No. 16
22-7

M.R.O. 1—22,408—22-11-50.

MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

Cons. 28-7-57

G.O. No. 1446 Press Mis.

83-84

Dated 28-7- 1857

Not to be folded or roughly handled

No. 83. Read the following letter from Colonel C. E. FABER, Chief Engineer ; to H. FORBES, Esq., Acting Secretary to Government, dated 27th June 1857, No. 1593.

SIR,

With reference to Extract of Minutes of Consultation No. 991, dated 23rd Ultimo, I have the honor to forward to be obligingly returned a report from the Civil Architect upon the conclusion he has arrived at in respect to kyanizing timber for building purposes.

2. The Civil Architect appears to have had a certain quantity of timber kyanized the cost, of which is 4 annas a cubic foot and though he has had no experience of what beneficial effect this process would have upon the timber subjected to this process he seems to be averse to its adoption, because it is expensive in itself, that the carriage of the timber to and from the kyanizing yard is considerable ; and that the wood without it, is very durable, sufficiently so, in his opinion to induce the conclusion that the enhanced cost of the kyanizing does not warrant its adoption.

3. The further arguments adduced for declining to use the process viz., the facility of stealing the wood and the delay it would occasion to the Public Works, do not seem to me deserving of notice, and the argument against the abuse of imperfect preparation of the timber, is one which might be adduced against every improvement of the kind it might with equal force be applied to his simple expedient of tar &c.

4. There are two processes of kyanizing wood the one by simple immersion, the other by exhaustion of air and Hydraulic pressure, and in the latter process the time occupied for large logs, is but eight hours, and the injection of the solution into the cells of the timber perfect.

5. Without in any way desiring to weaken the argument which the Civil Architect uses, in favor of the rejection of the process, I must be permitted to remark, that it has of late been considered necessary, to leave spaces so as to give a free Current of air on each side of beams built into walls, to prevent their ends rotting, and it is notorious that beams and joists are very liable to decay at their junction with the wall into which they are built. And it was only two years ago that the Petty Court was in imminent danger of falling by the total destruction of the main beam of the building by dry rot.

6. For wood for building purposes this Department is forced into the market, and purchases timber, the best that it can procure, but. it is no doubt the case, that much of this timber has been felled at times when the tree is full of sap, and that the process of seasoning, has not had that attention which it deserves, this very process of seasoning is that which is said to be so efficiently performed by the kyanizing or Burnetizing process, and, this being the case, see the Extract given by the Civil Architect, in his Extract from the Aide Memoir. I certainly am not prepared to recommend, that so valuable a preventive to decay, should be abandoned.

7. I, however am of opinion, that the process should not be given on Contract, the Government possess the means of doing it themselves, the only extra expense to them, being, the cost of the cylinder and the solution ; for, the minie rifle bullet machine, has a ten Horse Power engine attached, which can most easily be used for exhausting the iron receiver, into which the wood has to be placed.

8. The Cylinder or receiver, should be of wrought iron 52 feet long, 6 feet in diameter, with a door 2′ 6″ × 2′ at each end, for loading, this Cylinder, should be capable of bearing a pressure of 160lbs. to the square inch, this Cylinder could be made at Dowlaishwerum, as could the air pump and small hand Hydraulic press, required for the injecting process ; should the Government approve of this suggestion, I shall endeavour to procure the price it will cost to put up the machinery, and the cost which it will be per cubic foot of properly saturated wood.

P. S.—I have the honor to forward a specimen of a portion of a decayed beam taken from the Main Guard room Fort Saint George, which has been forwarded to me by the Garrison Engineer subsequent to my writing the above letter.

(Signed) C. E. FABER, Colonel,
Chief Engineer.

Fort Saint George, Public Works Consultation of 28th July 1857.

No. 84.

ORDER THEREON, No. 1146; dated 28th July 1857.

Government having enquired how far the Civil Architect had availed himself of the permission granted him in Extract Minutes Consultation 9th December last, to employ Mr. Kickwick in kyanizing timber for the public use, Colonel Faber now submits a letter from Colonel Atkinson in reply to this enquiry. Colonel Atkinson is observed to be averse to the process, although as yet, he has passed but a very small quantity of wood through Mr. Kickwick's hands, principally Palmyras for scaffolding; and sufficient time has not elapsed since even this small quantity was tried, to judge of the success or otherwise of the experiment. The Civil Architect's objections seem to lie in the expense of the process, viz. 4 annas per cubic foot, in the additional cost of carrying the timber to and from the kyanizing yard, and in his own idea that timber is sufficiently durable for building purposes without being kyanized. The Chief Engineer does not admit the force of these objections, and appears on the whole to be in favor of the process; but instead of effecting it by private contract, he recommends that the Government employ their own means. For this purpose, he suggests the construction of a wrought Iron Cylinder, air pump, and small hand Hydraulic press, at Dowlaishweram and for exhausting the receiver the application of the steam engine attached to the Miniebullet machine.

* E. M. C. 1st July 1857, No. 332.

