
PUBLIC WORKS.

To

THE DISTRICT ENGINEER,
TANJORE
&c., &c., &c.

Dated October 2nd.

Issued

Recd.* Encl.

G. O., 2nd October 1878, No. 3,854 W.

OCTOBER.
Nos. 40-41.

Police Station-house, Kottoor, Tanjore, —The plan and estimate for rebuilding the roof and fixing ventilators in the walls of the —, sanctioned.

District Engineer's office
Camp Koothetta Sivalingum
23d May 1878

3854/3

No 1088.

From
Captain R. R. E. Brockman RE
District Engineer, Tanjore

To Colonel E. A. Foord R. E
Chief Engineer DPW
Buildings & Roads.

Sir,

I have the honor to forward for the sanction of Government and for the special allotment of funds the enclosed Plan and Estimate— amounting to Rs 390 for rebuilding th. Police Station House at Kottur and fixing ventilators in the walls; also a copy of letter No 39 dated 30 Jany 1878 from the officer in Charge of Manargoody Division explaining the necessity of rearching the building.

The Plan and Estimate have been

been duly countersigned by the Inspector General of Police in token of his approval.

I request therefore you will be good enough to move the Government for a special allotment for the work in question as the Inspector General of Police in his Memorandum No 2017 dated 11 May 1878 has stated that the District allotments for the current year cannot bear the charge

I have the Honor to be
Sir,
Your most obedient Servant
Captain R.E
District Engineer, Tanjore

[illegible]

From No 5963
the Distt Engineer
Tanjore
To
the Chief Engineer
Buildings

No. 1088

Dated 23d May 78
Recd 22

Sec. 4.

Policestation house at
Kotur.
Forwards for sanction
Plan & estimate No 390,
for rebuilding the —

To Acty 31-5-78
To Acty again 26-6-78

Manargoody Division Office
No 39 Camp. Kattuthy 30th January 1878
4133
383/5

From
Mr. J. A. Fox Sub Engineer
in charge Manargoody Division
Manargoody

To
Captain R. R. E. Brockman R.E.
District Engineer
Tanjore

Sir

With reference to your
Docket No. 2182 dated 21st December
and its Enclosures herewith returned
I have the honor to report that I
have inspected the Police station at
Kotur and Consider that the Cause of
the cracks and leakage in the arch
is owing to its faulty Construction
and the manner in which the bricks
in it are laid, and not to the
yielding of the foundation or to
the insufficiency of the strength of the
walls. I enclose a Plan showing
the manner in which the bricks
are laid in the arch, and it will be
observed that they are so placed that
there is no pressure in the direction
of the face or broadest side of each
brick to keep the joints together,

And

and to make the mortor in them well compressed and impervious to water as is the case of the horizontal joints of bricks in a wall.

2 I opened out the plaster and a layer of flat bricks laid on the top of the arch, and exposed the arch bricks to view, and after careful inspection ascertained the manner in which the bricks were laid. The plaster on top over the flat bricks as well as the coating of tar has a net work of fine cracks chiefly around each flat tile, the coating of tar of course cracked with the plaster. The flat tiles are well laid, but the stuff found below them, and above the arch bricks is soft and gets very easily pulverized, and the rain appears to first get through the cracks in the plaster between the joints of the flat tiles, and then through the soft porous chunam — supposed to be intended for concrete — and finally finds its way down between the loose and uncompressed joints of the arch bricks.

3 The arch inside was quite wet although it had not rained for many days and a view of it from inside reminds one of a wet tent in a heavy rain.

4 The stuff 2¼" thick below the flat tiles is neither concrete nor pure mortar but a loose mixture of mortor, lime stone ("Kuppy") and minute pieces of bricks. Wether this is an attempt at "coorkee" mortor or not I dont know.

5 The coating of tar to the arch outside appears to have added to the troubles of the roof, as the black coating must necessarily have been subject to greater extremes of heat and cold, and helped perhaps to expand and contract the flat tiles in a greater degree than formerly and thus helped the joints to crack, and as the concrete below as well as the brick on edge were loose and porous, the plaster of the inner roof always kept wet, and communicated its moisture even to the plaster of the walls down to floor level.

6. Considering that the walls are 2 feet wide and not high, and the foundations carried very deep, I fully believe there is no danger in the foundation. The rear wall through very slightly cracked in one or two places does not appear to have lost its perpendicular portion in the least, and as the arch is semicircular, there is no lateral thrust. Moreover there is an error made in the Construction of the foundation that adds to its stability and the floor level instead of being 1½ feet above the level of the ground is built on a level with it, so that the foundations have been taken half a yard lower than the depth estimated.

