1. Number of subject 94
2. Date of receipt 24-8-
3. Index slip

M.R.O.]—82 400—23-11-50

MADRAS RECORD OFFICE.

Government of Madras.

Political (Secret) DEPARTMENT.

G.O. No. 2 Press Mis.

Dated 5 - 1 18 23

Not to be folded or roughly handled

No. 3. Read the following letter from A. J. ARBUTHNOT, Esq., Director of Public Instruction; to T. PYCROFT, Esq., Chief Secretary to Government, dated 19th November 1857, No. 1098.

SIR,

I have the honor to forward, for the consideration and orders of the Right Honorable the Governor in Council, the annexed copy of a letter, under date the 3rd Instant, from Lieutenant George Winscom, lately appointed Principal of the projected Civil Engineering College, submitting a scheme of the establishment which he considers will be required for the College and a Prospectus of the course of instruction to be carried out.

2. The cost of the establishment proposed by Lieutenant Winscom, amounts to Rupees 3,850 per mensem. It does not appear to me to be susceptible of any very material reduction. The salaries proposed are not larger than will be requisite to secure the services of efficient teachers in the several subjects to be included in the course of instruction, nor is the number of teachers greater than will be required when the College shall have been fairly organized. A few of these, such as the Assistant Mathematical Master, the 2nd Assistant Drawing Master and the Lecturers on Natural Philosophy and on Geology and Chemistry might possibly be dispensed with at the commencement. In the item of House rent, there might also, I think, be some reduction. I do not think it is necessary, in the case of the Mathematical Master, the Drawing and Surveying Master, the Assistant Drawing Master or in that of the Professor of Geology and Chemistry, while in the case of the Principal himself, I am somewhat doubtful whether the amount of house rent proposed is not unduly large. Lieutenant Winscom has stated, in a separate letter, a copy of which is annexed, his reasons for considering himself entitled to house rent at the rate of Rs. 150 per mensem. He explains that this allowance, if granted, will no more than place him on an equality, in respect of salary, with his cotemporaries in the Corps of Engineers, most of whom now hold the office of 1st Class District Engineer. The salary of the Principal should certainly be somewhat larger than those of his cotemporaries in the Provinces, in consideration of the additional expenses attendant on a residence in Madras. With this view, I would suggest that the Principal's salary should be fixed at Rupees 800 per mensem, which, I believe, is the rate assigned to the Superintending Engineers and that he should be permitted also to hold the office of Lecturer on Mechanical Engineering. The duty of lecturing on Constructive Engineering will, according to Lieutenant Winscom's scheme, be attached to the Principalship.

	Immediate monthly expenditure.	Eventual monthly expenditure.
	Rupees.	Rupees.
1 Principal (Staff Pay)	800	800
1 Mathematical Master	400	400
1 Assistant do.	"	100
1 Lecturer on Mechanical Engineering	250	250
1 Drawing, Surveying and Architectural Master.. ..	300	300
1 Assistant Drawing &c. Master	80	80
1 Assistant do. do.	"	40
1 Do. do. do.	"	100
1 Lecturer on Natural Philosophy	"	350
1 Professor of Geology and Chemistry	60	60
1 Officer in charge of Non-Commissioned Officers...	90	90
3 Moonshees	350	350
Scholarships		
College allowance to 30 Non-Commissioned Officers and Soldiers	300	300
General establishment	165	165
Rent of College Buildings	200	200
Total.....	2,995	3,585

3. With these remarks, I beg to recommend the scheme of establishment as proposed by Lieutenant Winscom, for the favorable consideration of Government, subject to the reductions I have suggested. The scheme, as modified, is shown in the margin. It involves an immediate expenditure of Rupees 2,995, and an eventual expenditure of Rupees 3,585 per mensem.

4. I also recommend that authority be granted to rent the Ameer Baugh for the College and that the opinion of the Honorable Company's Solicitor be taken as to the expediency of purchasing the lease of this building. Lieutenant Winscom has been informed by the Agent to the Agra Bank that when the lease for which the Bank holds it falls in, the building is likely to lapse to Government, and if this statement be correct, it would perhaps be economical to purchase the lease, which, I understand, may be had for 12,000 Rupees and which has between 12 and 13 years still to run, in preference to renting. This would admit of the erection of the

accommodation that will be required for the European Soldiers and Non-Commissioned Officers for whom lodging will have to be found.

5. In regard to the course of instruction set forth in para. 9, I have merely to observe that, so far as I am competent to form an opinion, it appears to be well adapted for the object in view.

6. Lieutenant Winscom, it will be observed, does not propose to divide the College into departments or classes, with reference to the class of certificate for which the several Students may seek to qualify themselves. His plan, as I understand it, is that every branch of instruction shall be open to every Student in the College, irrespectively of the particular branch of the Public Works Department or of Engineering work generally for which he may be seeking to qualify himself. A different arrangement, His Lordship in Council is aware, has obtained at Roorkee. That Institution is divided into three Departments, in each of which the course of instruction is specially adapted to the branch of the Public Works Department for which the Students are qualifying themselves.

7. I am inclined to think that a similar arrangement will practically come into operation in the Madras College, or that, if not, it will have to be introduced eventually, but until some experience shall have been gained of the working of Lieutenant Winscom's scheme, I am not prepared to recommend any alteration of it in this respect.

8. I have entered in red ink in the margin (*Italics*) of the Prospectus submitted by Lieutenant Winscom a few alterations, which appear to be required in that document.

9. I beg that the Civil Auditor may be instructed to pass the salaries of the Writer and Peon whom Lieutenant Winscom has entertained from the 30th Ultimo,

Writer ..... Rs. 40
Peon ..... „ 6

and that the sum of Rupees 5,000 be placed at his disposal for the purpose of fitting up the Model room, Museum, Library, &c.,

Letter from Lieutenant G. WINSCOM, Principal of the Civil Engineering College; to A. J. ARBUTHNOT, Esq., Director of Public Instruction, Madras, dated 3rd November 1857, No. 1.

SIR,

I have the honor to forward for the approval and sanction of Government a Prospectus of the Civil Engineering College at Madras.

2. Before drawing it up I carefully perused the whole of the correspondence which has taken place on the subject as well as the account of the Roorkee College, and I trust that the scheme, which I now submit, will be found to be such a modification of that Institution as is well adapted to meet the wants of this Presidency at the present time. As the College becomes developed, changes and amendments will doubtless be needed and may then be made.

