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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No. <u>1124.</u>	Press ~~Mis.~~
<u>572-595-</u>	
Dated <u>27-6-</u>	<u>1867.</u>

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
27th June 1867.*

Read the following papers :—

No. 592. From R. F. CHISHOLM, Esq., C. E., Executive Engineer, Presidency, to the Secretary to Government, Public Works Department, dated Madras, 23rd March 1867, No. 162.

1. I have the honor to acknowledge the receipt of your Memorandum, No. 64 of yesterday's date, inquiring what the probable cost of the Boys' branch of the Lawrence Asylum buildings would be, if all decorative or architectural accessories were dispensed with.

2. On referring to the detailed estimate, I find that the estimated cost of purely architectural and decorative accessories amounts to 15,784 Rupees, or less than four per cent. on the estimated outlay.

3. I trust it may not be considered out of place if I venture to offer a few remarks on the subject of the decorations of this building. I do so with greater confidence, as I am in a position to point out how deductions can be made in the cost of the Boys' branch of the Asylum, without materially affecting either the general appearance, or the extent of accommodation.

4. In the first place, it is most difficult in structures of this kind to define what legitimately comes under the head of ornament. Suppose, for instance, an arch is turned in three concentric rings. If shorn of all pretensions to ornament it would appear as in sketch 1, see the margin; if we make the edge of the first brick bead moulded, project every second brick in the second ring, and give a splay moulded and projected brick for the third ring, the result will be ornament of the very highest architectural merit (see figure 2). The splay moulded bricks cost no more than common bricks, and, with regard to the labor, I never yet met a workman who would not prefer to build No. 2 in preference to No. 1, still I admit that the cost would be a little greater; I cannot exactly explain why, except, perhaps, that the workmen take a real interest in their work and turn out a better article at a very slight increased cost. Now, with the exception of the

glazed tiles, all the ornament in the proposed building, both internal and external, is formed as in figure 2, and I scarcely think the most parsimonious would, on comparing the two, wish it to be omitted.

5. The tower above the Principal's studio also forms a portion of the 15,780 stated above. In this particular style a feature of this kind becomes almost a necessity, without it the buildings would appear a scattered mass, having little or no relation to each other. A crowning member to such a composition bears the same relation to the whole, as a capital does to its column, and if no tower is to

be erected, I would strongly recommend that a symmetrical plan be reverted to, at the same time pointing out that the cost of "filling out" a symmetrical plan will more than quadruple the cost of this feature. I have not the means of ascertaining the amount of Major Farewell's original estimate for a symmetrical plan, but the revised and reduced estimate including the Masters' houses and

Principal's quarters amounted to	Rupees 4,31,000
My own estimate amounts to	" 4,04,000

Difference .. 27,000

and this result was only arrived at, in the symmetrical plan, by adopting an objectionable arrangement, and an extremely ugly facade. Stated simply, a symmetrical building without ornament of any kind will cost about as much as a random building with a few decent pretensions to style and unity, from which it may be argued that the cheapest of all buildings is a random plan, without any pretensions at all; this is perfectly true; but the result would be similar to the prospect offered by the *baels* of London houses.

6. The glazed tiles are of course purely ornamental, they take the place of polished marble in the original specimens of the style. They do not cost much, and apart from ornamenting the structure, I trust the amount expended in the manufacture, may be the means of introducing the art of *encaustic* tile-making into Madras. The sum I have allowed for this work is large, and I have no doubt a considerable saving may be effected: as I am responsible for this item of the estimate, I have taken the precaution to allow a wide margin.

7. I now beg leave to point out how reductions can be made in the amount of the estimate, without altering or curtailing the ornate portions.

1st.—I would reduce the corridors throughout the building from eight feet to six feet broad, this would effect a saving of.. ..	Rs. 3,500
2nd.—A portion of the Hospital might be devoted to the residences of four Masters, which would effect a saving of	19,300
3rd.—I would make the roof of corrugated iron throughout, which would reduce the estimate further by ..	7,250
4th.—I would adopt a permanent floor in place of a boarded floor, by which a further saving could be effected of	11,100
Say in all ..	41,150

8. I make the fourth suggestion with some hesitation, as Major Farewell considers terrace floors damp and uncomfortable in that particular climate, still as the amount is large, I think the matter worthy of further consideration.

9. I believe further reductions, amounting to about 20,000 Rupees, could be effected, but it would be necessary, before entering into the particulars of these deductions, that I should meet with and consult the Sanitary Commissioner.

APPENDIX B

1. I beg leave to add a few remarks after perusing the Government of India Order
- 2 The removal of the Girls' branch of the Lawrence Asylum from Lovedale leaves the site available for the Boys' branch. There is ample room on this site to spread the building out into a single line of dormitories with corridors running along the back. The cost would be probably increased, and the plans would have to be entirely remodelled, but to prevent delay, the working drawings might be commenced, and the work proceeded with after a sketch elevation had been submitted for approval

(Signed) R. F. CHISHOLM.

