

Directing the Executive Engineer, Buckingham Canal, with remarks, to prepare, in communication with the Harbour Works Engineer, the estimate for the construction of a — outside the south arm of the Madras harbour and within the sand which has accumulated to the south-west.

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

Read—the following paper :—

From WARE AUSTIN, Esq., I.C.S., Chairman, Harbour Trust Board, Madras, to the Secretary to Government, dated Madras, 6th November 1896, No. 3284.

Referring to my letter No. 4894, dated 20th March 1896, and to your memorandum, dated 30th July, in which you remark with regard to the shoaling reported by Mr. Pogson of the Roadstead and at the entrance of the Harbour, that “the only satisfactory solution of the question from an engineering point of view is, I believe, the north-east entrance,” I have the honour to inform you that the Harbour Board has very carefully reconsidered the whole question of Harbour improvements from the altered stand-point which has gradually developed since the date of the Harbour Improvements Committee’s report, and is of opinion that a north-east entrance would better suit the requirements of the trade of this port than any other form of entrance, provided that the cost of constructing it is not prohibitive.

2. It is observed that, in his evidence before the Committee appointed by the Secretary of State for India in April 1887, Mr. Parkes stated, paragraphs 256-8, “The cost of making that north-east entrance, as designed by the Madras Committee, would be thirteen lakhs of rupees,” and in paragraph 260, “In order to make this ship dock to the southward of the south pier to the area shown, it would be, in round numbers, say fourteen lakhs.”

It would, therefore, appear that Mr. Parkes was of opinion that twenty-seven lakhs of rupees would provide a north-east entrance to the Harbour—which, it is presumed, included closing the then existing eastern entrance—and a ship dock in the sand to the south.

3. Very costly work has since been carried out to complete the eastern entrance, which has now been finished; and although the Trustees individually prefer a north-east or northerly entrance, it would only be in case of the present entrance shoaling to such an extent as to jeopardise the fair way into and out of the Harbour, or of works to keep it open being estimated at a very large sum, that they would be willing to seriously consider a change in the position of entrance; and the Board does not consider that the time has yet arrived to provide a ship dock in connection with the Harbour, but agree with Mr. Parkes that if ever this time does come, the sand which has accreted to the south of the Harbour is the best place for it; and, owing to its rapid accumulation, will afford more space and better facilities for the construction of a dock at an earlier date, than Mr. Parkes anticipated.

4. The Trustees will, therefore, await further information regarding the reported shoaling of the Roadstead, which at present does not threaten to close the entrance very rapidly, and must now consider what means should be adopted to improve Harbour facilities at a moderate cost.

5. The Harbour Improvements Committee recommended a boat-basin across the western side of the Harbour with a canal entrance in the north-west corner, beyond which were provided quays and ample space for dealing with the large coal traffic of the Port, in a locality convenient for despatch by railway.

6. In considering these proposals, the Harbour Board adopted a modified form of basin confined to the south-west corner of the Harbour as being sufficient for general cargo, while coal was left to be dealt with in the north-west beyond the canal entrance as proposed by the Committee in and near the present block-making ground, but with the additional facility of a deep-water berth, alongside of which a steamer could lie to discharge coal and horses, or to embark troops or passengers.

7. In paragraph 3 of my letter referred to *supra*, it was pointed out that, as explained in paragraph 8 of Mr. LeFanu’s letter, No. 3258, dated 20th November 1895, “the Trustees are not in a position to recommend to Government to sanction payment for any portion of the canal entrance from Harbour Funds,” and in paragraph 4 I wrote, “should Government decide that the deep quay wall alongside the canal entrance is not required as an integral part of the canal scheme, the Board must view the matter of dredging to provide extra berths in the light in which it is put in paragraph 3 of the Chief Engineer’s (Colonel Pennycuik) note, dated 4th January 1896, viz., that the question is purely a financial one, as to whether the additional accommodation to be obtained is worth the Rs. 2,19,000 to be expended upon it, plus, however, Rs. 5,52,000; the balance chargeable to Harbour Works on account of the canal entrance, to which must also be added the extra cost of the proposed boat-basin in the south-west corner, due to the proposal to give it also a deep water wharf, instead of a boat wharf only as proposed by the Improvements Committee.”

8. It is now understood that Government has abandoned the idea of making a canal at the north-west corner; therefore, to provide the necessary accommodation for the coal traffic at that spot, the Board would have to incur the whole of the expense necessary to form the entrance without the advantages which may accrue to the Harbour by a canal connection. The canal section was estimated to cost Rupees 7,52,300, and the Board is of opinion that as the canal is not to be made from the north-west corner, it would not be justified in incurring this expense, to provide an entrance to a coal-basin only, which basin would be an additional expense not yet estimated for, it being intended when Mr. LeFanu submitted the Board’s modifications of the Committee’s recommendations to utilise a portion of the canal for landing and stacking coal (*vide* plan A 1 which accompanied the Committee’s report, and the plan submitted with Mr. LeFanu’s letter No. 3258).