3. The establishment and monthly expenditure which I conceive would be necessary is as follows: and as it is less than that allowed for Roorkee or that sanctioned for this Presidency by the Government of India in Colonel Baker's letter No. 94 of the 12th January 1856, I trust the Governor in Council may see fit to approve of it and order me to make the necessary arrangements for carrying it at once into execution, although time must elapse before suitable persons are found to fill the various offices; for if so directed I could make the needful arrangements with much greater celerity and freedom, whilst I could study economy by not entertaining persons or incurring expense till the fit time for so doing had arrived.

Establishment.

	Rs.
1 Principal (Staff pay)	
*House rent for do.	700
1 Mathematical Master	150
*House rent for do.	400
1 Assistant Mathematical Master	50
1 Lecturer on Mechanical Engineering	100
1 Drawing, Surveying and Architectural Master	250
*House rent for do.	300
	40

	Rs.
1 Assistant Drawing, &c., Master	80
1 do. do.	40
1 Lecturer on Natural Philosophy	100
1 Professor of Geology and Chemistry	350
*House rent for do	40
*1 Officer in charge of Non-Commissioned Officers, &c., ...	60
3 Moonshees	90
Scholarships	350
College allowance to 30 Non-Commissioned Officers and Soldiers ...	300
	3,400

General Establishment.

	Rs.	
2 Peons.	12	
1 Bearer.	7	
12 Lascars	72	
2 Porters	10	
1 Sweeper	4	
2 Writers	60	
		165
* Rent of College buildings		200
* Rent of building for Barracks and Establishment for ditto		85
Total per mensem Company's Rupees		3,850
or per annum Company's Rupees		46,200

4. Deducting the items marked thus*, the monthly expenditure would be Rupees 3,115 or 173 Rupees less than that allowed for the Roorkee College, viz. Rupees 3,398 (including the College allowance to Non-Commissioned Officers and Soldiers) which Government has directed shall be the model to which the present College is to be generally assimilated. At Roorkee the items marked* are not included, as amongst the extensive buildings erected by Government for that institution are houses for the Principal, the Head Master, the European Non-Commissioned Officers &c. This expenditure, it will also be observed, is within the limits by 1,000 Rupees per mensem of that sanctioned by the Government of India in Colonel Baker's letter No. 94 of the 12th January 1856, viz. 4,850 Rupees per month or 58,200 Rupees per annum. (See Mr. Arbuthnot's letter No. 218 of the 20th July 1855), so that an ample margin is left for an extension of the scheme in the Mofussil.

5. I would here beg to bring to the notice of Government that the building and grounds designated "Ameer Bagh" on the Mount road are for rent, or the lease which has between 12 and 13 years yet to run, is for sale. It is at present mortgaged to the Agra Bank Company. The rent would be about 180 or 200 Rupees per mensem (depending on the time for which it may be taken). The building appears suited for the College; at any rate for the present, the accommodation being sufficient for our primary purposes, and as it is very desirable at once to secure a building, I beg to recommend that it be rented, if the Agent of the Bank, who at present occupies it, will vacate by the 15th December next.

3 Plans forwarded herewith.

6. I am not at present prepared to recommend any site in particular for the Barracks of the Non-Commissioned Officers and Soldiers studying at the College, but I doubt not that, before long, one will be found adapted for the purpose.

7. I have included in the estimate of expenditure Rupees 60 per mensem for the Officer in charge of these men; this item is not in the Roorkee Schedule, because the Barracks form part of the College buildings and they are consequently under the immediate supervision of the College authorities. At Madras, for the present, this cannot be the case, and I therefore have thought it advisable to recommend that one particular person be selected to exercise that vigilant Military control, which my experience as Commandant of the Sappers and Miners makes me know is essentially necessary.

8. I would hope, if the Government approve of my scheme, to begin to work the College at the commencement of next year. For the first few months, we must expect the usual irregularities attendant on new undertakings to occur, but I would trust that at the commencement, in August, of the Session of 1858-59, matters will be so arranged as to make the institution effective for the purposes required.

9. I propose that the division and method of instruction shall be as follows:

Mathematics

To be taught by the Mathematical Master and his Assistant to each pupil individually in the study rooms, each student working independently of the others.

Drawing, Surveying, Elementary Astronomy and Architecture

To be taught as above, but the students proceeding in parties into the field for surveying with the masters till they can work by themselves.

Constructive and Mechanical Engineering

To be taught by lectures delivered by the Principal and an Engineer Officer appointed for the purpose, explanation of points not properly understood being given to Engineers after each Lecture, certain hours to be set apart for reading on the subjects under consideration to be termed "Engineering study hours" students will also visit all Engineering works in Madras and its vicinity and questions to ensure their scientific study of the same will be given.

Natural Philosophy

To be taught by some qualified Engineer Officer by means of Lectures as above, study hours for this subject will likewise be allotted.

Geology and In~~or~~organic Chemistry

To be taught by Lectures and by Laboratory practice, the Professor rendering the pupils, who will work separately, all needful assistance; study hours for reading on Geology will be assigned. The Lectures on Geology and Mineralogy will be illustrated by specimens and plans.

10. I have carefully considered the tests of the Civil Engineering College, Fort William, forwarded to me with Extract Minutes of Consultation No. 1845, of the 29th September last, and the Appendices to the Prospectus will indicate what I conceive to be those best suited to the requirements of this Presidency. The plan of education, as I propose it to be, is, it will be observed, different to that of the Calcutta and Roorkee Colleges. The Madras College, whilst it only gives Certificates of theoretical knowledge, opens a wide door for competition to *all* candidates and affords a more general plan of instruction than that in the sister Colleges, whilst for the Engineer Department the extra examination of general education will exclude all excepting men who have received a liberal education as Gentlemen.

11. I am unable myself to perceive the necessity for further examinations than those laid down as the great desideratum for men in the Engineer Department are, 1st, knowledge of Engineering science and intellectual vigor; 2nd, zeal, energy and a strong constitution. The College is calculated to develope the first, and the Certificates only attest on these points. The Engineers, under whom the Candidates may subsequently serve, will be the best judges of the second and their intellectual and physical qualifications combined ought to determine their position in life. I therefore see no necessity for different Departments in the College, but prefer that each man endeavour to obtain the highest Certificate he can.

12. For the Model room, Economic, Geological Museum and Library, I beg to solicit a grant of 5,000 Rupees from Government to commence with, and I would submit that some annual allowance be conceded for purchasing such Books, Specimens, Models, &c. as may appear most advisable to the Principal. To adjust this allowance he could send in his Contingent Bill at the close of each Session.

