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MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No.	1337	Press
B.P. No.		Mis.
Dated	10 - 5 -	4875 195.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
10th May 1875.*

Read the following papers —

No 238 From Captain H M VIBART, R E, District Engineer, Bangalore, to Colonel G. W WALKER, R.E, Chief Engineer, Public Works Department, dated Bangalore, 25th January 1875, No 202

I HAVE the honor to forward herewith a comparative statement showing the estimated and actual amount expended in reconstructing the Government Bakery at Bangalore

2 The statement shows an excess of Rupees 18,308-15-4 over the estimate sanctioned in G. O., No 243, dated 23rd February 1874, of which Rupees 8,000 has already been provided for during the present year, leaving a sum of Rupees 10,308-15-4 to be provided for in this year

3 The causes for the excess have been explained in the column of remarks of the statement

4. The bakery building has been completed and handed over to the Military Authorities. The ground in the vicinity has still to be cleared, and the amount required for this is included in the revised estimate

5 The submission of this estimate has been delayed owing to press of work caused partly by the conviction of Head Accountant Masilamoney Pillay, and by the office having been in consequence without a Head Accountant for three months

6 Besides this all the other Accountants have been absent from duty for a considerable time owing to severe sickness.

No. 239 From the District Engineer, Bangalore, dated 9th March 1875, No 238

No 240 ORDER THEREON, 10th May 1875, No 1,337

MILITARY WORKS, No 6

THE original estimate for the reconstruction of the Bangalore Bakery amounted to Rupees 24,150, and it was sanctioned in G O, No 95, of the 11th January 1873. A revised estimate was forwarded by the Inspecting Engineer for Civil and Military Buildings in January 1874, and sanctioned in G O, No 243, of the 3rd February 1874. It amounted to Rupees 35,700, and showed therefore an excess over the original one of Rupees 11,550

2 The District Engineer having now completed the building forwards a comparative statement from which it appears that the cost including the clearing away of the old and waste materials will reach the sum of Rupees 54,009, and that consequently the estimate originally presented will be exceeded by Rupees 29,859, [the second by Rupees 18,309]

3 The main cause of the discrepancy between the original and the second estimate was no doubt the difficulty of foreseeing in the first instance what would eventually be the value for purposes of reconstruction of the materials of which the existing building consisted, and it was not till the masonry and timber work were pulled down that their inferiority was ascertained. But it is not easy to understand why the real outlay in prospect was not thereafter fairly approximated to and entered in the second estimate, seeing that the District Engineer had the great advantage of being able to base his rates on work actually executed.

Proceedings of the Madras Government, Public Works Department,
10th May 1875.

An analysis of the excesses shows that they were chiefly caused by the under-estimation of quantities and rates and over-estimation of the value of materials available for use. The first accounted for an excess of Rupees 10,987, and the second caused a reduction in the recoveries of Rupees 4,151.

4 The chief excesses under the first were for—

	Rs
Stone-in-chunam in superstructure	2,847
Brick-in-chunam	898
Brick-in-clay	608
Teakwood wrought and put up	1,799
Tiled roofing	571
Refixing end roofs	757
Clearing yard	500

The quantities of the principal items allowed and those found necessary compare as follows —

	Last sanctioned estimate	Actually used.	Difference.
	C YDS	C YDS	C YDS
Masonry	44,497	50,771	6,274
Brickwork	11,148	14,567	3,419
Teakwood	2,275	2,346	71

The principal rates estimated for and those paid are shown below —

	Estimate per cubic foot	Paid per cubic foot
Masonry	0 3 9	0 4 3
Brickwork-in-chunam	0 2 9	0 4 0
Brick-in-clay	0 1 9	0 2 9
Teakwood wrought and put up	3 8 0	4 2 6½
Roofing	Per square 18 0 0	22 12 3

5 The rates on almost every item were exceeded and often largely exceeded, and as compared with those obtaining in other districts they are very high. The work executed seems however to be of exceptionally good quality, and the difficulty attending the introduction of the departmental in lieu of the contract system on a large building has to be borne in mind. The Government pass the excess already incurred, but His Excellency in Council after making allowance for the exceptional circumstances noted above must express his dissatisfaction at the manner in which this work has from its commencement until its present completion been dealt with by the officers of the Public Works Department.