9. The Trustees have, therefore, had to reconsider the whole question and decide whether other satisfactory arrangements could not be made which would not involve so large an expenditure, and this appears to be practicable.

10. As the canal section at a cost of Rs. 7,52,300, to provide an entrance to a coal-basin merely, is out of the question, the next step was to consider whether the proposed boat-basin in the south-west corner of the Harbour was sufficient to meet requirements, or, if not, what modifications were needed.

11. The nautical authorities have, throughout the discussion of the question of Harbour improvements, consistently and unanimously objected to any curtailment of the water area of the Harbour, but their objections and the disadvantages pointed out were overruled, as being of less importance than the advantages to be gained.

12. Without the canal section the boat-basin, as sanctioned in the south-west corner of the Harbour, is found to be totally inadequate to meet the requirements of the Port, and must, therefore, apart from nautical objections to it, be abandoned.

13. It was part of Mr. Parkes’ original proposals to provide a boat-basin in the sand to the south of the Harbour, and the Board has, in reluctantly abandoning proposals previously approved, been compelled to seek a solution of the difficulty in this direction.

14. I submit for the information of Government the proceedings of a special meeting held on Friday, 30th October, together with a sketch of the proposals made by Mr. Pinsent to overcome the difficulties which have arisen, which proposals fully meet all nautical objections and traffic requirements, and are unanimously approved by the Trustees. The plan provides ample accommodation for coal, as well as for

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

Read—the following paper :—

From WARE AUSTIN, Esq., I.C.S., Chairman, Harbour Trust Board, Madras,
to the Secretary to Government, dated Madras, 6th November 1896,
No. 3284.

Referring to my letter No. 4894, dated 20th March 1896, and to your memorandum, dated 30th July, in which you remark with regard to the shoaling reported by Mr. Pogson of the Roadstead and at the entrance of the Harbour, that “the only satisfactory solution of the question from an engineering point of view is, I believe, the north-east entrance,” I have the honour to inform you that the Harbour Board has very carefully reconsidered the whole question of Harbour improvements from the altered stand-point which has gradually developed since the date of the Harbour Improvements Committee’s report, and is of opinion that a north-east entrance would better suit the requirements of the trade of this port than any other form of entrance, provided that the cost of constructing it is not prohibitive.

2. It is observed that, in his evidence before the Committee appointed by the Secretary of State for India in April 1887, Mr. Parkes stated, paragraphs 256-8, “The cost of making that north-east entrance, as designed by the Madras Committee, would be thirteen lakhs of rupees,” and in paragraph 260, “In order to make this ship dock to the southward of the south pier to the area shown, it would be, in round numbers, say fourteen lakhs.”

It would, therefore, appear that Mr. Parkes was of opinion that twenty-seven lakhs of rupees would provide a north-east entrance to the Harbour—which, it is presumed, included closing the then existing eastern entrance—and a ship dock in the sand to the south.

3. Very costly work has since been carried out to complete the eastern entrance, which has now been finished; and although the Trustees individually prefer a north-east or northerly entrance, it would only be in case of the present entrance shoaling to such an extent as to jeopardise the fair way into and out of the Harbour, or of works to keep it open being estimated at a very large sum, that they would be willing to seriously consider a change in the position of entrance; and the Board does not consider that the time has yet arrived to provide a ship dock in connection with the Harbour, but agree with Mr. Parkes that if ever this time does come, the sand which has accreted to the south of the Harbour is the best place for it; and, owing to its rapid accumulation, will afford more space and better facilities for the construction of a dock at an earlier date, than Mr. Parkes anticipated.

4. The Trustees will, therefore, await further information regarding the reported shoaling of the Roadstead, which at present does not threaten to close the entrance very rapidly, and must now consider what means should be adopted to improve Harbour facilities at a moderate cost.

5. The Harbour Improvements Committee recommended a boat-basin across the western side of the Harbour with a canal entrance in the north-west corner, beyond which were provided quays and ample space for dealing with the large coal traffic of the Port, in a locality convenient for despatch by railway.

6. In considering these proposals, the Harbour Board adopted a modified form of basin confined to the south-west corner of the Harbour as being sufficient for general cargo, while coal was left to be dealt with in the north-west beyond the canal entrance as proposed by the Committee in and near the present block-making ground, but with the additional facility of a deep-water berth, alongside of which a steamer could lie to discharge coal and horses, or to embark troops or passengers.