13. The text Books I have proposed are, it will be observed, chiefly Weale's Rudimentary Treatises. Many of these little volumes are very complete in themselves and their reasonable

price puts it within the reach of all to purchase them. For those who wish to learn further on the various subjects on which instruction is given, the Library will afford ample opportunity of studying more elaborate and expensive works. My endeavour in framing the Prospectus of the College, has been to render it a really Utilitarian Institution, and in so doing, whilst it embraces tuition on all subjects that are needed to give a degree of Master of Engineering in the Madras University, I have borne in mind the inferior education and pecuniary difficulties under the disadvantages of which the majority of the Students may probably labor. In after years the College may be put generally on a more erudite footing.

P. S.—To meet my present requirements I have entertained, since the 30th October, a Writer on 40 Rupees and a Peon on 6 Rupees per mensem, and I shall feel obliged by your obtaining for this the sanction of Government.

Letter from Lieutenant G. V. WINSCOM, Principal of the Civil Engineering College; to A. J. ARBUTHNOT, Esq., Director of Public Instruction, dated 14th November 1857, No. 4.

SIR,

With reference to the item of Rupees 150 included in the estimate of expenditure to be incurred in the Civil Engineering College, as shown in my letter No. 1 to your address, on account of house rent for the Principal, I have the honor to state that it is included for the following reasons.

1st. The Principal of the Roorkee College has a suitable residence allotted to him, and till the residence was built, he had house rent allowed him.

2nd. The Principal at Calcutta, in every probability, has house rent allowed to him, as *all* Staff Officers at that Presidency are so favored.

3rd. The appointment being a new one, the allowance should be granted on its own merits, now or never.

4th. All the cotemporaries of the Principal (for I presume his position in the Department of Public Works would always entitle him to be a District Engineer of the 1st Class) are allowed at the rate of Rupees 150 per mensem for extra expenses incurred in travelling, &c., and it is but common justice that the Principal of the College should likewise be allowed compensation for the extra expenses of house rent and living in Madras, which, at the lowest estimate, must exceed that sum; indeed, if otherwise, no Officer could readily be supposed to accept an appointment, involving so much extra expenditure, without compensating advantages.

PROSPECTUS OF THE CIVIL ENGINEERING COLLEGE AT MADRAS.

The College is designed to prepare men for carrying out skilfully and effectively the various kinds of Engineering works needed in the Madras Presidency, whether they be for Government or for private companies and individuals.

2. The instruction given will be adapted to meet the requirements of all who may matriculate, as it will reach to the standard laid down for the degree of "Master of Civil Engineering" in the University of Madras.

3. As, however, it is equally intended to raise efficient Sub Overseers, Overseers, Supervisors, &c., the only preliminary knowledge which will be absolutely insisted upon at entrance will be that of reading and writing with facility in English or in a Native language and of simple Arithmetic a good character, and a Surgeon's Certificate of unimpaired bodily health are indispensable.

I would omit this. It will of course be required by the Chief Engineer, but it is not I think within the province of the College, which is open to the public at large.—A. J. B.

4. The following are the subjects on which instructions will be given.

1. Mathematics.
2. Drawing and Surveying, including Elementary Astronomy.
3. Constructive Engineering.
4. Mechanical Engineering.
5. Architecture.
6. Natural Philosophy.
7. Inorganic Chemistry.
8. Geology and Mineralogy.

5. At the end of each Session an examination of all the students will be held, and Certificates will be issued according to their capabilities, as evinced by the scale of tests appended. These Certificates will enumerate the studies they have pursued, and will state the student's eligibility for employment in the "Engineer", "Upper Subordinate" or "Lower Subordinate" Departments of the Public Works; they will also testify as to whether he is most fitted for Civil or Mechanical Engineering employ.

6. The method of instruction will be by Masters, by Lectures, and by visits to, and study of works in the neighbourhood of Madras. A Model room, Library, Economic Museum and Laboratory will be added to the College as soon as possible. Each pupil will be examined as to his knowledge on entrance, and he will be permitted to commence from that portion of the course of study of each subject up to which he has shewn himself thoroughly competent to answer any question.

7. Course of Study.

1. *Mathematics.*

1. Arithmetic, including Vulgar and Decimal Fractions, Extraction of the Square and Cubic Root, Book-keeping as practised in the D. P. W., Simple and Compound Interest, Discount, Annuities, &c.
2. Mensuration.
3. Geometry.
4. Nature and use of Logarithms.
5. Plane Trigonometry.
6. Algebra to Quadratic Equations and Geometrical Progression.
7. Statics, Dynamics and Hydrostatics.
8. Conic Sections.
9. Analytical Geometry and Trigonometry.
10. Spherical Trigonometry.
11. Differential and Integral Calculus.

The text book for the Mathematical course will be "Weale's" Rudimentary Treatises.

2. *Drawing and Surveying.*

1. Drawing plans.
2. Prismatic Compass Survey.
3. Levelling.
4. Preparation of Estimates.
5. Surveying with Theodolite and other instruments.
6. Measurement of heights by Barometer.
7. Elementary Astronomy.

The text books for the surveying course will be "Weale's" Treatises and "Smith and Thuiller's" surveying.

3. *Constructive Engineering.*

1. Materials, as Bricks, Limes, Timber, &c.
2. Blasting Rock.

3. Foundations, Cofferdams, &c.
4. General construction in Masonry, Carpentry, &c.
5. Strength and stress of materials.
6. Stability of abutments, piers, retaining walls, &c
7. Centrings.
8. Equilibrium of arches and suspension bridges.
9. Bridges of wood, iron and Masonry.
10. Canals, Annicuts, Tanks, their construction, &c.
11. Irrigation in general.
12. Marine and river Engineering, including Harbours, Docks, Piers, Breakwaters, Canal and river boats, and the means of propulsion, &c. &c.
13. Railway Engineering, their construction with a view to economic working.
14. Supply of water to towns, &c.
15. Power of water.

The text books for the constructive Engineering course are "Weale's" Treatises, Mahon's Civil Engineering, Foord's notes on road making, &c.

4. *Mechanical Engineering.*

1. Mechanical powers.
2. Movements and combination of Machinery.
3. Machines employed in transporting and lifting materials.
4. do. employed in Engineering works.
5. Steam Engine, Stationary and Locomotive, and for river boats.
6. Teeth of Wheels, Racks and Pinions.
7. Expedients for changing motion.
8. Friction, Visvina, Labouring and Dynamical force, &c.,
9. Centripetel and Centrifugal forces.