4th June 1867

Memorandum by Mr. Chisholm on the Lawrence Asylum Plans, Ootacamund

1. I have perused very carefully Colonel Crommelin's Memorandum on the plans for the proposed Lawrence Asylum
- 2 The general sanitary principles and arrangements which Colonel Crommelin has touched on, are so admirable, and have been so clearly and unmistakably laid down in the reports of the various Sanitary Commissions appointed by Government, that there can be no doubt as to the "pavilion" system being the only arrangement in building, which obtains a maximum of light and air, and that the detailed rules to be generally adopted are those laid down in the Commissioner's Blue Books. As I have held these opinions since first perusing the Commissioner's report, I was only too eager to adopt the pavilion system when the preparation of the designs was entrusted to me, so far as the limited area of the building space would permit. I forward the ground plans of the Boys' Asylum, in order that it may be seen how closely I adhered to these principles. Since these plans were drawn out, I have had an opportunity of seeing the site and conversing with professional residents, and I am of opinion that were such plans carried into execution, half the children would die of cold, or the building would be so closed by the inmates as to make it injurious from a collection of foul air.*

3 Unfortunately the northern aspect presents the principal elevation, but even were this not the case, the building area is too limited to admit of leaving the northern face open. It will be observed, on reference to the plans, that I have put as few dormitories on this face as possible, and that the chief part of the northern wing of the structure is on open arches, and if necessary, the whole of the under part can be left open. It will be observed also that I have turned the axis of the building 11° east, and broken it up into as many angles as possible, with the view of obtaining a fair distribution of sunshine.

4 I adopted this arrangement after the most careful consideration of the question, and after I had made numerous sketches of other arrangements, the back-to-back arrangement, although objectionable in principle is, in my opinion, under the peculiar circumstances of the case, the arrangement which embodies the minimum number of faults

5 I have adopted the scale of accommodation allowed in England in Institutions of the kind. In the Royal Masonic Institute, one of the latest examples (erected 1865), each boy is allowed 40 superficial and 500 cubic feet in the dormitories. I have allowed 50 superficial feet, and a minimum cubical area of 600 feet. The School-room space might be slightly increased with advantage, but I would strongly recommend that the method of dividing the school space into one large room, and three or four small class-rooms be retained. I know of no English example (and I have plans of six different designs erected within the last ten years) where any other arrangement has been tried, and it would seem to me that on such a question we can have no better guide than that of experience.

* In Wellington, a much warmer and more sheltered spot, the Soldiers, I have heard, cannot be prevented from stopping up the air shafts with their clothes

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27th June 1867.*

Height of Dormitories

are 13 feet from floor to floor and the upper average 15 feet in height, and are so figured on the copies in my office.

Verandahs

opinion that verandahs would add materially to the discomfort of the inmates. A verandah, if sufficiently open, could be no protection against stormy weather, and would completely rob the walls of sunshine. The object in a cold and damp climate is to obtain warmth and dryness. The experience obtained at Wellington, where verandahs are provided, should be sufficiently conclusive on this point.

8 In conclusion, I beg to state that architectural considerations have in no way caused me to deviate from the principles laid down by Sanitary authorities, and that I make the above remarks with no desire to retain the external elevations.

9. I append a letter on the cost of the ornament which seems to have been considered a little lavish.

(Signed) R. F. CHISHOLM,
Architect.

No. 593. From the Secretary to the Government of India, Public Works Department, (Military Works,) to the Secretary to Government of Madras, in the Public Works Department, dated Simla, 29th May 1867, No. 523 M.

No 455, dated 16th February 1867.
„ 787, „ 15th March „

	RS
Male Asylum	4,03,979
Female do.	2,74,377
Church	95,005
Hospital	79,700
Works already executed	1,30,173
Total	9,83,234

1. I am directed to acknowledge the receipt of your letters marginally noted, submitting for sanction designs with estimates aggregating Rupees 9,83,234 in amount, for the proposed Lawrence Asylum buildings at Ootacamund, as specified on the margin, and in reply to communicate the following observations and orders thereon:—

2. While fully recognizing the merits of the designs submitted, His Excellency the Governor General in Council observes, that the expenditure to be incurred in carrying them into effect exceeds the amount which His Excellency would consider himself justified in allowing for the object in view.

3. In consideration, however, of the expense that has been already incurred on the work, and of the fact of the working establishment having been formed on the site, His Excellency in Council is pleased to sanction the design and estimate amounting to Rupees 4,03,979 for the Male Asylum, as also the expenditure on works already executed, viz, Rupees 1,30,173, (making a total of Rupees 5,34,152,) leaving it to the Government of Madras to judge, first, whether some saving might not be effected by dispensing with a

portion of the ornamentation, and adopting a more economical design for the stables and offices of the Male Asylum; and, secondly, whether the proposed buildings for the Female Asylum and Church should not be altogether dispensed with, the girls being provided for, by moderate though efficient additions, to the building which forms the present Male Asylum, and the Church by the appropriation of a room in each Asylum, in which the children might be conveniently assembled for prayers.