6. The additional charge of Rupees 500 for clearing the ground which remains to be done is not sufficiently justified and cannot be accepted, and the amount of the estimate now sanctioned will therefore be Rupees 53,500.

(True Extract)

Major, R E,
Offg Joint Secretary to Government.

To the District Engineer, Bangalore
" Controller of Public Works Accounts

Exd W J Lewis,
Spare Copies

No 202.

DISTRICT ENGINEER'S OFFICE.

Bangalore 26 Jan 1875.

From

The District Engineer,

Bangalore.

To

The Chief Engineer

Public Works Department.

Madras

SIR,

I have the honor to forward herewith a comparative statement showing the estimated and actual amount expended in reconstructing the Government Bakery at Bangalore.

The statement shows an excess of Rs 18,308-15-4 over the estimate sanctioned in G.O. No 243 dated 23 February 1874, of which Rs 8,000 has already been provided for during the present year, leaving a sum of Rs 10,308-15-4 to be provided for in this year.

The causes for the excess have been explained in the Column

Fort St George
4th March 1875.

No 248

Memo

The District Engineer is requested to supply data for the following items in the revised estimate for the Bangalore Battery viz: Concrete 100 Cub. feet Brick in Channai - 100 C. ft. Brick in clay 10 C. ft. Quoin stones each and sill stones each - 30 ft Trusses each - Stone flooring (state thickness) per square.

By Order

Secy of Adm. Lt Col Major R.E.

Under Secy to Govt
P.W.D.

To The District Engineer Bangalore.

10115 Jan 1875 No 183-184 in the
right estimate in 1865/75
3rd Feb 1875 No 21-22 in right
Camp: 1865/75 in 1865/75
Camp: 1865/75 in 1865/75
12 statements
the District
by him of the

P.W.D. 1875 Sept
1875 No 1619
the South Bangalore

Bangalore

the District Secy
6 Fort St

1875 March 1875
1875/75

No 1 11th
1875

data called for
the Bangalore
No 24874 March 75

P.W.D. 1875 No 5. 95.

2-1-5-75
No 239

Deduct actual reserves

Net expenditure

Deduct amount of actual

already sanctioned

Amount requiring

sanction

Flooring All

Asphalted flooring 9 " " 25 " " 25 " "

Wooden stair case 20 " " 20 " " 20 " "

Portals under staircase All

Painted doors with

Placed fanlights } All

Painted doors All

Windows underneath All

Ventilating windows 4 " " 20 7 " " 20 8 9 5 20 4 9 5

Chocolate painting 25 5 " " 25 5 " " 25 2 1 " " 25 2 15 " " 5

Building and joining } All

Circumference } All

Refining doors to owner All

V Grains

Windows

Clearing land

Remaining lower story

Refining Machinery

Iron fastening round

By school

Wooden railings for

Upper verandah

Green plates - East door

Nature of work

Original Estimate

Comparative Statement for original estimate
1st series etc. 2nd series etc. also last series
-rate- -rate- estimate-

Per Rate Per Rate Per Rate Per Rate

Courses	eft	33 cft	33 cft	33 cft	33 cft	33 cft
Foundation stone in Chumam	13	3	3	3	19	3
Superstructure stone in Chumam	23	36	43	21	3	3
Three	hil					
Spandril	hil					
Arch work stone in Chumam	43	6	69	26		
Brick in Chumam	29	29	4	13	4	4
Arch work brick in Chumam	44	4	53	13	4	4
" in clay	3					
Brick in clay	19	19	29	1	2	2
Stone brick fire clay	6	9	101	41		
Arch work fire brick fire clay	96	12	134	310		

Wall flooring to overs

hil

Quoin stones to doors	18	15	8	136	8	46
Quoin stones to doors	12	12	157	37		
do to windows	5	15	136	46		
do	12	12	157	37		
fill stone to windows	5	5	86	86		

do to ventilating windows

hil

do for doors and windows

hil

filling courses to piers

hil

Cornice work

Alt	12	Alt	12	Alt	14	Alt	2	Alt	10
-----	----	-----	----	-----	----	-----	---	-----	----

Stone slabs for steps

"	4	"	4	"	310	"	2	"	2
---	---	---	---	---	-----	---	---	---	---

Ornamental parapets

£	1	"	£	1	"	£	1	"	£	1
---	---	---	---	---	---	---	---	---	---	---

Under Secy to Govt D.C.