The text books for Mechanical Engineering are "Weale's" Treatises.

5. *Architecture.*

1. The classic orders and their parts, their application, principles of composition, &c.
2. Styles, peculiarities of different styles, &c.
3. Architectural Drawing.

The text books for the Architectural course will be "Weale's" Treatises.

6. *Natural Philosophy.*

1. Steam, its power, properties and various applications,
2. Fuel of various kinds, estimation of cloric power.
3. Electricity.
4. Meteoralogy.
5. Physical Geography, especially of India.
5. Botany, vegetable products, Timber. Fibres &c.

The text books for the course of Natural Philosophy are "Weale's," Treatises or Golding Bird's Hand Book of Natural Philosophy.

7. *Inorganic Chemistry.*

1. Properties of Inorganic substances.
2. Analysis of ditto.

The text books are Fowne's Hand Book of Chemistry and Bouraan's practical Chemistry.

8. *Geology and Mineralogy.*

1. Elements of Geology.
2. Superpcsition of Rocks.

3. Component parts of Rocks.
4. Palaontology.
5. Crystellography and properties of Minerals.
6. Blowpipe Analysis.

The text books are Austeed's Geology and Daria's Mineralogy.

8. The Certificates will be of 4 kinds.

A 1st. Class Certificate will denote theoretical fitness for the Engineer Department of the Public Works and Certificates for " Honors," as denoted in Appendix 2, will be issued to those students who exhibit superior degrees of knowledge.

A 2nd. Class Certificate will denote ditto. for the grades of Sub Engineers of all classes in the " Upper Subordinate" Department of Public Works.

A 3rd. Class Certificate will denote ditto. for the grades of Supervisors and full and Assistant Overseers in the " Upper Subordinate" Department of Public Works.

A 4th. Class Certificate will denote ditto. for the different grades of Sub Overseers in the " Lower Subordinate" Department of Public Works.

9. To obtain these Certificates the Student must pass the Examination as denoted in the Examination Test No. 2 appended. He must also have some colloquial knowledge of one Native Language and, for a 1st and 2nd Class Certificate, be able to read an Urzee with facility. He must moreover, (*if a candidate for a 1st or 2nd Class Certificate and*) if not a Commissioned Officer of the Army, pass an examination as to his general education, as laid down in Appendix No. 1.

10. The College is open to all who may pass the examination alluded to in para. 3 and 6 but any student whose moral conduct or progress may prove unsatisfactory, will be liable to summary dismissal at the option of the Principal.

11. There will be 15 Stipendary Students admitted to the College per annum; these will be selected from the most promising scholars in the District Engineering or other Government schools, and whilst at the College, will receive Rupees 6 (six) per mensem for one year, and have travelling expenses according to distance to and from Madras allowed them.

12. All Students will be examined at the end of each Session and ten scholarships will be given at the end of the 1st year and four at the end of the 2nd, viz.

10 Scholarships of ten Rupees each for 1st year Students.

4 Scholarships of forty Rupees each for 2nd year Students.

Each scholarship to last for one year, during which time the Student will be expected to prosecute his studies at the College.

Every Student not being a Non-Commissioned Officer or Soldier and not holding a Scholarship, will be required to pay a monthly fee of Rupees 3.—A. J. B.

13. The text books will be supplied to all Students on payment by monthly instalments, and the following fees will be levied on all students, obtaining Certificates from the College, which will be appropriated to the enlargement of the Library and Model Room, viz.

	Rs.
1st Class Certificate.....	100
2nd Class ditto.....	50
3rd Class ditto.....	20
4th Class ditto.....	5

These fees will not be demanded from men in the Service.

14. The following are the rules for the admission of Commissioned European Officers and Soldiers.

Admission of Officers.

1. European Commissioned Officers of the Army, under the rank of a Field Officer, will be permitted to study at the Civil Engineering College at Madras on the following terms.

2. The Candidate for admission must be qualified by acquaintance with his Military duties and by having passed the examination in the Vernacular languages to have charge of a Company.

3. His application is to be addressed through his Commanding Officer to the Principal of the College, who, after satisfying himself that the Candidate is likely to profit by the course of study, will forward the application for the approval of His Excellency the Commander in Chief.

4. Admissions to the College will take place on the 1st August of each year. All applications should be made so as to permit of the Candidates joining not later than the 1st August, after leave formally granted in General Orders.

5. The duration of the first permission to study at the College will be to the 15th April of the next year, but if the progress of the Student is satisfactory and his conduct otherwise exemplary, the Principal will be at liberty to forward his application to HeadQuarters for permission to remain another year at the College. No Student will be permitted to remain longer than the April year after his first admission, unless on special sanction granted under peculiar circumstances.

6. The Principal of the College may at any time recommend to His Excellency the Commander in Chief that an officer be remanded to his Regiment.

7. Officers studying at Madras under these rules will be required to pay 10 Rupees per mensem to the College Library Fund.

8. Officers who obtained permission to study at the Madras Engineering College will be considered " absent on duty" and will be so reported in the Regimental Returns.

Admission of Non-Commissioned Officers.

European Non-Commissioned Officers and Soldiers are required, previous to admission, to prove by examination conducted in communication with the Principal of the College, their proficiency in reading, writing and Arithmetic as far as Vulgar Fractions and simple plan drawing; they must be well recommended by their Commanding Officer and by the Engineer of the District to which they may be stationed, and furnish a Certificate from a Medical Officer of unimpaired constitution, also a Certificate that they have not any former time been dismissed from Staff employment. Passed Candidates will be nominated in May of each year and will join the College on the 1st August following.

They will be considered as doing duty at the College and will remain on the strength of their respective Regiments. Whilst at the College they will wear the undress or fatigue uniform of their rank and Regiment with forage cap and cap-cover, and will be under the command of the Principal and an Officer studying at the College, who will be specially nominated by Government for the purpose.