*Proceedings of the Madras Government, Public Works Department,
27th June 1867.*

4. Annexed is a copy of a Report by Colonel Crommelin, the Inspector General of Military Works, upon the Asylum buildings as designed, in a sanitary point of view, the suggestions in which His Excellency in Council desires may be taken into careful consideration and disposed of by the Government of Madras in communication with its Sanitary Officers. There is one point touched upon therein, which His Excellency has desired me to bring to prominent notice, viz, the evils of mixed ventilation. His Excellency in Council considers that a series of dormitories ventilating into a common passage, is a most objectionable arrangement in any climate, as tending to facilitate the spread of disease. This defect could easily be remedied in the present case without any outward change of the building, and I am to request that some means may be adopted accordingly of isolating the exit of foul air from each dormitory.

5. As regards the Hospital, I am to state that orders on the estimate will be held over, pending the receipt of the proposed plan for the building.

6 The sanction now accorded has been registered in this Office as No. 21 M of 1867-68. The designs and estimates are returned.

Note by Lieutenant-Colonel W. A. Crommelin, R. E. C. B., Inspector General of Military Works, dated 7th March 1867

LAWRENCE ASYLUM, OOTACAMUND

1. The design for the above Institution is so admirable in its architectural features and in many of the details of general arrangement, and has had so much labor bestowed upon it, that it is quite an invidious task to be obliged to pass any disparaging criticisms upon it.

2 This design, however, has certain sanitary defects, which cannot well be passed over, and which may be briefly stated as follows:—

1st—The component buildings of both Male and Female Asylums are so arranged, that they almost entirely shut in the enclosed areas, ventilation of the blocks would thus be much obstructed, but the difficulty could, in a degree, be overcome by freely opening out the corners.

2nd—The dormitories have north and south as well as east and west aspects. It is presumed that at Ootacamund, as well as at other Stations generally, there is one aspect more suitable than any other with reference to prevailing winds. It is generally considered that at Hill stations a north aspect is to a certain extent objectionable, as being bleak and devoid of sunlight.

3rd—The arrangement of back-to-back dormitories, having windows or doors on only one of the long sides, and with an intervening corridor, is generally considered by Sanitary authorities as being very objectionable. Whatever be the direction of the wind, one line of wards will generally interfere with the ventilation of the other; foul air is, moreover, apt to collect in the corridors and become diffused throughout the wards, and the wards and corridors will ventilate into each other, which is considered unsatisfactory.

4th.—The positions of the wash houses and night privies, opposite one of the long sides of the dormitories are unsatisfactory, as effluvia is liable to pass from these out-offices into the wards. The out-offices should be at the end of the wards, but the general block arrangement that has been adopted prevents their being so placed.

5th—The floor space per child allowed in the dormitories, viz, 54 superficial feet, seems hardly sufficient. The wards being 20 feet wide, and allowing 2½ feet for the width of a bed, the distance between beds would be only 2½ feet. Perhaps 6 running feet per child would be sufficient, this would give 60 superficial feet per child. For Soldiers in the Hills 77 superficial feet per man are allowed.

6th—The space per child in the School-rooms, 97 superficial feet also appears too little. For Barrack School-rooms we allow 15 superficial feet per pupil. Twelve superficial feet per pupil should, perhaps, be considered a minimum allowance.

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27th June 1867.*

7th —One large general School-room, in addition to a few small class rooms, seems hardly

* In the case of the Boys' School-room.

sufficient for so many children, especially when the breadth* of the room (36) is so great in

comparison with the length (72 feet) It would be exceedingly difficult to keep such an area, when filled with some 300 children, properly ventilated. It would be preferable to provide two or three large School-rooms, the breadth of which should not exceed 24 feet

8th —The same remark applies, although in somewhat less degree, to the dining hall.

9th —In the section on drawing 7-9 feet are given as the height of dormitories on the ground and upper floors, I would not give any dormitory a less height than 14 feet, particularly when the allowance of floor space is limited

10th —The total absence of verandahs seems to me to be a mistake. It has been decided that verandahs are absolutely necessary in Hill stations for Barracks, as protection against wind and storms. Without such protection the dormitories will be at times cold, damp, and uncomfortable

11th —As a general remark, it may be observed that, in a sanitary point of view, the only block arrangement of buildings for the accommodation of considerable bodies of people, whether they be soldiers, hospital patients, school children, &c, &c, that is likely to prove satisfactory, is that generally known as the pavilion system

3 It may not be out of place for me to mention here, that the estimate, roughly taken at 10 lakhs, for accommodation, comprising Schools, Church, Masters' houses, day-rooms, &c, &c, for 800 children, appears to me to be moderate, and I do not think that it need be expected that full accommodation of the nature provided in the designs can be built for less than 12 or 15 hundred Rupees a pupil

4. Our detailed estimate for complete accommodation of every kind for a Regiment of Infantry is 15 lacs, this gives a rate of nearly 2,000 Rupees per man

(Signed) W A CROMMELIN, Lieut -Colonel, R E,
Inspector General of Military Works.