Comparative Statement shewing the difference between the revised sanctioned estimate and work actually executed in constructing the Government Bakery at Bangalore.

Description of work	As Estimated			As actually executed			Amount	Increase	Decrease	Remarks
	Per	Quantity	Rate	Amount	Quantity	Rate	Amount			
Concrete	Cft	16,216	1	33	3294	16,216	1	33	3294	
Foundation stone in Chumam	Cft	20,423	1	3	3829	20,423	1	3	3829	
Basement stone in Chumam	Cft	9,346	1	3	1752	9,346	1	3	1752	
Superstructure stone in Chumam	Cft	41,014	1	36	8942	44,500	1	43	11,819	28,681
Piers	Cft				2494	68	1040	68	1040	68

Not understood

The excess in quantity to main walls, caused by the insertion of bearing stones and Corbels under timbers. In outer walls. The plan showed the size of doors within frames, where as the lintel and sill thicknesses had to be added, no allowance was made for splay of Arches which were shown plain. This raised the main walls as well as the outer ones.

Plates. This class of work was entirely new to the people employed; in the first place from stone instead of brick being the material used, and in the next from the superior nature of the work expected and actually executed. The Chumam used up to the springing of the arches was more expensive than usual, owing to a combination of the suppliers who were anxious to embarrass the Department, as they naturally objected to the change from Contract to Departmental work. The extra labor in building niches for reception of Machinery and the cost of 32 large stones under beams of end roof was also overlooked. No scaffolding was allowed for. The remarks as to quality of work, apply not only to this item but also to all others (particularly masonry) in the building.

This item was originally included as a portion of the superstructure, but a larger and more expensive stone being required it had to be transferred to another head. The labor of cutting and fitting the stones also much greater.

The work is very good

Comparative Statement showing the difference between the revised sanctioned estimate and work actually executed in constructing the Government Bakery at Bangalore.

Description of work.	As Estimated			As actually executed			Amount	Increase	Decrease	Remarks.	
	Per	Quantity	Rate	Quantity	Rate	Amount					
13. 0				14,847		21,434.92	3,217.92				
Spandrels	Cft	"	"	1451	50	529.02	529.02			Excess principally caused by load than anticipated and fitting stones	
Archwork stone in Chumam	Cft	3483	6.0	1306	3774	69	1609.85	303.85		Extra labor caused by cutting special stones. No allowance for centering temporary office and	
Brick in Chumam	Cft	6957	29	1195	8371	4	2093.51	898.51		The extra quantity owing to additional required by the Commissionerat Dept from the superior quality of bricks to heavy loads sustained throughout Departmentally outside the distance of 2 1/2 miles, consequent extra and cost of sheds, plant &c the of manufacture. Bricks of the used by this Department cost more than the common article for supply suppliers.	
Archwork brick in Chumam	Cft	2475	4	619	2474	53	811.60	192.60			
Brick in Clay	Cft	4194	19	459	6196	29	1064.13	608.13		The clay had to be brought from a distance of 10 miles and the quantity (under every have been allowed for as if the	
Fire brick fine clay	Cft	493	9	277	493	101	310.15	33.15		The same remarks as to the bricks,	
Archwork fire brick fine clay	Cft	803	12	602	803	134	669.15	64.15			
Salt flooring to Over	160lb	5380	5	43	144	6122	5	43	190.12	13.12	Done at the request of the Commissioner and quantity used than estimated shops.
Carried Over				22,482		29,014	6,535.74				

