

(1) Number of pages 22(2) Date of repair 22.8.37(3) Initials of the Referencer

MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 1128-28Press
Mis.315-18Dated 21 41871.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
21st April 1871.*

Read again letter from the Superintending Engineer of the 4th Division, dated 6th March 1871, No. 4,918, and recorded in G. O., dated 9th March 1871, No. 695.

Read also the following papers :—

No. 315. From the Acting Superintending Engineer, 5th Division, to the Secretary to Government, Public Works Department, dated Madras, 10th January 1871, No. 214.

In reference to G. O., No. 2,753, of the 16th November last, calling for a report on the ovens of the Government Bakery at Bangalore, I have the honour,

1 Letter from the Executive Engineer, Bangalore.
1 Memorandum.

in forwarding herewith the report submitted by the Executive Engineer, Bangalore, on the subject, to make the following remarks :—

2. The plan on which the Bangalore ovens are constructed is very much that of the old English oven—a pattern which, after many experiences of iron ovens, the War Office are now introducing into barracks and hospitals in England in supersession of iron ovens, as the brick ovens are simpler in construction, use less fuel, and are more efficacious. I have had to superintend the construction of several ovens of this pattern in recent years, and I am of opinion that when the few alterations noted below are carried out, the Bangalore ovens may be considered to be on the whole satisfactory, although the carelessness with which the Contractor has carried out the work has done much to mar their utility.

3. The absence of dampers is, however, a serious drawback to the economical working of the ovens. For want of these, the mouth of the smoke-flues of each oven is entirely outside the oven door, and necessarily so, as otherwise, *i.e.*, were the mouth of the flue to be inside the oven, when the door was shut the heat would escape up the flue. The result now is that, as there is no means of regulating the draught, there is an extravagant consumption of fuel with a great waste of heat-power.

4. I am informed that the ovens were originally constructed without any doors at all, and that when the fire was removed and the loaves inserted, the openings were temporarily closed with a piece of sheet iron. The doors were certainly an improvement, but they have been fitted with little skill, and they interfere unnecessarily with the width of the flues. The flues averaged originally 9 inches in width, but there are none now more than 6 inches wide, while the width of the flue of oven No. 9 has been reduced by the introduction of the door to 3½ inches, and, as a matter of course, this oven is reported to smoke.

5. The oven doors are 20 inches high by 17 inches wide. This width is insufficient, and it would have been a more advantageous arrangement had the doors been placed with their greatest dimensions lengthways. At present a considerable portion of each oven, on either side of the door, cannot be utilized, as the “peels” with which the loaves are placed in position cannot reach these corners, in consequence of the narrowness of the door openings. In England this inconvenience is obviated by making the front of the ovens circular.

6. Again, by the present arrangement, the ashes from the ovens can only be removed through the bakery itself; consequently there is an amount of grit and

dust in the air when the ovens are raked out just before the loaves are put in, and the dough absorbs a quantity of deleterious particles detrimental to the health of the troops. This can be obviated by making an opening through the backing-walls of the arches on which the ovens rest, at the point marked X on the sketch, and running the ash-boxes, either on wheels or skids, through these openings to the back of the building.

7. For these and other minor improvements, I have requested the Executive Engineer to prepare an estimate, and I shall do myself the honour of submitting the same in due course.

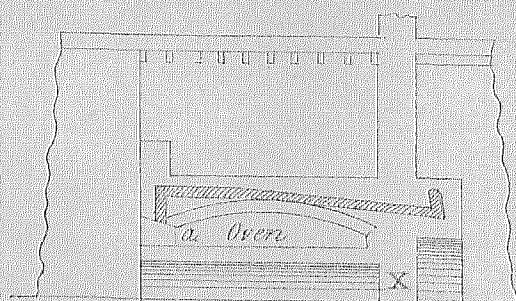
From the Executive Engineer, Bangalore, to the Superintending Engineer, 5th Division, dated Bangalore, 14th December 1870, No. 856.