7. In paragraph 3 of my letter referred to *supra*, it was pointed out that, as explained in paragraph 8 of Mr. LeFanu’s letter, No. 3258, dated 20th November 1895, “the Trustees are not in a position to recommend to Government to sanction payment for any portion of the canal entrance from Harbour Funds,” and in paragraph 4 I wrote, “should Government decide that the deep quay wall alongside the canal entrance is not required as an integral part of the canal scheme, the Board must view the matter of dredging to provide extra berths in the light in which it is put in paragraph 3 of the Chief Engineer’s (Colonel Pennyquick) note, dated 4th January 1896, viz., that the question is purely a financial one, as to whether the additional accommodation to be obtained is worth the Rs. 2,19,000 to be expended upon it, plus, however, Rs. 5,52,000; the balance chargeable to Harbour Works on account of the canal entrance, to which must also be added the extra cost of the proposed boat-basin in the south-west corner, due to the proposal to give it also a deep water wharf, instead of a boat wharf only as proposed by the Improvements Committee.”

8. It is now understood that Government has abandoned the idea of making a canal at the north-west corner; therefore, to provide the necessary accommodation for the coal traffic at that spot, the Board would have to incur the whole of the expense necessary to form the entrance without the advantages which may accrue to the Harbour by a canal connection. The canal section was estimated to cost Rupees 7,52,300, and the Board is of opinion that as the canal is not to be made from the north-west corner, it would not be justified in incurring this expense, to provide an entrance to a coal-basin only, which basin would be an additional expense not yet estimated for, it being intended when Mr. LeFanu submitted the Board’s modifications of the Committee’s recommendations to utilise a portion of the canal for landing and stacking coal (*vide* plan A 1 which accompanied the Committee’s report, and the plan submitted with Mr. LeFanu’s letter No. 3258).

9. The Trustees have, therefore, had to reconsider the whole question and decide whether other satisfactory arrangements could not be made which would not involve so large an expenditure, and this appears to be practicable.

10. As the canal section at a cost of Rs. 7,52,300, to provide an entrance to a coal-basin merely, is out of the question, the next step was to consider whether the proposed boat-basin in the south-west corner of the Harbour was sufficient to meet requirements, or, if not, what modifications were needed.

11. The nautical authorities have, throughout the discussion of the question of Harbour improvements, consistently and unanimously objected to any curtailment of the water area of the Harbour, but their objections and the disadvantages pointed out were overruled, as being of less importance than the advantages to be gained.

12. Without the canal section the boat-basin, as sanctioned in the south-west corner of the Harbour, is found to be totally inadequate to meet the requirements of the Port, and must, therefore, apart from nautical objections to it, be abandoned.

13. It was part of Mr. Parkes’ original proposals to provide a boat-basin in the sand to the south of the Harbour, and the Board has, in reluctantly abandoning proposals previously approved, been compelled to seek a solution of the difficulty in this direction.

14. I submit for the information of Government the proceedings of a special meeting held on Friday, 30th October, together with a sketch of the proposals made by Mr. Pinsent to overcome the difficulties which have arisen, which proposals fully meet all nautical objections and traffic requirements, and are unanimously approved by the Trustees. The plan provides ample accommodation for coal, as well as for

general imports and exports, and leaves the space between the arms of the harbour free for railway communication through the present coal yard, and crane yard, where goods requiring cranes to handle them are now stored. The necessity of taking immediate action to provide better facilities for landing coal is daily increasing in importance. The trade has assumed large dimensions, and the Board can hardly expect to retain it under the present antiquated arrangements for landing. The facilities given by the proposed boat-basin will, it is hoped, lead to increased imports, as the suggested method of landing in large lighters, in bulk, instead of in bags by masula boats, will considerably cheapen the cost by reducing charges.

15. Owing to the absence of the Board's Engineer on leave, the Trustees are unable to submit with this sketch an estimate of the probable cost; but as Mr. Parkes stated that a ship dock could be constructed in the sand to the south of the harbour for Rs. 14,00,000, it is presumed that a shallow boat-basin should not be a very expensive undertaking. It is still uncertain when Mr. Pogson will return; and, as the Board would be glad to see harbour improvements commenced as early as possible, the Trustees would feel obliged if you would permit an estimate to be made in the Public Works Department, which, it is presumed, could be done without difficulty, as there are no features in the scheme requiring special knowledge of engineering problems connected with harbour construction. Should you be able to accede to this request, Mr. Pogson could, on his return, proceed to carry the work out as soon as Government has approved the proposals now submitted, instead of those previously recommended and approved, which, for the reasons given above, have become unsuited to present requirements.