Brought Over				22482			2901474	653574		
Quoin stones to doors ⁴⁹	E	84	15	49	84	136	102112	23112		Work new to stone cutters and proportion
Quoin stones to doors ⁴²	E	88	12	66	88	157	85129	19129		Do Do
Do to Windows ⁹³	E	150	15	141	150	136	18349	4249		Do Do
Do Do ⁸³	E	160	12	120	160	157	156	36		Do Do
Gill stones to Windows ⁵⁵	E	10	5	50	34	586	1882	1382		By an oversight estimate only allowed should have been 34; stones very large required to get them into position
Do to Ventilating Windows ²⁴	E				24	44	102	102		Not originally provided for.
Lintel stones for Do ¹²⁴	E	24	1	24	24	54	12088	9688		Estimated rate quite inadequate
Do for Doors & Windows ⁵	E				5	6	30	30		Required in Machinery and Boilers allowed in estimate.
String Course to piers ¹¹²	Pp	187	6	40	204	61	4872	872		Quantity somewhat greater
Course work ¹³⁰⁵	Pp	1653	12	1240	1653	14	144859	20859		Rate found to be insufficient.
Stone slabs for steps ⁶⁹	Pp	366	4	92	366	310	88137	325		
Ornamental parapets ²¹⁰	E	216	1	216	216	11	218	216		
Plastering ⁷⁰⁰	Spr	39.33	28	98	63.46	28	15812	6012		Excess in quantity caused by ad
Whitewashing ⁵⁰	Spr	39.33	26	6	63.46	2	71411	11411		Extra Walling
Carried Over				24684			3198647	3057.325		

Brought Over				24,684			31,986.47	7355.42	3	2.5				
Blue washing	^{ml}	Sq.	.	.	.	10.08	.	3.	1.43	.	.	Required on oven faces		
Draping	¹⁰¹	Cft.	14044	.	3.	2,639	14,028	.	211	2,619.23	19	13.9		
Pointing lime putty	²¹⁰	Sq.	509.63	1	4.	637	523.84	1	8.	485	122	148.122	.	.

Original quantity exceeded in consequence of additional height of walls. It was found that the work could not be executed for the rate allowed.

The excess in quantity caused as follows—
By the addition of beams over Machinery for hoisting purposes

— Finials and Vases at each end of building.

— Skirting board to upper Storey Office

— Barge boards to upper Storey verandah rafters.

Mountain Teak has been used through nearly the whole of the building the purchases of the greater portion were made when timber of good quality was at a very high price, caused by the great demand from the Carnatic Railway Company. This, the cost of Carriage from Madras, and the rejection of any scantlings but those of 1st rate quality have been the causes of the excess in rate.

The data for this only allowed for half overlap, where as much greater 2/3 was adapted, therefore a proportionate increase in quantity of tiles, the Chumam borders were of extra thickness and some were damaged by rain in execution.

This was an item impossible to estimate for correctly a lump sum was entered which was quite inadequate

Brought Over		38049		47493.69		99646.11		23.02			
Refixing End Roofs	270	E	2	135	270	2	513 101	1024 42	754 42	The iron work was considerably damaged in dismantling, and a good deal of extra labor required for repairs of the same; temporary brick pillars were built to nearly a level with the roof and the scaffolding was required to be of great strength owing to weight of iron work and beams. Again the pillars and scaffolding had to be removed.	
Ridge Ventilation	256										
Trusses 30 ft. span complete	556	E	14	110	1540	13	151 610	1968 99	428 99	Six beams 32 feet in length had been procured from the Madras Railway Company at a cost of Rs 4-11- per Cft. The trusses were all set up and independently tested before fixing in position.	
Hip truss complete	66	E	2	69	138	2	82 83	165 06	27 06	See remarks about teakwood.	
Terracing	2530	Sqr	98.85	27 8	2718	98.85	32 8	3212 44	494 44	Analysis of existing rate of this kind of roofing shows that the original rate was quite insufficient, more over the work was much delayed, and materials lost through wet weather.	
Bengal terracing	2530	Sqr	12.74	19	242	12.74	22 39	283 43	41 43	The work was much delayed and materials lost through wet weather.	
Columns 1 1/2 feet diameter	220	E	16	13 1/2	220	12	18 1/8	227 06	4 25	An increase of rate, although a decrease in quantity the columns being of dressed stone instead of brick to correspond with the remainder of the building.	
Wrought iron spouts	155	Pft	646	12	485	214	11 1/2	160 51	324 101	The quantity as per estimate not required.	
Wood oiling	306	Sqr	144.57	2	349	144.57	1 3	207 108	141 54	One coat well and thickly laid on was found to be quite sufficient	
Carried Over		141011		55044 15		11522 147		488157			