They should be furnished, on joining the College, with a record of service and Certificates of their last pay, rations or batta, clothing and bedding received by them with their Regiments; also of the nature of the carriage furnished to them at the Government expense on their leaving their Regiments. They will receive whilst at the College the same pay as with their Regiments, including good conduct pay when entitled thereto, together with dry batta or ration money and

Rupees 10 as College allowance, which is intended to cover the cost of books and other extra expenses (not including quarters). When not furnished with carriage, either for tent or baggage, to enable them to join, they will receive travelling allowance at the rate of one anna per mile, and if furnished with carriage for tents only, but not for baggage, the allowance will be half an anna per mile. In either case, double allowance will be granted to married men. If they make no sufficient progress and are not steady and industrious, they will be remanded to their Regiments. Their time of studying at the College is limited to 2 years, excepting under peculiar circumstances.

The number of Non-Commissioned Officers and Soldiers is limited to 30, of whom 3 may be married men and whose wives must be furnished with Certificates of good character.

Applications to the Principal for the examination of Candidates should be accompanied by a Descriptive Long Roll and Extracts of Court's Martial and Defaulter's Book from the date of the Candidates entrance into the service.

APPENDIX No. 1.

Detail of Examination Tests.

General Education.

Subjects.	No. of Questions.	Value of each paper.	Total value of subjects.
English Dictation, comprising ... ... Given passage to be read out by Examiner.	.....	.....	*75 or 250
Handwriting	.....	*25 or 75	
Spelling	.....	130 or 90	
Punctuation	.....	20 or 60	
†Latin..	.....	.....	250
Translate passage from Virgil not less than 10 lines or similar portion from Cæsar	2	175	
Questions on Parsing, Grammar and Syntax	5	75	
French or Vernaculars (Teloogoo, Tamil or Canarese)	.....	.....	250 or 75
Telemachus, Charles 12th or Peter the Great, translate passages of similar extent to the above	2	175	
Questions	5	75	
History, comprising	.....	.....	275
Greece and Rome	3	75	
England	4	100	
British India,.	4	100	
Geography	7	150	
			150
Total.....	.....	.....	1,000

*Interchangeable according as Candidate be, European or Native.

I would say rather—Native Students, who may not be prepared to take up Latin, will be required to paraphrase a passage from a standard prose author and another from a standard poetical author and to answer questions on Grammar.

† Instead of Latin for Natives, English composition will be given as follows:

Translate a portion of a Native work and put it into good English.....	75
Compose English Poetry on a given subject.....	175
	250

APPENDIX No. 2.

Detail of Examination Tests.

	Subjects.	No of Questions.	Value of each paper.	Total value of subjects.
1	Mathematics, comprising	.....	.....	600
	Arithmetic	20	75	
	Mensuration	14	125	
	Geometry	14	125	
	Plane Trigonometry with nature and use of Logarithms	10	150	
	Algebra	16	125	
2	Drawing and Surveying, comprising	.....	.....	400
	1 Theodolite Circuit, interior detail by compass or plane table, plan to prescribed scale, Field Book in original, plot by angles and by Traverses	1	75	
	2 Plot from given Field Book..	1	25	
	3 Trignometrical Diagram with data for calculation..	1	50	
	4 Level Circuit, Plan section, Original Field Book	1	25	
	5 Prismatic compass Circuit, Plan and Orginal Field Book	1	50	
	6 Questions, including Elements of Practical Astronomy	7	75	
	7 Copy of Civil Engineering, Drawing on given scale	1	50	
	8 Copy of reduced or enlarged given Topographical Drawing	1	50	
3	Constructive Engineering	.....	.....	500
	Questions on Engineering of various kinds	30	300	
	Design for a dwelling or Barrack, &c., with estimate in full... ...	2	75	
	Design for a bridge or Harbour, Pier, Light House or other Engineering work with estimate in full	2	125	
4	Mechanical Engineering	.....	.....	500
	Questions on various points	20	300	
	To invent a machine for a given specified purpose	1	200	
5	Achitecture	.....	.....	200
	Questions on various points..	4	75	
	Design a building in specified style and for a nominated purpose	1	125	
6	Natural Philosopy..	.....	.....	300
	Questions on various points chiefly in connection with steam and fuel	10	300	
7	Inorganic Chemistry	.....	.....	200
	To make a simple qualtitative Analysis...	1	200	
8	Geology and Mineralogy	.....	.....	300
	Questions on various points	10	150	
	A Blowpipe Analysis	1	150	
	Total.....	.....	.....	3,000

The necessary number of marks to obtain the desired Certificates are as follows:—

For Honors..... { Highly distinguished. $\frac{8}{10}$ of the marks on each subject. / Great credit. $\frac{7}{10}$ of do. do.

1st Class Certificates.... $\frac{5}{10}$ of the marks on each subject.

2nd Class do..... $\frac{3}{8}$ of ditto for the 1st six subjects.

3rd Class do..... $\frac{1}{4}$ of the ditto for the 1st three ditto, Civil and Mechanical Engineering being interchangeable at option.

4th Class do..... $\frac{1}{10}$ of the marks for the 1st three subjects, Civil and Mechanical Engineering as above.

N. B.—If a Candidate be not an Officer of the Army, before the Certificates for Honors or 1st Class are granted, the examination of his general education as laid down in Appendix

No. 1 must be passed, and both for Honors and for 1st and 2nd Class Certificates, he must shew that he has the same knowledge of a Vernacular language that is required of Officers of the Army before they obtain charge of a Company. For the 3rd and 4th Class Certificates likewise the Candidates must shew that they have some colloquial knowledge and can read ordinary accounts.

(Signed) G. WINSCOM, Lieut.
Principal of the Civil Engineering College.

No. 4. ORDER THEREON, No. 2; dated 5th January 1858.

Resolved that the sanction of the Government of India be solicited to the Establishment for the proposed Civil Engineering College recommended by Mr. Arbuthnot, in para. 3; and that, pending the receipt of a reply, the Honorable Company's Solicitor be requested to state his opinion on the expediency of purchasing the lease of the building known as the "Ameer Bagh," as suggested by Mr. Arbuthnot, in para. 4, of which a copy will be furnished to Mr. Boyson.

2. Sanction is granted for the payment of the salaries of the Writer* and Peon entertained by Lieutenant Winscom from the 30th October last, orders on the request made in the same paragraph that Rupees 5,000 may be placed at Lieutenant Winscom's disposal for the expenses attending the fitting up of the model room and Library, will be passed on a reply being received from the Government of India to the application now about to be made for the Establishment.

	Rs.
* Writer	40
Peon	6

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

No. 5. Ordered in consequence that the following letter be despatched.

From H. FORBES, Esq., Acting Secretary to the Government of Fort Saint George; to Captain H. YULE, Officiating Secretary to the Government of India, D. P. W., dated 5th January 1858, No. 3.