16. The estimated cost of harbour improvements sanctioned in G.O., Marine, No. 119, dated 26th February 1896, was as follows:—

	RS.
Boat-basin	6,63,558
Addition to south pier	54,369
Deepening the harbour	2,19,069
	9,36,996

Two other works were estimated for: sanction to which was withheld, viz:—

	RS.
Canal entrance	7,52,300
Protective groyne	3,91,355
Total	20,80,651

To enable the Board to proceed with these works, it proposed to raise a debenture loan, sufficient to repay Government the outstanding balance of advances, and to provide funds to carry out all the above works; to do which the Board asked for sanction to issue debentures to the extent of Rs. 60,00,000—Rs. 50,00,000 to repay Government, and the balance Rs. 10,00,000, to proceed with the above first three items—that sum with cash and investments in hand being sufficient, with the exception of the protective groyne, regarding the utility of which the Board is not satisfied, and the matter has been referred to the Secretary of State.

17. In G.O., No. 119, Marine, Government sanctioned the works to the extent of Rs. 9,36,996 being carried out, provided the Board is able to raise the necessary funds; but sanction has been accorded by the Government of India to the issue of a debenture loan of Rs. 50,00,000 only, instead of Rs. 60,00,000 as asked for by the Board. The Trust would, therefore, not be able to proceed with those works until sanction had been accorded to the issue of debentures for the extra 10 lakhs asked for.

18. The present proposals, however, are, the Board believes, within its financial resources, and the issue of debentures other than to repay Government will not be required; at any rate for the present, if the proposals now made are approved and sanctioned.

19. The Board's accumulated funds may be briefly summarized as follows:—

	RS.
Estimated opening balance, 1897-98	7,38,000
Due by coast ports	2,00,000
Estimated recovery on sale of tools and plant	2,00,000
Total	11,38,000

The position at the end of the half-year closing on the 30th September is far more favourable than estimated, the opening balance of next official year should be more than noted above; and it would appear that the Rs. 11½ lakhs, which the Board will have to the good, should be ample to build and equip the proposed boat-basin, in supersession of the previously approved estimates and works, referred to in paragraph 16, all of which may be abandoned.

20. There are on hand ready for use, sufficient concrete blocks to construct the protecting arm shown to the east of the entrance to the boat-basin; a wall somewhat similar to that at the Buckingham canal basin would be sufficient for traffic requirements, and it is presumed all that would be needed to retain the sand and secure the low level quays, required for working cargo between the lighters and the sheds for imports, and *vice versa* in respect of exports.

21. The sketch submitted herewith shows suggestions made by Mr. Pinsent for a north entrance, in connection with which he has also submitted again proposals for docks to the south of the harbour. The boat-basin does not interfere with these proposals being ultimately carried out; but, as stated in paragraph 3, the Board is not yet prepared to consider the question of a change of entrance, and does not think that the time has arrived to provide docks. The boat-basin, as now approved, would facilitate a canal connection with the Cooum for the transport of salt, coal, &c.

ENCLOSURE.

MINUTES of the Proceedings of a Special Meeting of the Trustees of the Madras Harbour held at the Board's Office on Friday the 30th October 1896.

PRESENT:

Mr. Ware Austin, I.C.S., Chairman.
 „ W. S. Shaw.
 „ R. J. Black.
 „ H. Scott.
 Commander H. A. Street, R.I.M.

Mr. F. J. Wilson.
 „ J. F. Davies.
 „ Cowasjee Eduljee Panday.
 „ Mirza Mehdy Isphani.

The Trustees assembled at the Board's office at 4-30 P.M., and then proceeded to the south arm of the harbour, where they discussed the sketch of a boat-basin—prepared by the Secretary in accordance with instructions given at the last meeting—for providing accommodation for working general cargo, and coal discharged into lighters from vessels lying in the harbour.

It was decided that, having carefully discussed and considered the various proposals made from time to time for harbour improvements, and having now visited and inspected the site to the south of the harbour available for extensions and improvements, the Trustees approve of the suggestions made by Mr. Pinsent, for utilizing the sand accreted to the south of the harbour, for the construction of a boat-basin, to provide better facilities for working coal and general cargo, and for carrying out the views of the Harbour Improvements Committee, as regards the custody, storage and warehousing of general cargo, as the best means practicable under the altered circumstances of the case for meeting the requirements of the port, and the views expressed by that Committee.

The Chairman was requested to address Government, and to place a draft letter before the Board at its next regular meeting on Friday, 6th November, at 4-30 P.M., embodying the decision the Trustees have arrived at, and explaining their reasons for considering previously approved proposals now unsuited to the requirements of the trade of this port.

ORDER—No. 834, Marine, dated 1st December 1896.