Brought Over				44 07 1			55 04 15	115 22 44	488 15 7					
Filling basement	77	Cft	25682	"	1	134	25682	"	3	404	240	"	"	The rate quite insufficient as the earth had to be carted from a distance
Filling superfluous excavation	nil	Cft	6383	"	1	33	6383	"	3	101	71	68	41	After the old foundations were removed, it was found necessary to excavate steps at the sides and this extra excavation had of course to be filled up.
Stone flooring	945	Sq	133.38	12	8	1664	121.63	15	42	1857	611	190	611	Large slabs used instead of the ordinary small flooring; joints well squared instead of feather edged as customary heretofore. The rate was found insufficient and has since been increased in data
Levelling course of concrete	nil	Sq	133.38	5	"	664	139.45	4	132	643	910	6	910	
Flooring	nil	Sq	"	"	"	"	11.45	25	140	304	14	304	14	Asphalte substituted for stone in the Machinery room at the request of the Commissariat Officer.
Asphalte flooring	73	Sq	6.00	25	"	150	6.07	93	146	540	"	420	"	Timber substituted for asphalte in the Machinery room, as it was thought more appropriate.
Wooden Stair Case	40	E	2	20	"	40	2	"	"	340	9	300	9	It was at first supposed that there were two old stair cases whereas one had to be made entirely new. Besides this a second set of steps were required for the upstairs Machinery Room
Corbels under trusses	nil	E	"	"	"	"	30	8	"	240	"	240	"	Added to strengthen the tie beams near their bearings.
Carried Over						46402				59535	811	32286	488 15 7	The old doors and windows now fixed in the present Bakery had to undergo considerable

Brought Over

46402

59538 8/11 13322 26 488 157

Pannelled doors with glazed fowlights ^{ml}	E	29	49	1421	28	52	87	1441	50	..	..				
Pannelled doors ^{ml}	E	8	43	4	346	8	46	80	342	69	26	69	..	..	
Windows venetianed ^{ml}	E	33	54	12	1807	33	56	11	1870	158	63	158	..	..	
Ventilating Windows ⁹⁶	E	24	4	..	168	24	8	95	206	11	38	11	..	..	
Chocolate painting ²⁷²	Sgs	63	34	5	..	317	102	12	2	1	210	10	..	106	6
Building and forming Ovens month ^{ml}	E	10	2	..	20	10	1	167	19	22	..	..	..	13	10
Refixing doors to Ovens ^{ml}	E	10	1	..	10	10	..	154	9	94	..	..	..	..	68

repairs, and nearly all new glass required to replace that broken. New front windows had to be made; the best of the old doors and windows were used in the Temporary Bakery, and were as good as new; the value of these Purse 1116 £ was intended to be recovered and charged to the Temporary Bakery, but the Chief Engineer did not think this desirable, hence the amount of recovery decreased by the same sum.

Rate quite inadequate.

A saving on this as many of the doors and windows were painted before, so only one coat was required in many cases.

Although the quantity shown is less than the estimate yet the work done was actually greater as covering stones opposite doors and Archways were added after the drains were completed; this work being entirely out door and executed during the heaviest part of the monsoon, there was loss of time and material; a heading of concrete was laid between the top of stones and wall of building.

Carried Over

51291

64190 12 507 10 601 45

*Comparative Statement of Quantities, Rates and Amounts of Materials for Brickwork &c. of
Bangalore, Madras, Salem, North Arcot and Ganjam Districts. (for 100 Cft.)*