With reference to your No. 184, dated 24th November 1870, endorsed on G. O., dated 16th November 1870, No. 2,753, I have the honour to enclose a report from Deputy Assistant Commissary Greatorex in charge of Government Bakery, Bangalore, on the ovens used at this station.

2. It should be remarked that the ovens were built according to the directions supplied by the Commissariat Officer. They appear to answer well, and are on what I suppose the native principle, i. e., the oven is heated by being filled with burning wood.

3. The sketch subjoined shows how the ovens are worked.

Section



a. Door of oven.

Shaded portion shows flue for carrying off smoke.

4. It would appear, therefore, that Mr. Greatorex's suggestions regarding the damper and door could not be adopted in this oven, for if air for combustion be not admitted by the door it would have to descend by the flue; in this case it is not very apparent how the smoke could escape by the flue.

5. I am not acquainted with Major Taylor's plan of constructing ovens, which is alluded to in the above-quoted Proceedings of Government.

MEMORANDUM.

In returning correspondence the undersigned begs to forward the height of the crown of each of the ovens in the Bangalore Bakery:—

No.	1	2	3	10	Ft.	In.	Average	Ft.	In.
	...	...	...	...	1	11	...	1	11
	...	...	...	...	2	0	...	2	0
	...	...	...	...	1	10	...	1	10
	...	...	...	...	2	0	...	2	0

No.	4	5	6	7	8	9	Ft.	In.	Average	Ft.	In.
	...	...	...	...	...	...	2	7	...	2	6
	...	...	...	...	...	...	2	6	...	2	6
	...	...	...	...	...	...	2	7	...	2	7
	...	...	...	...	...	...	2	6	...	2	6
	...	...	...	...	...	...	2	7	...	2	7

2. Four ovens average 1-11½ in height from the crown to the flooring, and six are much higher, being over 2-6½ in height.

3. These ovens have been in use for upwards of fifteen months and appear to answer very well. Those numbered Nos. 1 to 3 and 10 consume less fuel for heating them than those from 4 to 9.

4. The only defect to be noticed is that the bricks fall in from the roof of the ovens, and that the flooring also soon wears away by the action of the peels when setting in the dough and withdrawing of the loaves after they are baked.

5. These ovens, from having been constructed something on the native principle, have the flues outside the doors of the ovens *without dampers*, whereas if the flues were placed within the doors *with dampers* they would in all probability prevent smoke and render the heat greater in the ovens.

(Signed) J. GREATOREX,

Deputy Assistant Commissary.

2nd December 1870.

No. 316. From the Superintending Engineer, 4th Division, to the Secretary to Government, Public Works Department, dated Madras, 13th March 1871, No. 5,025.

With reference to Government Order, No. 695, dated 9th March 1871, I have the honour to state that the present ovens of the Government Bakery at Madras are only a little too lofty and require a new arched roof at a lower level.

No. 317. ORDER THEREON, 21st April 1871, No. 1,128.

MILITARY WORKS, No. 6.

ORDERED that these papers be forwarded to the Government of India with reference to their letter dated 19th October 1870, No. 1,131-48-B.M.

2. The estimate of Rupees 1,200 submitted by the Superintending Engineer of the 4th Division for the construction of two new ovens in the bakery at Madras is sanctioned. The question of appropriating the necessary funds will be considered when the demands from the Military Reserve for 1871-72 come under review.

(Here enter No. 1,129, dated 21st April 1871.)

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R.E.,

Secretary to Government.

To the Superintending Engineer, 4th Division,
Controller of Public Works Accounts,
Military Department.

Exd. E. C. Shunker.

PUBLIC WORKS DEPARTMENT,
FORT ST. GEORGE, 21st April 1871.

No. 318.

No. 1,129.

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,
PUBLIC WORKS DEPARTMENT.

MILITARY WORKS, No. 7.