7. In my opinion the whole fault is in the arch itself, which, like numerous arches of its kind found among Pagodas in this District may one day collapse without the walls shifting in the least. I would therefore propose removing the arch completely as in its method of Construction it ignores the principles of Engineering and of rebuilding it like Bridges in general without any attempt to giving it a "Dome"-like appearance, the sides being closed or gabled up.

8. The smaller arch of the Verandah is said to have once fallen in during construction and built up again and does not appear to be so subject to moisture as the larger arch. It is built semicircular, and is not the segmental arch shewn in the Plan. Buttresses may be added to the rear wall, but really believe they are unnecessary, as there does not appear to be any settlement of the foundation notwithstanding the very heavy monsoon experienced this year and the numerous cracks found in the arch.

9. I forward for your inspection the Plan and specification of the building. In the latter it will be observed that although extensive detail instructions are given as to how mortar and plaster are to be made and laid on, no attempt whatever is made to define the manner in which the "Dome" was to be Constructed and its bricks o be laid, and it is most surprising erefore that when a peculiar haped Plan of a roof of the agoda style was handed to the laistry, that he should have dopted the usual custom of nstructing such arches in this art of the Country. What induced e to examine the detail Construction of the

of the arch was that I have observed similar looking arches in numerous Pagodas in this part of the District collapse without the wall being in any way injured or in fault.

10 The building is also sadly in want of ventilation, all recent improvements observed in the ventilation of Public Buildings have been ignored in this, and one feels stifled and hot after remaining a few minutes in the building. The rooms are not fit to confine prisoners in and I would propose a window in the centre of the rear wall and two ventilators in each of the side rooms, but before submitting the estimate, I beg your opinion on the matter brought to light with reference to the mode of construction adopted in the arch.

11. I am given to understand that the subovermeer who was immediately in charge of this work during construction was one Ganapathy Pilly.

I beg &c

(signed) J. A. Fox
Sub Engineer Manargudi

(True copy)

[illegible]
Captain RE

District Engineer Tanjore

Enclosure in a letter from the District Engineer Tanjore to the Chief Engr. Buildings - No. 1088 dated 23 May 78.

[illegible] 63/78

Copy of letter No. 39 dated 30th January 78 from the Officer in Charge of No. 4 Range to the Distt Engineer.

No. 1268

District Engineer's Office
Camp Shealy
11th June 78. 385/9

From

Captain R.R.E. Brockman R.E.
District Engineer, Tanjore

To

Colonel E.A. Foord R.E.
Chief Engineer D.P.W.
Buildings & Roads. Branch.

Sir,

With reference to your memorandum No. 2426 of the 3rd instant calling for some information relative to the rebuilding of the Police Station House at Kottoor, I have the honor to inform you that it was designed by the late Superintending Engineer Colonel Roberts R.E. and was executed by Sub Engineer Moonappa Pillay by the agency of late Sub overseer Ganapathi Pillay who was reduced by me to the Temporary Establishment a year ago for bad work.

This work was com:

:menced

:menced in March 1875 and was completed in March 1876.

I have the honor to be
Sir
Your most obedient Servant
A N Damrell Captain U.E.
District Engineer

C.E. 2426 of 3-6-78.

Buildings.

No 6758.

From
the Dist. Engineer
Tanjore
To
the Chief Engineer
Buildings.

No. 1268

Dated 11 June 78
Recd 16 —

Police station house
at Kottur - Tanjore Distt.
Regarding the —

To Asty 15-6-78 Pats 28-6-[illegible]
To Asty again 26-6-78 [illegible]
Cir 23-9-78. Retd 2-10-78

3859
11

I believe this Police Station was designed by Colonel Roberts in the Saracenic Style and the arches not having been built properly the roof has cracked and leaks. If the arches are rebuilt as now proposed I think it is possible the verandah pillars and arches may give way the thickness of these pillars is only 1½ feet and the span of the arch is 6 feet What would be the cost of reroofing according to the Standard plan. The hollow between the two arches outside is objectionable

18/6 EAT

Requested Ex. Dist. Engr to submit an estimate according to Standard plan for reroofing — [illegible]
21.6.