Description.	Bangalore.				Madras				Salem.				North Arcot.				Ganjam.				Remarks
	Quantity	Rate.	Per	Amount	Quantity	Rate.	Per	Amount	Quantity	Rate.	Per	Amount	Quantity	Rate.	Per	Amount	Quantity	Rate.	Per	Amount	
<u>Brick in Chumam.</u>																					
Bricks	1400	10	1000	14	1818	2 1/4	1000	5 3/7	1666	5	1000	8 5/3	1537	4 1/2	1000	7 4/9	1410	3	1000	4 3/8	
Carriage	"	"	"	"	"	"	"	2 1/3	"	"	"	1 9	"	"	"	1 4/7	"	"	"	1 6	
Chumam	11	9	100	6 3	11	4 3	100	2 14 9	5 1/2	76	100	2 9 3	9 1/2	6	100	3 9	5 1/2	4	100	1 6	
Sand	16 1/2	"	8	11	22	11	"	1 7 10	11	1	"	11	19	6	"	9 6	11	5	"	8 7	
Bricklayers	4	8 6	100	2 2	3	6 6	100	1 3 6	3 1/2	10	100	2 3	3 3/4	10	100	2 5 6	3 3/8	5	100	1 1	
Cooly man	1 1/2	3	"	4 6	1/2	3 6	"	1 9	1	3	"	3	1	2 6	"	2 6	1	1 4	"	1 4	
do boy	8	1 9	"	14	7 1/4	2	"	14 6	11	1 6	"	1 6	10	1 6	"	15	5 1/2	1	"	5 6	
Sundries	"	"	"	13 6	"	"	"	3 4	"	"	"	1 8	"	"	"	8 2	"	"	"	5	
<u>Brick in Clay.</u>	For 100 Cft. Rs. 25				Rs. 14 4/3				Rs. 16 10/8				Rs. 16 11				Rs. 9 6				
Bricks	1400	10	1000	14	1818	2 1/4	1000	5 3/7	1666	3	1000	4 15 11	1537	4 1/2	1000	7 4/9	1350	3	1000	4 9	
Carriage	"	"	"	"	"	"	"	2 1/3	"	"	"	1 9	"	"	"	1 4/7	"	"	"	1 5	
Clay	"	"	100	1 4	19	6 1/2	100	10 2	15	9	100	11 3	3 3/4	100	5 7	15	4	100	5		
Bricklayers	3	7	100	1 5	2 1/4	6 6	100	14 7	3 1/2	9	100	15 6	2 1/2	10	100	1 9	3 3/4	4	100	1 5	
Cooly man	1/2	3	"	1 6	1/2	3 6	"	1 9	1	3	"	3	1 1/2	2 6	"	3 9	3/4	1 4	"	1	
do boy	8	1 9	"	14	3 1/4	2	"	6 6	7 1/2	1 6	"	11 3	5	1 6	"	7 6	3	1	"	3	
Sundries	"	"	"	"	"	"	"	11	"	"	"	1	"	"	"	12 10	"	"	"	9	
<u>Concrete.</u>	For 100 Cft. Rs. 17 8 6				Rs. 10 2 6				Rs. 10 2 1/1				Rs. 12				Rs. 6 14 6				
Stone or Latent jelly	48	1 10 1/2	100	5 10	15	2	100	1 14	33 1/2	10	100	1 11 9	42	2	100	5 4	30	1 1 1/2	100	2 1 9	
Broken brick or corker	20 1/4	3	"	3 14 3	15	2	"	1 14	3 1/3	2	"	7 4	42	2	100	5 4	3	3	"	9	
Chumam	7 3/4	1	"	7 12	15	6	"	5 10	7 1/2	7 6	"	3 8 3	7 1/2	6	"	2 13	7 1/2	4	"	1 14	
Sand	"	"	"	"	22	1	"	1 6	15	1	"	15	11 1/2	6	"	5 7	15	5	"	6 3	
Bricklayers	"	"	"	"	"	"	"	"	1	10	100	10	4 1/2	10	100	2 13	"	"	"	"	
Cooly man	12	4	100	3	7	3	100	1 5	5 1/2	1	"	1 6	1 1/2	2 6	"	3 9	2	1 4	100	2 8	
do woman	"	"	"	"	7 1/2	2	"	15	11	1 6	"	1 6	9	1 6	"	13 6	9 1/4	1	"	9 3	
Sundries	"	"	"	"	"	"	"	"	"	"	"	2 4	"	"	"	1 2	"	"	"	1 8 1	
	For 100 Cft. Rs. 20 4 3				Rs. 13				Rs. 9 7 8				Rs. 12 6				Rs. 6 10 9				

Govt. Letter Department.
Tech. St. Gunge. Madras 31st March 1875.