SIR,—In acknowledging the receipt
of Colonel Crommelin's letter, dated
19th October 1870, No. 1,131-48-B. M.,

in which this Government is requested to submit, in communication with the
officers of the Commissariat Department, a report on any defects which may be
found to exist in the ovens for bakeries built in this Presidency on Major Taylor's
plan, I am directed to state that the ovens constructed at the bakeries at Madras
and Bangalore have not been built on that plan, but in accordance with the old
and fully-tested system shown in the accompanying drawing.

2. It will be seen from the enclosed reports of the Superintending Engineers
of the 4th and 5th Divisions that the ovens answer well, and that the only defect
they are said to possess is that they are somewhat more lofty than necessary.
This will be remedied on the first favourable opportunity.

I have the honour to be,

Sir,

Your most obedient servant,

(Signed) CHARLES A. ORR, Colonel, R.E.,

Secretary to Government.

Govt. of 1871 Madras.
PUBLIC WORKS.

To

THE SECRETARY TO THE GOVERNMENT
OF INDIA.

Dated April, 21st.

Recd.

Encl.

G. O., 21st April 1871. No. 1,129.

APRIL
No. 318

FORWARDING with remarks reports
from the Superintending Engineers of the
4th and 5th Divisions on the ovens for
bakeries built in the Madras Presidency.

N^o 856.

Executive Engineer's Office,
Bangalore, 14th December 1870.

From,

The Executive Engineer,
Bangalore.

To,

The Superintending Engineer,
5th Division.

Sir,

With reference to your N^o
184 dated 24th November 1870, en-
dorsed on G. O. dated 16th November
1870, N^o 2753, I have the honor to enclose
a report from Deputy Assistant
Commissary Greator, in charge of
Government Bakery, Bangalore,
on the ovens used at this station.

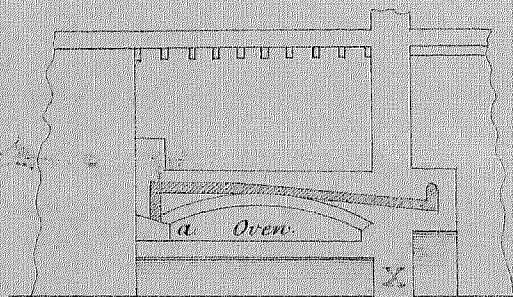
It should be remarked
that the ovens were built according
to the directions supplied by the
Commissariat Officer. They appear
to answer well and are on what I
suppose the native principle i.e.
the oven is heated by being filled

with

with burning wood.

The sketch subjoined shows how the ovens are worked.

Section.



a. Door of oven.

Shaded portion shows flue for carrying off smoke.

It would appear, therefore, that Mr. Greville's suggestions regarding the damper and door could not be adopted in this oven, for if air for combustion be not admitted by the door it would have to descend by the flue: in this case it is not very apparent how the smoke could escape by the flue.

I am not acquainted with Major Laylor's plan of constructing ovens which is alluded to in the above quoted Proceedings of

Government.

Government.

Have the honor to be
Sir,

Your most obedient servant
Signed / H. N. Wood Esq. R.E.

Executive Engineer, Bangalore.

(True copy)

Richd. Roberts Esq. R.E.
Asst. Superintendent Engineer, S. D. O.

L. G. 117/71-

Memo.

In returning correspondence the undersigned begs to forward the height of the crown of each of the ovens in the Bangalore Bakery.

No 1	1	11	} Average — 1 — 11 $\frac{1}{4}$
No 2	1	"	
No 3	1	10	
No 10	2	"	
No 4	2	7	} Average — 2 — 6 $\frac{2}{3}$
No 5	2	6	
No 6	2	7	
No 7	2	7	
No 8	2	6	
No 9	2	7	

Four ovens average 1-11 $\frac{1}{4}$ in height from the crown to the flooring and six are much higher being over 2-6 $\frac{2}{3}$ in height.

These ovens have been in use for upwards of fifteen months and appear to answer very well. Those numbered No 1 to 3 and No 10 consume less fuel for heating than those from 4 to 9.

The only defect to be noticed is that the bricks fall in from the roof of the ovens and that the flooring also soon

wears

wears away by the action of the Peels
when setting in the Dough and with-
drawing of the loaves after they are baked.