2. Although the Government in the Financial Railway Department, recently* resolved, on the suggestion of the Railway authorities, that, for the present, no further expenditure should be incurred in kyanizing sleepers, they are nevertheless of opinion that sufficient time has not elapsed, to test the efficacy of the experiments hitherto tried. There can be no question of the liability of beams to rot at the point of junction with the walls; and although it has not been proved that kyanizing will prevent this tendency, it is desirable that experiments should be made to test the effect of the preservative; and the Civil Architect is wrong in totally rejecting the expedient. One objection advanced by him is, that additional expense is incurred in conveying the timber to and from the yard, thus materially enhancing the cost of the article; but on reference to Mr. Kickwick's letter to Colonel Atkinson dated 9th January 1857, it is observed that in a postscript, he states his readiness to erect a shed for a kyanizing apparatus in, or contiguous to, the Civil Architect's timber yard, if a spot of ground 10 feet long and 20 feet wide were allotted to him. It would be desirable to make some such arrangement, to save conveyance charge, and thus meet one strong objection put forward by Colonel Atkinson. The expense of kyanizing would doubtless add considerably to the cost of the timber; and therefore the Government think it very necessary to ascertain as soon as possible the additional value of the wood in consequence of the process. The Chief Engineer will be good enough to make a calculation, and convey to Government an intelligible idea of this additional value.

† E. M. C. 9th Dec. 1857, No. 2281.

3. As to kyanizing timber at their own expense, the Government have already† declared it neither advisable nor economical to set up a Hydraulic press of their own, as experience shows that, in the end such processes are carried on cheaper and better by private individuals.

(Signed) H. FORBES,
Acting Secretary to Government.

3-

[illegible] Central Office of P. Works,

No. 1593. Fort Saint George,

From, [illegible] 24th June 1857

The Chief Engineer,

To, The Secretary to Government P. W. D.

[illegible] No. 593.

Preservation of Timber by Kyans process.—

Enc: one letter & abstract of decayed wood

Sir,

With reference to Extract of Mins. of Cons. No. 991 dated 23d Ultimo I have the honor to forward to be obligingly returned a Report from the Civil Architect upon the conclusions he has arrived at in respect to kyanizing timber for building purposes.

2 The Civil Architect appears to have had a certain quantity of timber Kyanized the cost of which is 4 Annas a Cubic foot and though he has had no experience of what beneficial effect this process would have upon the timber subjected to this process he seems to be averse to its adoption, because it is expensive in itself, that the carriage of the timber to and from the Kyanizing Yard is considerable; and that the wood without it, is very durable, sufficiently so, in his opinion to induce the conclusion that the enhanced cost of the kyanizing does not warrant its adoption.

The

3. The further arguments adduced for declining to use the process viz^t the facility of stealing the wood and the delay it would occasion to the public Works, do not seem to me deserving of notice, and the argument against the abuse of imperfect preparation of the timber, is one which might be addu against every improvement of the kind. it might with equal force be applid to his simple expedient of tar &c^a —

4. There are two processes of Kyanizing wood the one by simple immersion, the other by exhaustion of air and Hydraulic pressure, and in the latter procss the time occupied for large logs, is but eight hours, and the injection of the solution into the Cells of the timber perfect.

5 Without in any way desiring to weaken the Argument which the Civil Architect uses, in favor of the rejection of the procss, I must be permitted to remark, that it has of late been considered necessary, to leave spaces so as to give a free current of Air on each side of beams built into walls, to prevent their ends rotting, and it is notorious that beams and joists are very liable to decay at their junction with the wall into which they are built. And it was only two Years ago that the Petty Court was in imminent danger of falling by the total destruction of the main beam of the building by dry rot. —

6. For wood for building purposes this Department is forced into the market, and purchases timber, the best that it can procure, but, it is no doubt the case that much of this timber has been felled at times when the tree is full of sap; and that the procss of seasoning has not had that attention, which it deserved. This very procss of seasoning is that which is said to be so efficiently performed by the Kyanizing or Burnetizing procss, and, this being the case, See the Extract given by the Civil Architect, in his Extract from the Aide Memoir. I certainly am not prepared to recommend, that so valuable a preventive to decay, should be abandoned.

7 I, however am of opinion, that the procss should not be given on Contract. the Government possess the means of doing it themselves, the only extra expense to them, being, the cost of the Cylinder and the Solution; for, the Minie rifle ballet Machine, has a ten horse power engine attached, which can most easily be used for exhausting the iron receiver, into which the wood has to be placed.

8 The Cylinder or receiver, should be of wrought iron

52 feet long, 6 feet in diameter, with a door 2' 6" × 2' at each end, for loading – This Cylinder, should be capable of bearing a pressure of 160 lbs to the Square inch. This Cylinder could be made at Dowlaiswerum, as could the Air pumps and Small hand Hydraulic press, required for the injecting process; Should the Government approve of this suggestion, I shall endeavour to procure the price it will cost to put up the Machinery, and the cost which it will be per Cubic foot of properly Saturated wood. –

I have the honor to be

Central Office of P. W.