SIR,

On the 15th August 1855, this Government submitted, with their approval, certain arrangements proposed by the Director of Public Instruction, for the establishment of a Civil Engineering College at Madras, for the training and instruction of persons seeking entrance to the Public Works Department and desirous of qualifying themselves for general professional employment. The scale of establishment, involving an expenditure of Rupees 4,850 per mensem, and the classification of Departments in the College, proposed by the Director, were generally approved by the Government of India, as intimated in Colonel Baker's reply of the 12th January 1856, but an opinion was at the same time expressed, that such a training school as Major Maitland's should be incorporated with the proposed College, and it was stated that the Government of India, would be prepared finally to approve a scheme, embracing the features sketched in Colonel Baker's letter. The Director of Public Instruction was accordingly requested to submit his opinion on the arrangements which should be made, in the scheme of the proposed College, to give effect to the wishes of the Government of India.

2 Some correspondence ensued between the Director of Public Instruction and Major Maitland, founded on the very different interpretations which they had adopted of the letter from the Government of India, of the 12th January, in respect to the position to be assigned to Major Maitland in the new College. The question was referred to the Government* of India, and with a subsequent† communication was forwarded a report from Mr. Arbuthnot, expressing his views regarding Major Maitland's school, with reference to the observations contained in Colonel Baker's letter of the 12th January 1856. The question as to the position to be occupied by Major Maitland in the proposed College, was definitively replied to in a letter from the Government of India, of the 8th August following, in which were also communicated some observations

* 2nd June 1856, No. 643.
† 31st July 1856, No. 888.

on the mode of dealing with that Officer's school in connection with the new College; and these observations it was intimated, were to be considered as in supersession, as well as in explanation, of that part of the letter of 12th January, which referred to this branch of the subject. The Director of Public Instruction was accordingly requested to state his opinion as to the manner in which he would propose to carry out the views of the Government of India, in respect to Major Maitland's school, as stated in the 5th and following paras. of the letter of the 8th August 1856.

3 Mr. Arbuthnot's reply to this requisition, dated 6th April 1857, was taken into consideration in Extract from the Minutes of Consultation of the 23rd June following, in connexion with the views of the Chief Engineer and other Officers, who were appointed a Committee to report on the instruction which should be afforded for the purpose of providing a supply of Civil Engineers and Artificers, sufficient for the requirements of this Presidency. A printed copy of Mr. Arbuthnot's* letter, and of the Extract from the Minutes of Consultation referred to, have already been laid before the Government of India, who will have observed that, after a careful consideration† of the subject, this Government have considered it desirable that an Engineering College, on the plan of that at Roorkee, should be at once founded at Madras, and that its entire organization should be entrusted to a Principal, who should undertake the supervision of the present Survey school as a commencement. It will further have been seen that this Government have also deemed it advisable that separate provision should be made for the instruction of Artificers, by means of schools to be attached to the great workshops; and that, under these arrangements, it has been resolved that the school, under Major Maitland's Supervision, should be continued on its present footing until further orders.

* Public Works Cons. 23rd June 1857, Nos. 90 to 93.
† Vide Extract Minutes Consultation 23rd June 1857, paras. 19, and 22, 23.

4. Having thus briefly recapitulated the substance of the correspondence that has taken place on the subject of the proposed College, I have now the honor, by desire of the Right Honorable the Governor in Council, to transmit the accompanying communication from Mr. Arbuthnot, enclosing one from Lieutenant Winscom, lately appointed Principal of the Civil Engineering College, submitting a scale of the establishment which he considers will be required for the College, and a Prospectus of the course of instruction proposed to be imparted in it.

5. The establishment &c., proposed by Lieutenant Winscom, would involve an expenditure of Rupees 3,850 per mensem, as shown below.

	Rs.
1 Principal (Staff pay)	700
House rent for do	150
1 Mathematical Master	400
House rent for do	50
1 Assistant Mathematical Master	100
1 Lecturer on Mechanical Engineering	250
1 Drawing, Surveying and Architectural Master	300
House rent for do	40
1 Assistant drawing &c., Master	80
1 do do	40
1 Lecturer on Natural Philosophy	100
1 Professor of Geology and Chemistry	350
House rent for do	40
1 Officer in charge of the Non-Commissioned Officers and Soldiers	60
3 Moonshees	90
Scholarships	350
College allowance to 30 Non-Commissioned Officers and Soldiers	300
General establishment	165
Rent of College Buildings	200
Do. of Barracks for Non-Commissioned Officers &c.	85
Total	3,850

6. Mr. Arbuthnot considers the cost of the establishment recommended by Lieutenant Winscom to be moderate, and the number of teachers which it is proposed to entertain not greater than will be required when the College shall have been fairly organized; but he is of opinion that the services of the Officers named in the margin, may be dispensed with for the present. He also considers the amount of house rent proposed for the Principal to be large, but adverting to what is urged by Lieutenant Winscom in his letter of the 14th November last, he proposes that his salary should be fixed at 800 Rupees per mensem, and that he should be allowed to hold, in conjunction with the Office of Principal of the College, that of Lecturer on Mechanical Engineering. Mr. Arbuthnot does not consider an allowance for house rent to be necessary in the case of the other Officers, and he has also omitted the expenditure proposed to be incurred in renting buildings for the accommodation of Non-Commissioned Officers and Soldiers, for the reason which he assigns in para. 4 of his letter. Deducting these items, the scale of establishment for the College, as modified by Mr. Arbuthnot, involves an expenditure of Rupees 3,585 per mensem, of which however only Rupees 2,995 will form an immediate charge. The Government of Madras approve of this scale with the exception of the omission from it of the sum proposed by Lieutenant Winscom for lodging money for the Soldiers studying at the College, it is not certain that the building proposed by Mr. Arbuthnot can be procured, and even if it be, buildings must be erected for the Soldiers and the lodging allowance may be considered to be interest of the Capital that will be invested, the item has therefore been added to the scale proposed by Mr. Arbuthnot.