Referred, with Mr. Chisholm's letter of the 23rd March last, to the Sanitary Commissioner, for such observations as he may have to offer.

(Signed) CHARLES A. ORR, Colonel, R. E.,
19th June 1867. Secretary to Government.

No. 594. From the Sanitary Commissioner, Madras, to the Secretary to Government, Public Works Department, dated Madras, 25th June 1867, No. 198.

21 Plans

1 Letter from the Secretary to the Government of India, to the Secretary to Government, Public Works Department, Madras, dated 29th May 1867, No. 523 M.

1 Memorandum of Lieutenant-Colonel Crommelin, with enclosures, dated 7th March 1867

1 Memorandum of Mr Chisholm

2 Estimates

1. I have the honor to acknowledge your docket dated 19th June 1867, upon a letter from the Secretary to the Government of India upon the subject of the Lawrence Asylum, and Mr Chisholm's letter explaining certain details in the design and construction of the Asylum buildings.

2. Of the objections raised by Colonel Crommelin on sanitary grounds, that which has attracted prominent attention is the back-to-back arrangement of the dormitories with a corridor between each dormitory.

3. There can be no doubt that, under ordinary circumstances, this is not a desirable arrangement, and that, had abundant space been available for both Male and Female Asylums on the site selected, it would have been better to have avoided the placing a corridor between the dormitories.

*Proceedings of the Madras Government, Public Works Department,
27th June 1867.*

4. At the same time, bearing in mind the moderate length of these corridors, the fact that they have ample means of ventilation at either end, that the dormitories themselves will be exceedingly well-proportioned, well-ventilated rooms, I can see no reason why, in such a climate as that of Ootacamund, there should be any accumulation of foul air, or any danger to the health of the occupants of the dormitories.

5. As regards the position of the lavatories and night privies, to which objection has been raised, the general block arrangement prevents their being placed at the end of the wards.

6. To the lavatories, I conclude, no serious objection can be made. The privies are to be Jennings' patent water closets, and will be separated from the dormitories by a well ventilated gallery. If there are double self-closing doors to this gallery, I do not think that any evil will arise.

7. I entirely concur with Mr. Chisholm in thinking verandahs ill-suited for buildings on the Neilgherry Hills

8. I think that Colonel Crommelin's remarks, paragraphs 5 and 6, as regards increased floor space, are just, and it will be an advantage to give additional surface space both in the dormitories and school-rooms.

9. With the alterations indicated above, I believe that the very handsome building designed by Mr. Chisholm will prove to be unobjectionable on sanitary grounds.

No. 595. ORDER THEREON, 27th June 1867, No. 1,924.

MILITARY WORKS, No. 42.

1. These papers will be communicated to Mr. Chisholm, with a view to his remodelling his designs for the Male

branch of the Lawrence Asylum at Ootacamund to meet, as far as possible, the views of the Government of India and the Sanitary Commissioner, improving where necessary the ventilation and giving such increased floor space as the area of the site and the arrangements of his plan will admit. It occurs to Government that, perhaps, this may now be readily effected by appropriating for the accommodation of some of the Masters a portion of the Hospital, which is larger than is required under the present altered circumstances.

2. Mr. Chisholm will be at liberty to proceed to Ootacamund, if necessary, and will take the opportunity of preparing a design for adapting the buildings of "Stonehouse," now occupied by the boys of the Asylum, for the accommodation of 400 girls.

(True Extract)

(Signed) CHARLES A. ORR, Colonel, R. E.,
Secretary to Government.

To R. T. Chisholm, Esq., Executive Engineer, with twenty-one Plans and three Estimates
To the Superintending Engineer, 7th Division
" Sanitary Commissioner.

" Educational Department
" Controller of Public Works Accounts
" Accountant General

Exd. S T. Augustin.

Throu

R. P. Leitch, Esq.

Executive Engineer Presidency

Colonel G. & Mrs R. E.

Secretary to Govt. P. W. D.

Madras March 1867

Sir,

I have the honor to acknowledge the receipt of your memo. N. 64 of yesterday's date enquiring what the probable cost of the Boys Branch of the Lawrence Asylum building would be if all decorative or architectural accessories were dispensed with.

2 On referring to the detailed Estimate, I find that the estimated cost of purely architectural and decorative accessories amounts to Rs. 15,784 Rupees, or less than 4 percent on the Estimated outlay.

3 I trust it may not be out of place if I venture to offer a few remarks on the subject of the decorations of the building. I do so with greater confidence, as I am in a position to point out how deductions can be made in the cost of the Boys Branch of the Asylum without ~~materially~~ affecting either the general

appearance or the extent of accommodation.
 In the first place it is not
 difficult in structures of this kind to design
 which legitimately comes under the head of
 ornament. A very good example is an arch
 continued in 3 consecutive rows. If shown
 of all pretensions to ornament it would

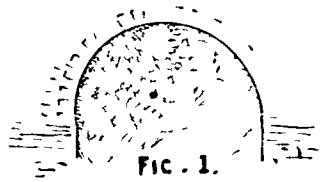


FIG. 1.