Fort Saint George,

27th June 1857.

Sir,

Your most Obt Servt

A. Fraser Colonel

Chief Engineer

GL/

P. S. I have the honor to forward a Specimen of a portion of decayed beam taken from the Main Guard room Fort Saint George which has been forwarded to me by the Garrison Engineer subsequent to my writing the above letter.

A. Fraser

Chief Engr

GL/

Lieut Col Colvin

Rec.d 20 May 57 No 57-5-

Pub. Works 1857 Department
Cons 28th July 57 1294
From The Chief Engineer
To The Secretary to Government
P.W.D.
Dated 27 July 1857
Received 29th July 1857

No 1573

Enclosures Lr. & Returns
No 1446. 28th July
Forwards a Report from the Civil Architect deprecating the use of Ryan's or Burnett's process for seasoning timber for building purposes with which he does not coincide, but recommends that an Estimate be made of the cost of the apparatus, and that he will report further upon it when the wishes of Government are communicated to him.—

No 83.

Cl. July R3-C21-R24

The Chairman mentioned that he had come to the conclusion that it would be desirable to have the opinion of Mr Ryan himself upon the subject of his process, and that he would write to him for that purpose.

Ordered accordingly.

P.W.D.

No 11446

Extract from the Minutes of Consultation
Under date the 28th July, 1857.

Read the following
letter from the Chief Engineer

/ Rec'd enter 27th June 1857 N 1593 /

Govt having enquired how far the Civil Architect had availed himself of the permission granted him in Ex: Mins: Cons 9th Dec last, to employ Mr Kitchnick in organizing timber for the public use, Col Faber now submits a letter from Col Atkinson in reply to this enquiry. Col Atkinson is observed to be averse to the process, altho' as yet, he has passed but a very small quantity of wood thro' Mr Kitchnick's hands principally, palmyras for scaffolding; and sufficient time has not elapsed since even this small quantity was tried, to judge of the success or otherwise of the experiment. The Civil Architect's objections seem to lie in the apparent expence of the process, viz 4 annas

per cubic foot, in the additional cost of carrying the timber to and from the Kyanizing Yard, and in his opinion that timber is sufficiently durable for building purposes without being kyanized. The Chief Engr does not admit the force of these objections, and appears on the whole to be in favor of the process; but instead of effecting it by private contract, he recommends that the Govt employ their own means for this purpose, he suggests the construction of a wrought iron cylinder, air pumps, and small hand hydraulic press at Dunleary for exhausting the receiver and the application of the steam engine attached to the mint belt machine.

After the first in the Railway Dept recently resolved on the suggestion of the Railway Authorities that, for the present, no further expenditure should be incurred in Kyanizing sleepers, they are nevertheless of opinion that sufficient time has not elapsed, to test the efficacy of the experiments hitherto tried. There can

* E. M. C, 1st July/57, p. 332

be no question of the liability of beams to rot at the point of junction with the walls; and altho' it has not been proved that kyanizing will prevent this tendency, it is desirable that experiments should be made to test the effect of the preservative; + the Civil Architect is wrong in totally rejecting the experiment. One objection advanced by him is, that additional expense is incurred in conveying the timber to and from the yard, thus materially enhancing the cost of the article, but on reference to Mr. Richmill's letter to Col Atkinson dated 9th Jan/57, it is observed that in a postscript, he states his readiness to erect a shed for a kyanizing apparatus in, or contiguous to, the Civil Architect's timber Yard, if a ~~sufficient~~ plot of Ground 40 feet long and 25 feet wide were allotted to him. It would be desirable to make some such arrangement, to save carriage charge, & thus meet me

strong objection just formed by Col Atkinson. The expence of kyanizing would doubtless add considerably to the cost of the timber; and therefore, the first think is very necessary to ascertain as soon as possible the additional value of the wood in consequence of the process. The Chief Engr will be good enough to make a calculation and convey to Govt an intelligible idea of this additional value.

As to kyanizing timber at their expence, the Govt have already declared it neither advisable nor economical to set up a kyanic process of their own, as experience shows that, in the end, such processes are carried on cheaper and better by private individuals.

[illegible]

* E. M. C. 9 Dec/56, No 2281

* G Cooper, to the Chief Engr with his Rep. Dirt 29 1-9 to J. Richardson Esqre M

c21 July 1824

Cons: 26th May /57 No 57452

Public Works 1857 Dept.
Cons 28th July.

No 1446.

Extract Mins of Cons:
of 28th July /57.

From Mr J. Kirkwick Esq 2d/11th
Augt /57 C No 159 / inst: 25th

Extract from Chief Engrs 12th Augt /57
& 16/10 in Cons: 25th

From the Asst Engr in charge of
the Central Office 17th April 58 C No 337
in

Requesting the Chief
Engineer to make a calcu-
lation and convey to Govt an
intelligible idea of the cost
of timber upon being Reor-
nized -

No 583 & 584.