His Excellency the Governor in Council observes that the Harbour Trust Board now propose, in modification of all previous proposals, to limit their attention for the present to the construction of a boat-basin outside the south arm of the harbour and within the sand which has accumulated to the south-west. The proposed canal to the Coom would be connected with this basin. The Executive Engineer, Buckingham Canal division, who is, under separate orders, estimating for the Harbour canal, will also prepare the estimate for the boat-basin in communication with the Harbour Works Engineer.

2. The questions of dredging and of the north-east entrance are separately dealt with in Sir A. Rendel's report now under consideration of the Harbour Trust Board.

(True Extract.)

(Signed) D. McNEIL CAMPBELL, Colonel, R.E.,
Secretary to Government.

To the Chairman, Harbour Trust Board.
" Chief Engineer for Irrigation.
" Presidency Port Officer.

Exd. T. K. Narayana Aiyangar.

NT.
With regard to the N. C. Canal
Sir A. Rendel has in his recent
report stated that the
question is it is necessary for
to my mind that this is the main
question to be kept clear of the
other of the main but the question
forming the N. C. Canal, the board
has of the report does not discuss the
an other of opinion that the N. C. Canal
is the only satisfactory solution of the
question

I have all along been in favour of
for, a better basis for the plan of the
D. W. of the Harbour & the Canal
At the same time it is an object on
the plan is in accordance with
the Canal of the River I have
known

flag C

rendel's report dated

Read the following:—

Letter from the Chairman H.J.B. No 3284 d/6/11/9

W 8 13/11

FOR ORDERS.

The Harbour Trust Board now propose, in modification of all previous proposals, to limit their attention for the present to the construction of a boat basin outside the South arm of the harbour and within the sand which has accumulated to the South West. The proposed canal to the Lagoon would be connected with this basin.

2. The question of dredging is dealt with in Sir H. Lendels' report dated

separate orders, estimating the Harbour Canal, We also prepare the estimate for the boat basin in communication with the Harbour Works Engineer.

2. The questions of dredging, and of the North East entrance are separately dealt with in Sir A. Rendels' report now under consideration of the Harbour Trust Board.

R.S.

30/11/96

2/12

Chairman H.J.B. m.d. 2/12/96
C. P. S. V.
The S.P.O.
sent to S.S. on 11/12/96
5055C
2/12/96.

C.A.W.

2 flag C

23 September 1896 which has been separately referred to the Harbour Trust Board for remarks.

3. With regard to the N.E. Entrance Sir A. Mendel has also dealt with that question, as it is unnecessary for me to say more than that if the harbour entrance can be kept clear by dredging then by all means let the expense of forming the N.E. entrance be avoided, but if dredging does not succeed then I am still of opinion that the N.E. entrance is the only satisfactory solution of the question.

I have all along been in favour of forming a boat basin in the sand to the S.W. of the harbour and taking a canal to the Coonun from it, and on what grounds it was decided to take the canal from

As I noted in another file, in which I put up a copy of the current, the H. T. B. wants to get the estimate for the boat basin made, although their Eng^r has returned. I think the officer who has been ordered to make the canal S.W. of the harbour is also ordered to make the boat basin also. This is the only point requiring action at the moment in P.W.D. & Wharves. The financial question can be disposed of in the F.D. with my own note above mentioned.

MS
257/11/96
261/11/96
A-94 27.11.96

the north I do not know.

5. As the Harbour Engineer has now returned perhaps the Board will reconsider their request to have the estimate for the boat basin prepared by the S.P.W.

6. The general arrangement of the basin shed as sketched with Mr. Piment seems excellent but it will need an Engineer to work out the details.

7. The estimate for the canal from the Coonun will of course be prepared in the S.P.W. and it will be necessary for the officer who prepares it to consult with the Harbour Engineer who (it is presumed now that he has returned to duty) will prepare

Marine (1896) Department.

CURRENT No. 1217

Order

From
The Chairman,
Harbour Trust Board,
Madras.

No. 3284.

Dated 6th Novr. 1896.

Despatched 7th „

Received 10th „

Enclosure : One Sketch.

Spare copies : two.

SUBJECT.

HARBOUR IMPROVEMENTS.

Submitting proposals for the construction of a boat-basin, in the sand south of the Harbour; instead of within the water area as previously proposed.

the Estimate for the boat
basin.
25/11/96
M
FOR ORDERS.
w. g. j. d.
The Chairman, Harbour Trust Board,
Madras.
25/11. 30/11.

BACK PAPERS.