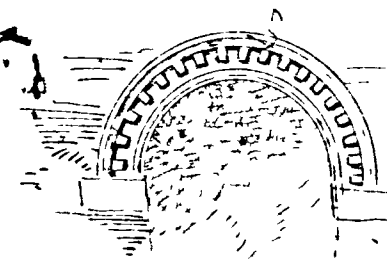


FIG. 2.

appear as ornament. But
 perhaps if we make the top
 of the first brick arch moulded,
 project every second brick
 in the second row, and run
 a string moulded and bracketed
 bricks for the third row. The
 result will be ornament, the
 very highesturable kind
 merit, (see Figure 2). The
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 no more than common bricks
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I never yet met a man who would not
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 Still I admit that the cost would be a
 little greater, I cannot exactly explain
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 like all the ornament in the proposed
 building is in internal and external
 formed as in Fig 2, and the arches
 the most, baroque, and the most
 the line which it is admitted.

The Survey above the Principals
 stated also forms a portion of the 1875/
 stated above. In this particular style a
 feature of this kind becomes almost a
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 appear a scattered mass having little or
 no relation to each other. A crowning member
 to such a composition bears the same relation
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 and if no tower is to be erected, I would
 strongly recommend that a symmetrical
 plan be resorted to, at the same time pointing
 out that the cost of "filling out" a symmetrical
 plan, will more than quadruple the cost
 of the feature. I have not the means of
 ascertaining what the amount of Major
 Farnwell's original Estimate was for a
 symmetrical plan, but the revised & reduced
 Estimate including the Master houses &
 Principals Quarters amounted to 4,340 00
 My own Estimate amounts to 4,040 00
 Difference 27,000

and this result was only arrived at in the
 symmetrical plan, by adopting an objectionable
 arrangement, and an extremely ugly facade.
 Stated simply, a symmetrical building
 without ornament of any kind, will cost
 about as much as a random building with
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 cheapest of all buildings is a random
 plan without any pretensions at all,

this is perfectly true, but the result would be similar to the prospect offered by the backs of London houses.

6 The Glazed tiles are of course purely ornamental, there is no place for polished marble in the original specimens of the style. This does not cost much and a bit of green ornamenting the structure, I trust the architect expended in the manufacture, may be the means of introducing the use of encaustic tile making in to India. The sum I have allowed for this work is very large but I have no doubt a considerable saving in effect. I am responsible for this item of the estimate I have to know the presentation to allow a wide margin.

7 I now beg leave to point out how reductions can be made in the amount of the Estimate without altering or curtailing the ornate portions.

- 1st I would retain the corridors throughout the building from 8 ft to 6 ft broad, this would effect a saving of Rupees 5500
- 2nd A portion of the Hospital might be devoted to the Residence of 4 Masters which would effect a saving of Rupees 19,500
- 3rd I should make the corridors throughout which would reduce the Estimate further by 7,250

Grand Total 50,050

as many angles as possible with the view of obtaining a fair distribution of sunshine.

Back to Back
Arrangement
of Dormitories.

I adopted this arrangement after the most careful consideration of the question, and after I had made numerous sketches of other arrangements. The back to back arrangement although objectionable in principle, is in my opinion under the peculiar circumstances of the case the arrangement which embodies the minimum number of faults.

Accommodation
Dormitories
School Rooms

I have adopted the scale of accommodation allowed in England in Institutions of the kind. In the Royal Marine Institute, one of the latest examples (erected 1865) each boy is allowed 400 cu ft and 500 cubic feet in the Dormitories. I have allowed 50 cu ft feet & a minimum cubical area of 600 feet. The school room space might be slightly increased with advantage, but I would strongly recommend that the method of dividing the school space into one large Room and three or four small class Rooms be retained. I know of no English example (and I have plans of six different designs erected within the last 10 years) where any other arrangement has been tried, and it would seem to me that on such a question, we can have no

Height of
Dormitories

better guide than that of experience -
The figures on the plans sent to
Culcutta much be incorrect. The lower
dormitories are 13 feet from floor ^{to} floor
and the upper ones 15 feet high & are
so figured on the copies in my office.

Verandahs.

I very respectfully beg to differ
from Col. Croome on this point. I am
of opinion that Verandahs would be materially
to the discomfort of the inmates. A Verandah
if sufficiently open could be no protection
against stormy weather & would completely
rob the walls of sunshine. The climate was cold
& damp & climate to obtain warmth and
dryness. The experience obtained at
Wellington where Verandahs are provided
should be sufficiently conclusive on this point.

In conclusion, I beg to state that
architectural considerations have in no
way caused me to deviate from the principles
laid down by sanitary authorities & that
I make the above remarks with no desire
to retain the external elevation.

I append ~~an extract~~ from a
letter on the cost of the ornaments which
seems to have been considered a little
lavish.

R. C. Croome - Secy

Appendix B.