	Rs.
Assistant Mathematical Master...	100
2nd Assistant Drawing Master...	40
Lecturer on Natural Philosophy...	100
Professor of Geology and Chemistry	350

	Immediate monthly expenditure.	Eventual monthly expenditure.
	Rupees.	Rupees.
1 Principal (Staff pay)...	800	800
1 Mathematical Master...	400	400
1 Assistant do	,,	100
1 Lecturer on Mechanical Engineering...	250	250
1 Drawing, Surveying and Architectural Master...	300	300
1 Assistant drawing Master...	80	80
1 do do	,,	40
1 Lecturer on Natural Philosophy...	,,	100
1 Professor of Geology and Chemistry...	,,	350
1 Officer in charge of Non-Commissioned Officers &c...	60	60
3 Moonshees...	90	90
Scholarships...	350	350
College allowance to 30 Non-Commissioned Officers & Soldiers..	300	300
General Establishment...	165	165
Rent of College Buildings...	200	200
Lodging allowance...	85	85
Total.....	3,080	3,670

7. The Right Honorable the Governor in Council has no objection to offer to the establishment proposed for the College, as modified by Mr. Arbuthnot; and as it falls short of the scale originally submitted to the Government of India, and generally approved by them in their letter of the 12th January 1856, I am desired to recommend that it may be sanctioned, at a total eventual cost of Rupees 3,670 per mensem, of which an expenditure of only Rupees 3,080 will be incurred at present, as opportunities of obtaining qualified teachers may offer, and the necessities of the institution may become apparent.

8. It will be observed that Lieutenant Winscom does not propose to divide the College into Departments or Classes, as at Roorkee, with reference to the class of certificates for which the several students may seek to qualify themselves. His plan apparently, as understood by Mr. Arbuthnot, is "that every branch of instruction shall be open to every student in the College, "irrespectively of the particular branch of the Public Works Department or of Engineering

"work generally for which he may be seeking to qualify himself." Mr. Arbuthnot thinks however that an arrangement similar to that obtaining at Roorkee, will eventually come into operation in the Madras College; but he adds that, until some experience has been gained of the working of Lieutenant Winscom's scheme, he is not prepared to recommend any alteration of it in this respect. In this determination, I am desired to state, the Governor in Council concurs.

Prospectus of the Civil Engineering College at Madras.

The College is designated to provide and prepare men for carrying out skilfully and effectively the various kinds of Engineering works needed in the Madras Presidency, whether they be for Government or for private Companies and Individuals.

2. The instruction given will be adapted to meet the requirements of all who may matriculate, as it will reach to the standard laid down for the Degree of "Master of Civil Engineering" in the University of Madras.

3. As, however, it

is equally intended to
raise efficient Sub
Overseers Overseers,
Supervisors &c., the
only preliminary Know=
=ledge which will be
absolutely insisted upon
at entrance will be
that of reading and
writing with facility
in English or in a
Latine Language and
of simple Arithmetic.
A good character
and a Surgeon's Cer=
=tificate of unimpaired
bodily health are
indispensable.

4. The following
are the subjects on
which instruction
will be given.
1. Mathematics
2. Drawing and
Surveying, including

Elementary Astronomy.
3. Constructive Engineering
4. Mechanical Engineering
5. Architecture
6. Natural Philosophy
7. Inorganic Chemistry
8. Geology and Mineralogy

5. At the end of
each Session an Exami=
=nation of all the
Students will be held,
and Certificates will
be issued according
to their capabilities,
as ascertained by the
Scale of tests appended.
These Certificates will
Enumerate the Studies
they have pursued,
and will state the
Student's eligibility
for employment for
Employment in the
"Engineer", "Upper Subor=
=dinate" or "Lower
Subb

Subordinate Departments of the Public Works; they will also testify as to whether he is most fitted for Civil or Mechanical Engineering employ.-

6 The method of instruction will be by Masters, by Lectures, and by visits to, and study of, works in the neighbourhood of Madras.- A Model Room, Library, Economic Museum and Laboratory will be added to the College as soon as possible.- Each pupil will be examined as to his knowledge on entrance and he will be permitted to commence from that portion of the

the course of study of each subject up to which he has shewn himself thoroughly competent to answer any questions.-

7. Course of study.

1. Mathematics.

1. Arithmetic, including Vulgar and Decimal Fractions, Extraction of the Square & Cube Root, Book-keeping as practised in the D. P. W., simple and Compound Interest, Discount, Annuities &c.
2. Mensuration.
3. Geometry.
4. Nature and use of Logarithms.
5. Plane Trigonometry.
6. Algebra to Quadratic Equations & Geometrical Progression.
7. Statics, Dynamics and Hydrostatics.
8. Conic Sections.

9.

9. Analytical Geometry and Trigonometry.
10. Spherical Trigonometry.
11. Differential & Integral Calculus.

The text Book for the Mathematical course will be "Weale's" Rudimentary Treatises.

2. Drawing & Surveying.

1. Drawing plans.
2. Prismatic Compass Survey.
3. Levelling.
4. Preparation of Estimates.
5. Surveying with Theodolite and other instruments.
6. Measurement of Heights by Barometer.
7. Elementary Astronomy.

The text-books for the surveying course will be "Weale's" Treatises and "Smith & Thuillen's" Surveying.

3. Constructive Engineering.

1. Materials, as Bricks, Limes, Timber &c.

2. Blasting Rock.
3. Foundations, Cofferdams &c.
4. General Construction in Masonry, Carpentry &c.
5. Strength and Stress of Materials.
6. Stability of abutments, piers, retaining walls &c.
7. Centrings.
8. Equilibrium of arches and Suspension bridges.
9. Bridges of Wood, Iron and Masonry.
10. Canals, Aqueducts, Tanks, their construction &c.
11. Irrigation in general.
12. Marine and River Engineering, including Harbours, Docks, Piers, Breakwaters, Canals and River Boats, and the means of propulsion &c. &c.
13. Railway Engineering their construction with a view to economic working.
14. Supply of water to Towns &c.

15. Power of Water.

The text books for the Constructive Engineering course are "Weale's" Treatises, "Mahon's" Civil Engineering, Hurdo's Notes on Road Making &c.

4. Mechanical Engineering

1. Mechanical Powers
2. Movements and Combination of Machinery
3. Machines employed in transporting and lifting materials.
4. Skill employed in Engineering works.
5. Steam Engine, Stationary and Locomotive, and for River boats.
6. Teeth of Wheels, Racks and Pinions.
7. Expedients for changing motion.
8. Friction, Resistance, Labouring & Dynamical force &c.

9. Centripetal and Centrifugal forces.

The text books for Mechanical Engineering are "Weale's" Treatises.

5. Architecture

1. The classic orders and their parts, their application, principles of composition &c.
2. Styles, peculiarities of different styles &c.
3. Architectural Drawing.

The text books for the Architectural course will be "Weale's treatises."