... arched window
is

3854
12

Report to accompany Estimate for the repairs of the Police Station House at Kottoor

The arch or dome looking roof leaks very much in Consequence of the bricks in it having been laid in the Carnatic Pagoda style, viz in courses vertically across the arch. The existing arches are therefore to be demolished and rebuilt, and the bricks are to be laid in the ordinary Engineering style observed in the building of arches generally. The arches are to be Semicircular and one and a half bricks thick, Covered with 2 inches of Concrete and plaster. The ends of the arches are to be closed in with brick in Chunam walls up to the intrados of the arch, and as the building is quite deficient in ventilation, these walls are each to have an iron barred ventilator 3'×2' fixed in them. There are to be also 2 Small iron barred ventilators each 2½' × 1½' fixed in the rear walls in each of the prison rooms, and an iron barred window is

78. Rltd 2-10-78

is to be introduced also in the rear wall of the centre room. As there is no Settlement in the foundation apparent, no provision is made for buttresses

(Signed) J. A. Fox
Sub Engineer

Captain R.E.
District Engineer Saugor

District Engineer's office
3d May 1878
MPB
3/5/78

Enclosure in a letter from the Distt Engineer Tanjore to the Chief Engr Buildings No. 1088 dated 23d May 78

B 5963/78

Report to accompany Estimate for the repairs of the Police station house at Kottur

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3354
34

Tanjore District
No. 4 or Mannargoody Division
Mannargoody Taluq
Provincial
Original works
Civil Buildings
F. Police Department
ii Stations

Work. Rebuilding the roof of the Police station house at Kottoor and fixing ventilators in the walls.

Estimate No. I. J of 1878-79 Rs. 390 " "

Quantity	Description of work	Rate	Per	Amount
1196 $\frac{26}{32}$	Cft. of arch work brick in chunam	" 2 6	Cft.	186 15 10
245 $\frac{7}{12}$	Do. of Brick in chunam — at	" 2 3	Do.	34 8 7
122	Rft. of cornice throughout — at	" 3 3	Rft.	24 12 6
21·63¾	Squares of Plastering 3 coats — at	2 8 "	Sqr.	54 1 6
89 $\frac{5}{12}$	Cft. of Concrete at top — at	" 1 6	Cft.	8 6 1
2	Ventilators (2×3) with iron bars Shutters &c Complete	7 8 "	Each	15 " "
2	Do. (2½×1½) in rear wall including demolishing & fixing them — at	6 " "	Do.	12 " "
	Carried over			335 12 6

			Rs.	As.	Ps.
	Brought forward		335	12	6
1	Window (3'×4') including iron bars shutters &c complete	15 " " each	15	"	"
	Removing present arch work and centring &c		20	"	"
			370	12	6
	Sundries &c at 5 per cent		19	3	6
	Total Estimate Rs.		390	"	"

(Signed) J. A. Fox
Sub Engineer

Captain R.E.
District Engineer Tanjore

District Engineer's office
3rd May 1878
M.R.
4/5/78

Chief Office of the I. G. of Police
Madras 11th May 1878.

Major.
Ag: Assist: Inspr: Genl: of Police

Enclosure in a letter
from the Distt Engr Tanjore
to the Chief Engr Buildings
No. 1088 dated 23 May 78

G.O. 3854 W - 2-10-78

Estimate R. 390 for
Rebuilding the Roof of
the Police Station House
at Kottur

B & R
Civil works

No 3854 W
Public Works Department.

3854/15

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 2 Oct 78.

Read the following :—

From the Dt Engr Tanjore (H.E. No. 1088 d/ 23d May/78)
" " Do Do (" " 1268 " 11" June ")

The plan and esti-
mate of Rs 475 for rebuild-
ing the roof of the Police
Station House at Kattoor
and fixing ventilators
in the walls as designed
and estimated for by
the Chief Engineer are
sanctioned, and funds
appropriated from the
Provincial Reserve, as
a special case.

The District Engineer
will take care that
the ventilators are
fixed as near the ceiling
of the cells as possible.

WH
23.9.78

EMF

D. E. Tanjore
with plan & Est.
Ins Mr. Auts
Inspr Genl of Police
W.P.W Jud Dept.
Sent 24-10-78

This sanction has
been registered as Prov
No 188 B. of 1878/79

Cir. 23.9.78 Ret 2.10.78
15.6.78

5963
6730

Gobt. of {1878} Madras.

PUBLIC WORKS.

To
D. E. Tanjore

Dated 9"

Issued

Recd.

Encl.

G. O., 2nd Octr 1878, No. 3856 W

Nos. 40 to 41

Police Station House, Kottoor
Tanjore

The plan and estimate for rebuilding the roof & fixing ventilators in the walls of the — sanctioned

5963

To Acty 11-10-78 Ints 14-10-78

15-6-10