I beg leave to add a few remarks
after perusing the Government of India order.
The removal of the Girls Branch
of the Lawrence Asylum from Low Dule
leaves the site available for the Boys Branch.
There is ample room on this site to spread
the building out into a single line of
Dormitories with corridors running
along the back. The cost would be probably
increased and the plans would have to
be entirely remodelled but to prevent
delay the working drawings might be
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with after a sketch elevation had been
submitted for approval.

21 June 1887. R. C. Croome

Memorandum by Mr. Whishaw on the
Plans
Laurence Cayland, Portacamaund

I have perused very carefully
Colonel Commens' memorandum on the
plans for the proposed Laurence Cayland.

2. The general sanitary principles
and arrangements which Colonel Commens
has touched on, are so admirable and have
been so clearly and unmistakably laid
down in the Reports of the various Sanitary
Commissions appointed by Government,
that there can be no doubt as to the "pavilion"
system being the only arrangement in
building, which obtains a maximum
of light and air, and that the detailed rules
to be generally adopted are those laid down
in the Commissioners' Blue Books. As I
have held these opinions since first perusing
the Commissioners' Report, I was only too
eager to adopt the pavilion system when
the preparation of the designs was entrusted
to me, so far as the limited area of the

building space would, be met. I intend to
 around, I think to be a common one. I
 think it may be a good idea, I adhered
 to these principles. I had nice, blue and
 drawn out I had a number of instances of
 being the site and conversion of the
 accidents, and I am of opinion that were
 such, plans carried into execution, the
 children would be of color, the building
 would be a closed in the summer, to make
 it in summer, from a collection of four or five

Object

unfortunately the plan, as it
 presents the principle, elevation such as
 were the case, the building area is
 too limited to admit of leaving the front
 face open. It will be observed on reference
 to the plan that I have put a few dormitors
 on this face as possible and that the chief
 part of the Northern wing of the structure
 is on open arches and if necessary the whole
 of the under part can be left open. It will
 be observed also that I have turned the axis
 of the building 11° East and how it is built

* I'm Wellington, much warmer and
 more sheltered than the others I have
 heard cannot be prevented from stopping
 up the air shafts with their bottles.

3 16
 45 I would adopt a permanent
 floor in place of a boarded floor
 by which a further saving
 could be effected of
 Say in all

30.050	19
11.100	
41.150	

8 I make the 4th suggestion with
 some hesitation as Major Farewell considers
 Terrace floors damp and uncomfortable
 in that particular climate, still as the
 amount is large I think the matter
 worthy of further consideration.

9. I believe further reductions amounting
 to about 20000 Rupees could be effected, but
 it would be necessary before entering into the
 particulars of these deductions that I should
 meet with and consult the Sanitary Commissioned

I have the honor to be
 Sir

Your most obedient Servant.

Chubbuck -

Lawrence Asylum Cotacambund.

2. This design, however, has certain sanitary defects which cannot well be passed over and which may be briefly stated as follows.

2.5 The dormitories have North and

and

12-11-1884
Chas. G. Smith for Dr. Smith

John

11.000
1874 Consolidated Co.
Ed. Cass & Co.
100
1874 Cass & Co.

2^d 2nd } attached.

23 March 07
 23 March 07
 23 March 07

From
H. P. Dickinson

Agnes's cost of living
Amount of domestic help

220592

210 1924. 27 June/67

and South as well as East and West aspects. It is presumed that at Otacamund as well as at other stations generally there is one aspect more suitable than any other with reference to prevailing winds. It is generally considered that at Hill Stations a North aspect is to a certain extent objectionable, as being black and devoid of sunlight.

3^o The arrangement of back to back dormitories, having windows or doors on only one of the long sides, and with an intervening corridor, is generally considered by Sanitary Authorities as being very objectionable. Whatever be the direction of the wind, one line of wards will generally interfere with the ventilation of the other, foul air is moreover apt to collect in the corridors and become diffused throughout the wards, and the wards and corridors will ventilate into each other, which is considered unsatisfactory.

4^o The positions of the wash houses and night-privies, opposite one

one of the long sides of the dormitories are unsatisfactory, as affluvia is liable to pass from these out-offices into the wards, ^{the out-offices} should be at the end of the wards, but the general block arrangement that has been adopted prevents their being so placed.

5^o The floor space per Child allowed in the dormitories, namely 54 superficial feet seems hardly sufficient. The wards being 20 feet wide, and allowing $2\frac{3}{4}$ feet for the width of a bed, the distance between beds would be only $2\frac{3}{4}$ feet. Perhaps 6 running feet per Child would be sufficient. This would give 60 superficial feet per Child. For soldiers in the Hills 77 Supl. feet per man are allowed.

6^o The space per Child in the School rooms, 9.7. Supl. feet also appears too little. For Barrack School rooms we allow 15 Supl. feet per pupil, 12 superficial feet per pupil should perhaps be considered a minimum allowance.

7^o One large general School room in addition to a few small class

class rooms seems hardly sufficient for
so many children.