These Ovens from having been con-
structed something on the Native principle
have the flues outside the doors of the ovens
without dampers, whereas if the flues
were placed within the doors with
dampers they would in all probability
prevent smoke and render the heat
greater in the ovens.

2^d December 1870. /Signed/ J. G. G. G.
D. A. G. G.

/True Copy/
/Signed/ Col. Capt.
S. A. G. General
for Major Macdonald. G. A. G. G.
(True Copy)

Recd. 10/12/70. Ltr. 10/12/70.
J. G. G. G. Engineer, 5th Div.

No. 214



Read the following -
Superintg. Engrs Office, 5th Division,
Madras, 10th January 1871.

From
Lieut. Col. R. A. Roberts, R.E.,
Adj. Superintg. Engrs, 5th Div.,
To
Colonel Charles A. G. G., R.E.,
Secretary to Government, G. A. G. G.

Sir,
In reference to G.O. 122753
of the 16th November last calling for a
report on the ovens of the Government
Bakery at Bangalore, I have the honor
in forwarding therewith the report submitted
by the Executive Engineer, Bangalore, on
the subject, to make the following
remarks:-

2. The plan on which the Bangalore
ovens are constructed is very much that
of the old English oven - a pattern,
which, after many experiences of iron-
ovens, the war office are now introducing
into Barracks and Hospitals in
England, in supersession of iron-ovens,
as the brick ovens are simpler in con-
struction, use less fuel and are more
efficacious. I have had to superintend
the construction of several ovens of this

Enclosures 2
1 Letter from
Exec. Engineer,
Bangalore
1 Memo.

S. A. G. G. 11/1/71

pattern in recent years, and I am of opinion that when the few alterations noted below are carried out, the Bangalore ovens may be considered to be on the whole satisfactory, although the carelessness with which the Contractor has carried out the work has done much to mar their utility. —

3. — The absence of dampers is however a serious draw-back to the economical working of the ovens. — For want of these, the mouth of the smoke-flues of each oven is entirely outside the oven-door, and necessarily so, as otherwise, the mouth of the flue would be inside the oven, when the door was shut, the heat would escape up the flue. — The result now is that as there is no means of regulating the draught, there is an extravagant consumption of fuel with a great waste of heat-power. —

4. — I am informed that the ovens were originally constructed without any doors at all, and that when the fire was removed, and the loaves inserted, the openings were temporarily closed with a piece of sheet iron. — The doors were certainly an improvement, but they have

15 2
been fitted with little skill, and they interfere unnecessarily with the width of the flues. — The flues averaged originally 9 inches in width, but there are now none more than 6 inches wide, while the width of the flue of oven No. 9 has been reduced by the introduction of the door to 3 1/2 inches, and as a matter of course, this oven is reported to smoke. —

5. — The oven doors are 20 inches high, & 17 inches wide. — This width is inefficient, and it would have been a more advantageous arrangement had the doors been placed with their greatest dimensions lengthways. — At present a considerable portion of each oven, on either side of the door, cannot be utilized, as the "peels" with which the loaves are placed in position cannot reach these corners, in consequence of the narrowness of the door-openings. — In England this inconvenience is obviated by making the front of the ovens circular. —

6. — Again by the present arrangement the ashes from the ovens can only be removed through the Bakery itself. — Consequently there is an amount of grit and dust in the air when the ovens are raked out just before the

Loaves are put in, and the dough absorbs
a quantity of deleterious particles detri-
mental to the health of the Troops. This
can be obviated by making an opening
through the backing walls of the arches
on which the ovens rest, at the point marked
X on the Sketch, and running the ash-holes,
either on wheels, or skids, through these
openings to the back of the building.

For these and other minor
improvements, I have requested the
Executive Engineer to prepare an estimate,
and I shall do myself the honor of submitting
the same in due course.

I have the honor to be
Sir,

Your most obedient Servant.

Richd. Roberts Lieut. Col. R.E.,
Asst. Superintg. Engineer, 5th Division.