G. O.	No.	Department.	Date.
S.O.	709	marine P.W.	14-10-96 ✓
"	668-9	"	29-9-96 ✓
"	588	"	28-8-96 ✓
"	536	"	4-8-96 ✓
"	449-50	"	20-6-96 ✓
Despatch No 7 of 5-6-96. ✓			
S.O.	386	marine	29-5-96 ✓
"	4159	P.W.	13-5-96 ✓
"	4099	"	11-5-96 ✓
"	1220-1W	"	7-4-96 ✓
Despatch No 12 of 7-5-96. ✓			
"		2 of	26-2-96 ✓
S.O.	1909	P.W.	21-2-96 ✓
Memo 762 marine 18-2-96 ✓			
P.W. Despatch No 2 of 11-2-96 ✓			
S.O.	529-30W	P.W.	11-2-96 ✓
"	10849 A	"	14-12-95 ✓
"	3213	"	5-10-69 ✓
"	2001	"	19-6-69 ✓
"	866	"	17-3-69 ✓
"	867	"	17-3-69 ✓
"	1146	"	8-4-69 ✓
"	2869W	"	8-9-68 ✓
"	2849	"	7-9-68 ✓
"	2773	"	28-8-68 ✓
"	2231	"	15-8-54 ✓
"	430	"	21-3-54 ✓
"	44	"	23-3-54 ✓
"	53	with Dept	28-6-53 ✓
Minutes of Evidence Taken before the Committee appointed to enquire into the question of the position of the entrance to the Madras Harbour. Report of the Committee on Madras Harbour.			

FURTHER PAPERS.

No. 3284.

Harbour Trust Office,

MADRAS, 6th November 1896.

FROM

WARE AUSTIN, ESQ., I. C. S.,
CHAIRMAN, HARBOUR TRUST BOARD,

Madras.

To

THE HON'BLE COL. D. McNEIL CAMPBELL, R. E.,
SECRETARY TO GOVERNMENT,
Marine Department

SIR,

Referring to my letter No. 4894, dated 20th March 1896, and to your Memo-randum, dated 30th July, in which you remark, with regard to the shoaling reported by Mr. Pogson, of the Roadstead and at the entrance of the Harbour, that "the only satisfactory solution of the question from an engineering point of view is, "I believe, the North-east entrance", I have the honor to inform you that the Harbour Board has very carefully reconsidered the whole question of Harbour improvements, from the altered stand-point which has gradually developed since the date of the Harbour Improvements Committee's report, and is of opinion that a North-east entrance would better suit the requirements of the trade of this port than any other form of entrance, provided that the cost of constructing it is not prohibitive.

2. It is observed that, in his evidence before the Committee appointed by the Secretary of State for India in April 1887, Mr. Parkes stated, para. 256-8, "The cost of making that North-east entrance, as designed by the Madras Committee, would be thirteen lakhs of Rupees," and in para. 260, "In order to make this ship dock to the southward of the south pier to the area shown, it would be, in round numbers, say fourteen lakhs".

It would, therefore, appear that Mr. Parkes was of opinion that 27 lakhs of Rupees would provide a North-east entrance to the Harbour—which, it is presumed, included closing the then existing eastern entrance—and a ship dock in the sand to the south.

3. Very costly work has since been carried out, to complete the eastern entrance, which has now been finished; and although the Trustees individually prefer a north-east or northerly entrance, it would only be in case of the present entrance shoaling to such an extent as to jeopardise the fair way into and out of the Harbour, or of works to keep it open being estimated at a very large sum, that they would be willing to seriously consider a change in the position of entrance; and the Board does not consider that the time has yet arrived to provide a ship dock in connection with the Harbour; but agree with Mr. Parkes that if ever this time does come, the sand which has accreted to the south of the Harbour is the best place for it; and, owing to its rapid accumulation, will afford more space and better facilities for the construction of a dock, at an earlier date, than Mr. Parkes anticipated.

2
4. The Trustees will, therefore, await further information regarding the reported shoaling of the Roadstead, which at present does not threaten to close the entrance very rapidly, and must now consider what means should be adopted to improve Harbour facilities at a moderate cost.

5. The Harbour Improvements Committee recommended a boat-basin across the western side of the Harbour, with a canal entrance in the north-west corner, beyond which were provided quays and ample space for dealing with the large coal traffic of the Port, in a locality convenient for despatch by railway.

6. In considering these proposals, the Harbour Board adopted a modified form of basin confined to the south-west corner of the Harbour, as being sufficient for general cargo, while coal was left to be dealt with in the north-west, beyond the canal entrance as proposed by the Committee, in and near the present block-making ground, but with the additional facility of a deep-water berth, alongside of which a steamer could lie to discharge coal, and horses, or to embark troops or passengers.