8. ^{especially when the breadth} of the room (38) is so great in comp^{arison} with the length (42). ^{In the case of the large school room} It would be exceedingly difficult to keep such an area, when filled with some 300 children, properly ventilated. It would be preferable to provide 2 or 3 large school rooms, the breadth of which should not exceed 24 feet.

8. ⁴ The same remark applies, although in somewhat less degree, to the dining hall.

9. ⁷ In the section on drawing 7-9 feet are given as the height of dormitories on the ground and upper floors. I would not give any dormitory a less height than 14 feet, particularly when the allowance of floor space is limited.

10. ⁵ The total absence of verandahs seems to me to be a mistake. It has been decided that verandahs are absolutely necessary in Hill Stations for barracks, as protection against wind and storms. Without such

such protection the dormitories will be at times cold, damp, and uncomfortable.

11. ¹⁵ As a general remark, it may be observed that, in a Sanitary point of view, the only block arrangement of buildings for the accommodation of considerable bodies of people, whether they be soldiers, hospital patients, school children, &c., that is likely to prove satisfactory, is that generally known as the Pavilion system.

3 It may not be out of place for me to mention here, that the estimate, roughly taken at 10 lakhs, for accommodation comprising schools, Church, Masters Houses, day rooms, &c., for 800 children, appears to me to be moderate, and I don't think that it need be expected that full accommodation of the nature provided in the designs can be built for less than 12 or 15 hundred Rupees a pupil.

4 Our detailed estimate for complete accommodation of every kind for a Regiment of Infantry is

is 15 lakhs - this gives a rate of
nearly 20000 per man.

157 W. A. Crommelin,
Lt Col R.C.
Inspector Genl of Public Works

No 198

12 21
OFFICE OF SANITARY COMMISSIONER
MADRAS, June 25 1867.

From, The Honorable R. S. Ellis C. B.
Sanitary Commissioner, Madras.

To, Colonel G. A. Orr, R. E.
Secretary to Government, Public Works Department,
Fort Saint George.

Sir,

I have the honor to acknowledge
your docket dated 19th June 1867, upon a
letter from the Secretary to the Government
of India upon the subject of the Lawrence
Asylum, and Mr Chisholm's letter explain-
ing certain details in the design and con-
struction of the Asylum buildings:-
2. of the objections raised by Colonel
Crommelin on sanitary grounds, that which
has attracted prominent attention is the back to
back arrangement of the dormitories with
a corridor between each dormitory:-
3. There can be no doubt that, under ordi-
nary circumstances, this is not a desirable
arrangement and that, had abundant
space been available for both Male and
Female Asylums on the site selected, it
would have been better to have avoided
the placing a corridor between the dormi-
tories:-

Enclosures 2 b.

21 Plans

1 Letter from the Secy. to the
Govt. of India to the Secy. to
Govt. Madras 8/29 May
1867 No. 523. W.

1 Memo of Lt Col Crommelin
dtd March 1867

1 Memo of Mr Chisholm
2 Estimates.

At

4. At the same time, bearing in mind the moderate length of these corridors, the fact that they have ample means of ventilation at either end, that the dormitories themselves will be exceedingly well proportioned; well-ventilated rooms, I can see no reason why in such a climate as that of Cochin, there should be any accumulation of foul air or any danger to the health of the occupants of the dormitories.

5. As regards the position of the Lavatories and Night Prives, to which objection has been raised, the general block arrangement prevents their being placed at the end of the wards.

6. To the Lavatories, I conceive, no serious objection can be made. The privies are to be Jennings' patent water closets and will be separated from the dormitories by a well ventilated gallery. If there are double self closing doors to this gallery, I do not think that any evil will arise.

7. I entirely concur with Mr. Chisholm in thinking verandahs ill-suited for buildings on the Nilgerry Hills.

8. I think that Colonel Crommelin's remarks, paras 5 and 6, as regards increased floor space are just, and it will be an advantage to

13 27
to give additional surface space both in the dormitories and Schoolrooms.

9. With the alterations indicated above, I believe that the very handsome building designed by Mr. Chisholm will prove to be unobjectionable on sanitary grounds.

I have the honor to be,
Sir,

Your Most Obedient Servant

R. Ellis

Sanitary Commissioner for Madras.

No. 523 M
 Government of India
 Public Works Department
Military Works

To The Secretary to Government of Madras
 in the Public Works Department

Sir, 29th May 1867.

I am directed to acknowledge the receipt of your letter marginally noted, submitting for sanction designs with the estimates of preparation in amount, for the proposed Lawrence Asylum Buildings at Coimbatore, as specified in the margin, and in reply to communicate the following observations and orders therein.

Male Asylum	4,03,977
Female do	2,74,377
Church	95,005
Hospital	79,700
Works already executed	130,173
<u>Total Repts</u>	<u>9,83,234</u>

- While fully recognizing the merits of the designs submitted, His Excellency the Governor General in Council observes, that the expenditure to be incurred in carrying them into effect, exceeds the amount which His Excellency would consider himself justified in allowing for the object in view.
- In consideration however of the expense that has been already incurred on the work and of the fact of

Copy in a letter to B
 of 16th July 1867

Copy in a letter to B
 of 16th July 1867

The Secretary to Government P W &

Recd 25th June 1867

Dec. 5th 1867

Replyed to the objection made by
 the Hon. Secy to Govt. in relation
 to the designs of the Lawrence
 Asylum buildings at Coimbatore.