Public Works 1871 Department
No. 117.

The Ag. Suptg. Engr.
to the 3rd Division
The Secty. to Government
P. W. Dept.

Costed 10th }
Recd. 11th } from my file.
Encl. 2 - N. 2nd.

Reporting on the
Plans of the Government
Bakery at Bangalore.

No. 1128-1129-21 April 71

No. 315

to 6 March 71 R. 12.

No. 5025.

192
Capt. J. B. Officer ¹⁰⁹
Madras 13. March 1871.

From.

Colonel C. V. Wilkinson R. E.
Superintending Engineer ¹⁰⁹

To.

Colonel C. A. Orr R. E.
Secretary to Government P. W. D
Fort Saint George

Sir,

With reference to Government
Order No. 695 dated 9th March 1871, I
have the honor to state that the present
Plans of the Government Bakery at Madras
are only a little too lofty, and require
a new arched roof at a lower level.

I have the honor to be
Sir

Yours most obedt. servt.

A. D. J. (Capt. R. E.)
for Supt. Engr. ¹⁰⁹

No 1129

Proceedings of the Madras Govt.

Under date the 21st 1871

Read again letter from
the Suptg Engr of the 4th Div.
dated 6th March 71 No 4918
and recorded in G. O. dated
9th March 71 No 690

Read also the following
From the Suptg Engr of the 5th Div. Here entered 214 of 10th Jan 71
From " " 4th Div. " " 5025 of 13th March 71

Ordered that these
papers be forwarded to
the Govt of India with
reference to their letter
dated 19th October 70
No 1131 B. M.

The estimate of
Rs 1200 submitted by the
Suptg Engr of the 4th Div.

No 9 March 71 No 690

From the Suptg Engr of the 5th Div.
dated 21st 11 71.

The Suptg Engineer
to the Govt.

To the Secretary to Govt.
Public Works Dept.

Dated 13th March 71
No 4918

No 5025

Reporting that
the present course
of the Government
works at Madras
are only a little too
high and require
a new creek, not
at a lower level.
No 1128-1129-21 of 21st Feb 71

Sept 71

to 6/11/1900

for the construction of two
new ovens in the bakery at
Madras is sanctioned. The
question of appropriating
the necessary funds will
be considered when the
demands from the Military
Reserve for 1871/72 come
under review.

Here enclosed No 1129 of

To
The Secretary to the Govt.
of India

Sir,
In acknowledgment
of the receipt of your letter
dated 19th October 1870
No 1131/48 B. M. in which
this Govt is requested
to submit, in communi-
cation with the officers

To
The Asst Engineer 4th Div.
" Controller
" Mty Deptt.

Despt 27/4/71

of the Commissariat Deptt.,
a report on any defects
which may be found to
exist in the ovens for bake-
ries built in this Presi-
dency on Major Taylor's
plan, I am directed to
state that the ovens con-
structed at the bakeries
at Madras and Bangalore
have not been built on
that plan, but in accor-
dance with the old and
fully tested system
shown in the accompa-
nying drawing.

It will be seen from
the enclosed reports of the
Asst Engrs of the 4th

and 5th Divisions that
the ovens answer well,
and that the only defect
they are said to possess
is that they are somewhat
more lofty than necessary.
This will be remedied
on the first favorable
opportunity.

RE

Recd 27/4/71 into me
drawing, one copy of spec 695
of 1871 & before spec 1128 of 1871.

Rs 25th January 1878 No 427-428
 16 Nov 70 298-299
 9 Dec 71 208-2

26 Nov 72 1157
 Govt of 1871 Madras.
 PUBLIC WORKS.

To the Superintending Engr
 1st Division
 and
 To the Secretary to the
 Govt of India

Further Book 12638 5-5-71

Date
 Recd.

21st April 1878 No. 1128. 1129

Nos. 315 (3171 318)

(The following orders are to be
 carried out by the
 District Engineer
 in the District of
 Madras)

The following orders are to be
 carried out by the
 District Engineer
 in the District of
 Madras