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

Proceedings of the Madras Government

Read the following:-

From

The District Engineer
Bangalore

No.

No.

No. 1337 of 10th May 75

238 of 9 months 75

The original estimate for the reconstruction of the Bangalore Bakery amounted to Rs 24,150 and it was sanctioned in G. O. No. 95 of the 11th January 1873.

A revised estimate was forwarded by the Superintending Engineer for Civil and Military Buildings in January 1874 and sanctioned in G. O. No. 243 of the 30th Feb 1874.

It amounted to Rs 35,700 and showed therefore an excess over the original one of Rs 11,550.

2. The District Engineer having now completed the building forwards a Comparative Statement

statement from which it appears that the cost including the clearing away of the old and white material will reach the sum of Rs 52,009 and that consequently the estimate originally presented will be exceeded by Rs 29,859, the second by Rs 18,309.

The main cause of the discrepancy between the original and the 2nd estimate was no doubt the difficulty of procuring in the 1st instance what would eventually be the values for purposes of reconstruction of the materials of which the existing building consisted. And it was not till the masonry and timber work were pulled down that their inferiority was ascertained. But it is not easy to understand why the real outlay in prospect was not thereafter fairly approximated to and entered in the 2nd estimate. It seems that the District Engineer had the great advantage of being

being able to have his rates of work actually executed.

An analysis of the excess shows that they were chiefly caused by the underestimation of quantities and rates and overestimation of the value of materials available for use. The first accounted for an excess of Rs 10,987 & the 2^d caused a reduction in the recoveries of Rs 1,151.

The chief excesses under the first were for

Stone in Chunam in Superstructure	2827
Brick in Chunam	898
Brick in Clay	608
Teak wood wrought & put up	1799
Tiled Roofing	571
Repairing and Roofs	457
Clearing yard	500

The quantities of the principal items allowed and those found necessary compare as follows:

Masonry

	Actual Amount	Estimated Amount	Difference
	Cub yds	Cub yds	Cub yds
Masonry	66697	50771	6274
Brickwork	11168	11167	3419
Teakwood	2275	2366	71

The principle rates esti-
mated for and those paid are
shown below.

	Estimated Per Cubic ft	Per Cubic ft
Masonry -	0-3-9	0-4-3
Brickwork in Churn	0-2-9	0-4-0
Brick in Clay	0-1-9	0-2-9
Teakwood weight & put up -	3-8-0	6-2-6 3/4
Roofing	per square 18-0-0	22-12-3

5. The rates on almost
every item were exceeded
and often ^{largely} exceeded and

Making
after making allowance for
the exceptional circumstances
outlined above must express his
dissatisfaction at the manner
in which this ^{work} building has
from its commencement been
until its present completion
been dealt with by the
officers of the P. W. D.

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as compared with those
obtaining in other Dis-
tricts they are very high.
The work executed seems
however to be of exception-
ally good quality and is
difficultly obtaining the
introduction of the depart-
mental in lieu of the
contract system as in
large building has been
borne in mind. The
Govt are therefore disposed
to pass the excess already
incurred but His Excellency
in Council must expect
that with the experience
gained the District Engineer
will in future present
more accurate estimates
for buildings of this class
and that he will critically

with a view to the restoration
of water where practicable.
be the additional charge
of Rs 500 for clearing the
ground which remains
to be done is not sufficiently
justified and cannot be
accepted and the amount
of the estimate now con-
sidered will therefore be
Rs 3,500.

Accepted

G.M.

No 235/40

Dr. H. K. B. B. B.

Cont. P.W.D.
x miley Dept. x 5-4-75
x 1-5-75 x 5-4-75

523
1819

Govt. of 1875, Madras
PUBLIC WORKS.

sent up to the District Engineer
The D. Engr,
Bangalore

Date

Recd

Encl

G O. 10 May 1875, No 1337

Nos. 238 - 240

Government Bakery - Bangalore.
Passing orders on the
letter of the District
Engineer, forwarding, a
comparative statement of
the cost of construction of the
— with explanations.