18594

20.1924.275 June 1867

of the working establishment having been formed on the site, His Excellency in Council is pleased to sanction the design and estimate amounting to Rs. 4,03,979-- for the Male Asylum, as also the expenditure on works already executed viz: Rs. 1,30,173/ (making a total of Rs. 5,34,152/) leaving it to the Government of Madras to judge 1st whether some saving might not be effected by dispensing with a portion of the ornamentation and adopting a more economical design for the stables and offices, of the Male Asylum and 2nd whether the proposed buildings for the Female Asylum and Church should not be altogether dispensed with, the girls being provided for, by moderate though efficient additions, to the building which forms the present male Asylum, and the Church by the appropriation of a room in each Asylum, in which the children might be conveniently assembled for prayers.

{Five lakhs thirty four
thousand one hundred
and fifty two Rupees

4. Annexed is a copy of a report by Colonel Cromwell in the Inspector General of Military Works upon the Asylum buildings as designed, in a sanitary point of view, the suggestions in which His Excellency in Council desires may be taken into careful consideration and disposed of by the Government of Madras, in communication with its sanitary officers. There is one point touched upon therein, which His Excellency has

has desired me to bring to prominent notice viz: the evils of mixed ventilation. His Excellency in Council considers that a series of dormitories ventilating into a common passage, is a most objectionable arrangement in any climate as tending to facilitate the spread of disease. This defect could easily be remedied in the present case without any outward change of the building, and I am to request that some means may be adopted accordingly, of isolating the exit of foul air, from each dormitory.

5. As regards the Hospital, I am to state that orders on the estimate, will be held over pending the receipt of the proposed plan for the building.

6. The sanction now accorded has been registered in this office as A. 21.11 of 1867/68. The designs and estimates are returned -

In Secret.
In Case.

I have the honor to be
Sir
Your most Obedient Servant
W. Dimes Col. R. A.
Secretary to the Govt. of India

46

Leaf
Print
Scales

1950 11 etc 1924
Proceedings of the Madras Government.
Under date the 27th June 1867.
Read the following:-

- From R. F. Chisholm Esq.
Es: Eng: Presidency - (N. O. 2310 March 1867 No 16)
- From the Secy to the Govt
of India P.W.D. - (N. O. 29 May 1867 No 523h)
- From the Sanitary Com:
missioner for Madras. (N. O. 25 June 1867 No 198)

These papers will be
communicated to Mr
Chisholm, with a view to his
re-modelling his designs
for the male branch of
the Lawrence Asylum
at Botacammid Estate
as far as possible, the
views of the Govt of India
and the Sanitary Comm:
improving where necessary the vegetation
schemes giving such in-
creased floor space as the
area of the site and the
arrangements of his
plan will admit. It
occurs to Govt that perhaps

Official notice to G. P. W. D. dated 22nd 1867

Referred, with Mr. Clerk
Urban, letter of the
23rd March last, to the
Sanitary Commission
for their observations
which may have
been -

From
the Secy to the
Govt of India
to the Secy P.W.D.
22/2/67

Approved: Mr. C. M. N.

20 May 1867
22 May 1867
21 June 1867

Secy to Govt

on the plans and site
matter for the new
building -

19 June 1867

22 May 1867

To the Sanitary Commission
with 1 letter - 1 memo -
3 plans and 2 plans

22 May 1867

22 May 1867

this may now be readily
effected by appropriating
for the accommodation
of some of the masters a
portion of the hospital
which is larger than ^{is} ~~the~~
^{divided} ~~several~~ under the present
altered circumstances.

2. Mr. Fisholun will be at liberty to proceed to Otacumund, if necessary, and will take the opportunity of preparing a design for adapting the buildings of "Stone-house" now occupied by the boys, ^{to the use of} for the accommodation of 400 girls —

To R F Chisholm Esq 16
Essex - with 21
plans & 3 Estimates.

2087 Du ✓

" Secretary Commr.

Edw. Dept.

6. Controller of Prison?
7. Asst. General

Dep't. to Mr. Chisholm 28/6/07

-Do to all others 2/9/67

5. Unaffiliated
 6. Unaffiliated
 7. Unaffiliated

Rep'd to the Com. by the Air. Genl.

Copy in a Letter to E. D. 16 July 1867

20/10/14 BII ✓

Pub. Works 1867 Depart^{re}

Pro: of Govt. for June

No. 1924

Pro: of the Admiralty Govt.

Of 27th June 1867

Further Pro: of 30th July 1867

Putting orders on
certain papers, relative to
the designs for the male
branch of Lawrence Wyllie
at Octacommund.

No. 592 @ 595