7. In para. 3 of my letter referred to *supra*, it was pointed out that, as explained in para. 8 of Mr. LeFanu's letter, No. 3258, dated 20th November 1895, "The Trustees are not in a position to recommend to Government to sanction payment for any portion of the canal entrance from Harbour Funds," and in para. 4 I wrote, "should Government decide that the deep quay wall alongside the canal entrance is not required as an integral part of the canal scheme, the Board must view the matter of dredging to provide extra berths in the light in which it is put in para. 3 of the Chief Engineer's (Colonel Pennycuik) note, dated 4th January 1896, viz., that the question is purely a financial one, as to whether the additional accommodation to be obtained is worth the Rs. 2,19,000 to be expended upon it, plus, however, Rs. 5,52,000 the balance chargeable to Harbour Works on account of the canal entrance, to which must also be added the extra cost of the proposed boat-basin in the south-west corner, due to the proposal to give it also a deep water wharf, instead of a boat wharf only as proposed by the Improvements Committee."

8. It is now understood that Government has abandoned the idea of making a canal at the north-west corner; therefore to provide the necessary accommodation for the coal traffic at that spot, the Board would have to incur the whole of the expense necessary to form the entrance without the advantages which may accrue to the Harbour by a canal connection. The canal section was estimated to cost Rs. 7,52,300, and the Board is of opinion that as the canal is not to be made from the north-west corner, it would not be justified in incurring this expense, to provide an entrance to a coal basin only, which basin would be an additional expense not yet estimated for, it being intended when Mr. LeFanu submitted the Board's modifications of the Committee's recommendations to utilise a portion of the canal for landing and stacking coal (*vide* plan A 1 which accompanied the Committee's report, and the plan submitted with Mr. LeFanu's letter No. 3258).

9. The Trustees have, therefore, had to reconsider the whole question, and decide whether other satisfactory arrangements could not be made which would not involve so large an expenditure, and this appears to be practicable.

10. As the canal section at a cost of Rs. 7,52,300, to provide an entrance to a coal basin merely, is out of the question, the next step was to consider whether the proposed boat-basin in the south-west corner of the Harbour was sufficient to meet requirements, or if not what modifications were needed.

11. The nautical authorities have, throughout the discussion of the question of Harbour improvements, consistently and unanimously objected to any curtailment of the water area of the Harbour, but their objections and the disadvantages pointed out were over-ruled, as being of less importance than the advantages to be gained.

12. Without the canal section the boat-basin, as sanctioned in the south-west corner of the Harbour, is found to be totally inadequate to meet the requirements of the Port, and must, therefore, apart from nautical objections to it, be abandoned.

13. It was part of Mr. Parkes' original proposals to provide a boat-basin in the sand to the south of the Harbour, and the Board has, in reluctantly abandoning proposals previously approved, been compelled to seek a solution of the difficulty in this direction.

14. I submit for the information of Government the proceedings of a special meeting held on Friday, 30th October, together with a sketch of the proposals made by Mr. Pinsent to overcome the difficulties which have arisen, which proposals fully meet all nautical objections and traffic requirements, and are unanimously approved by the Trustees. The plan provides ample accommodation for coal, as well as for general imports and exports, and leaves the space between the arms of the Harbour free for railway communication through the present coal yard, and crane yard, where goods requiring cranes to handle them are now stored. The necessity of taking immediate action to provide better facilities for landing coal is daily increasing in importance. The trade has assumed large dimensions, and the Board can hardly expect to retain it under the present antiquated arrangements for landing. The facilities given by the proposed boat-basin will, it is hoped, lead to increased imports, as the suggested method of landing in large lighters, in bulk, instead of in bags by masula boats, will considerably cheapen the cost by reducing charges.

15. Owing to the absence of the Board's Engineer on leave, the Trustees are unable to submit with this sketch an estimate of the probable cost; but as Mr. Parkes stated that a ship dock could be constructed in the sand to the south of the Harbour for Rupees 14,00,000, it is presumed that a shallow boat-basin should not be a very expensive undertaking. It is still uncertain when Mr. Pogson will return; and, as the Board would be glad to see Harbour improvements commenced as early as possible, the Trustees would feel obliged if you would permit an estimate to be made in the Public Works Department, which, it is presumed, could be done without difficulty, as there are no features in the scheme requiring special knowledge of engineering problems connected with Harbour construction. Should you be able to accede to this request, Mr. Pogson could, on his return, proceed to carry the work out as soon as Government has approved the proposals now submitted, instead of those previously recommended and approved, which, for the reasons given above, have become unsuited to present requirements.

16. The estimated cost of Harbour improvements sanctioned in G. O., Marine, No. 119, dated 26th February 1896, was as follows:—

Boat-basin	...	...	Rs.	6,63,558
Addition to south Pier	...	...	"	54,369
Deepening the Harbour	...	...	"	2,19,069
			Rs.	9,36,996

Two other works were estimated for: sanction to which was withheld, viz:—

Canal entrance	...	...	"	7,52,300
Protective Groyne	...	...	"	3,91,355

Total Rs. 20,80,651

To enable the Board to proceed with these works, it proposed to raise a debenture loan, sufficient to repay Government the outstanding balance of advances, and to provide funds to carry out all the above works; to do which the Board asked for sanction to issue debentures to the extent of Rs. 60,00,000; Rs. 50,00,000 to repay Government, and the balance Rs. 10,00,000, to proceed with the above first three items, that sum with cash and investments in hand, being sufficient, with the exception of the protective groyne, regarding the utility of which the Board is not satisfied, and the matter has been referred to the Secretary of State.

17. In G. O., No. 119, Marine, Government sanctioned the works to the extent of Rs. 9,36,996 being carried out, provided the Board is able to raise the necessary funds; but sanction has been accorded by the Government of India to the issue of a debenture loan of Rs. 50,00,000 only, instead of Rs. 60,00,000 as asked for by the Board. The Trust would, therefore, not be able to proceed with those works until sanction had been accorded to the issue of debentures for the extra ten lakhs asked for.

18. The present proposals, however, are, the Board believes, within its financial resources, and the issue of debentures other than to repay Government will not be required; at any rate for the present, if the proposals now made are approved and sanctioned.

19. The Board's accumulated funds may be briefly summarised as follows:—

Estimated opening balance 1897-98	...	Rs.	7,38,000
Due by Coast Ports...	...	"	2,00,000
Estimated recovery on sale of tools and plant	...	"	2,00,000

Total Rs. 11,38,000

The position at the end of the half year closing on the 30th September, is far more favourable than estimated, the opening balance of next official year should be more than noted above; and it would appear that the Rs. 11½ lakhs, which the Board will have to the good, should be ample to build and equip the proposed boat-basin, in supersession of the previously approved estimates and works, referred to in para. 16, all of which may be abandoned.

20. There are on hand ready for use, sufficient concrete blocks to construct the protecting arm shown to the east of the entrance to the boat-basin; a wall somewhat similar to that at the Buckingham canal basin would be sufficient for traffic requirements, and it is presumed all that would be needed to retain the sand and secure the low level quays, required for working cargo between the lighters and the sheds for imports, and vice versa in respect of exports.

21. The sketch submitted herewith shows suggestions made by Mr. Pinsent for a north entrance, in connection with which he has also submitted again proposals for docks to the south of the Harbour. The boat-basin does not interfere with these proposals being ultimately carried out; but, as stated in para. 3, the Board is not yet prepared to consider the question of a change of entrance, and does not think that the time has arrived to provide docks. The boat-basin, as now approved, would facilitate a canal connection with the Cooum for the transport of salt, coal, etc.

I have the honour to be,

Sir,

Your most obedient servant,

W. Austin

Chairman,
Harbour Trust Board.

Minutes of the Proceedings of a Special Meeting of the Trustees of the Madras Harbour,
held at the Board's Office on Friday, the 30th October 1896.

Present:

Mr. Ware Austin, I. C. S., Chairman.

„ W. S. Shaw.

„ R. J. Black.

„ H. Scott.

Commander H. A. Street, R. I. M.

Mr. F. J. Wilson.

„ J. F. Davies.

„ Cowasjee Eduljee Panday.

„ Mirza Mehdy Ispahani.

The Trustees assembled at the Board's Office at 4-30 p. m., and then proceeded to the south arm of the Harbour, where they discussed the sketch of a boat-basin—prepared by the Secretary in accordance with instructions given at the last meeting—for providing accommodation for working general cargo, and coal discharged into lighters from vessels lying in the Harbour.

It was decided that, having carefully discussed and considered the various proposals made from time to time for Harbour improvements, and having now visited and inspected the site to the south of the Harbour available for extensions and improvements, the Trustees approve of the suggestions made by Mr. Pinsent, for utilizing the sand accreted to the south of the Harbour, for the construction of a boat-basin, to provide better facilities for working coal and general cargo, and for carrying out the views of the Harbour Improvements Committee, as regards the custody, storage and warehousing of general cargo, as the best means practicable under the altered circumstances of the case for meeting the requirements of the Port, and the views expressed by that Committee.

The Chairman was requested to address Government, and to place a draft letter before the Board at its next regular meeting on Friday, 6th November, at 4-30 p. m., embodying the decision the Trustees have arrived at, and explaining their reasons for considering previously approved proposals now unsuited to the requirements of the trade of this Port.

W. AUSTIN,

Chairman,
Harbour Trust Board.