6. Natural Philosophy

1. Steam, its power, properties and various applications
2. Fuel of various kinds, Estimation of Calorific power
3. Electricity
4. Meteorology
5. Physical Geography } Especially of India.

5. Botany, vegetable products, Timbers, Likes &c.

The text books for the course of Natural Philosophy are Neales Treatises or Golding Bird Hand Book of Natural Philosophy.

7. Inorganic Chemistry.

1. Properties of Inorganic substances.
2. Analyses of ditto.

The text books are Fownes' Hand book of Chemistry and Bowmans Practical Chemistry.

8. Geology & Mineralogy.

1. Elements of Geology.
2. Superposition of Rocks.
3. Component parts of Rocks.
4. Palaeontology.
5. Crystallography and properties of Minerals.
6. Blow pipe Analysis.

The text books are Austeds Geology and Dana's Mineralogy

8. The Certificates will be of 3 kinds.

A 1st Class Certificate will denote theoretical fitness for the Engineer Department of the Public Works & Certificates for "Honors" as denoted in Appendix 2, will be issued to those students who exhibit superior degrees of knowledge.

A 2d Class Certificate will denote ditto for the grades of Sub Engineers of all classes in the "Upper Subordinate Department of Public Works.

A 3d Class Certificate will denote ditto for the grades of Superintendent and full & Assistant Overseers in the "Upper Subordinate" Department

2

of Public Works.

A 4th Class Certificate will denote ditto for the different grades of Sub Overseers in the Lower Subordinate Department of Public Works.

9. To obtain these Certificates the Student must pass the Examination as laid down in the Examination Test No 2 appended. He must also have some colloquial knowledge of one Native Language, and, for a 1st & 2d Class Certificate, be able to read an Urzee with facility. He must if a Candidate for a 1st or 2d Class Certificate and moreover, if not a Commissioned Officer of the Army, pass an Examn

Examination as to his general education, as laid down in Appendix No 1.

10. The College is open to all who may pass the Examination alluded to in paras: 3 and 6 ~~and produce a satisfactory testimonial of character~~, but any student whose moral conduct or progress may prove unsatisfactory, will be liable to summary dismissal at the option of the Principal.

I would omit

11. There will be 15 Stipendiary Students admitted to the College per annum; these will be selected from the most promising Scholars in the District Engineering

on

or other Government schools, and whilst at the College, will receive Rupees 6 (six) per Mensem for one year and have travelling expenses according to distance to and from Madras allowed them.

12. All students will be examined at the end of each Session and ten scholarships will be given at the end of the 1st year and four at the end of the 2d viz:

10 scholarships of ten Rupees each for 1st Year students.

4 scholarships of forty Rupees each for 2d Year students.

Each scholarship to last for one year, during which time the student will be expected to prosecute his studies at the College.

13. The text books will be supplied to all students on payment by monthly instalments and the following fees will be levied on all students obtaining Certificates from the College, which will be appropriated to the Enlargement of the Library and Model Room. viz:

	Rs
1st Class Certificate	100
2d Class ditto	50.
3d Class ditto	20.
4th Class ditto	5.

These fees will not be demanded from men in the Service.

14. The following are the rules for the admission

× Every student not being a Non Commissioned Officer or Soldier and not holding a Scholarship, will be required to pay a monthly fee of Rs 3.-

admission of Commissioned European Officers and Soldiers.-

Admission of Officers.

1. European Commissioned Officers of the Army, under the rank of a Field Officer, will be permitted to study at the Civil Engineering College at Madras on the following terms.

2. The Candidate for admission must be qualified by acquaintance with his Military duties and by having passed the Examination in the Vernacular Languages to have charge of a Company.-

3. His application is to be addressed through his Commanding Officer to the Principal of the College

College, who, after satisfying himself that the Candidate is likely to profit by the course of study, will forward the application for the approval of His Excellency the Commander in Chief.-

4. Admissions to the College will take place on the 1st August of each year. All applications should be made so as to permit of the Candidates joining not later than the 1st August, after leave formally granted in General Orders.-

5. The duration of the first permission to study at the College will be to the 15th April of the next year, but if the progress of the student is satisfactory and

and his conduct other-
wise exemplary, the
Principal will be at-
liberty to forward his
application to Head
Quarters for permission
to remain another year
at the College. No student
will be permitted to
remain longer than the
April year after his
first admission, unless
on special sanction
granted under peculiar
circumstances.-

6. The Principal of the
College may at any
time recommend to
His Excellency the
Commander in Chief
that an Officer be re-
-manded this Regiment.-

7. Officers studying at
Madras under these
rules will be required
to

to pay 10 Rupees per
mensem to the College
Library Fund.-

8. Officers who obtained
permission to study
at the Madras Engineering
College will be consid-
-dered "absent on duty"
and will be so reported
in the Regimental Returns.

Admission of Non-Com-
-missioned Officers.

European Non
Commissioned Officers
and Soldiers are required
previous to admission,
to prove by examination
conducted in commun-
-ication with the
Principal of the College,
their proficiency in
reading, writing and
Arithmetic as far
as Vulgar Fractions
and Simple Plan Drawing;

they

they must be well recom-
mended by their Command-
ing Officer and by the
Engineer of the District
to which they may be
stationed, and furnish
a Certificate from a
Medical Officer of
unimpaired constitution,
also a Certificate that
they have not any former
time been dismissed
from Staff Employment.
Passed Candidates will
be nominated in May
of each year and will
join the College on the
1st August following.

They will be consi-
dered as doing duty
at the College and
will remain on the
strength of their respective
Regiments. Whilst at
the

the College they will
wear the Undress or
fatigue uniform of
their rank and Regiment
with forage Cap and
Cap-cover, and will
be under the command
of the Principal and
an Officer Studying
at the College, who will
be specially nominated
by Government for the
purpose.

They should be fur-
nished, on joining the
College, with a record
of service and certifi-
cates of their last Pay,
Rations or batta, clothing
and bedding received
by them with their Re-
giments; also of the
nature of the Carriage
furnished to them
at the Government
expense

expense on their leaving their Regiments. They will receive whilst at the College the same pay as with their Regiments, including good conduct pay when entitled thereto, together with dry ration money and Rupees 10 as College allowance, which is intended to cover the cost of Books and other Extra Expenses (not including quarters). When not furnished with Carriage either for tent or baggage, to enable them to join they will receive travelling allowance at the rate of one anna per mile, and if furnished with Carriage for tents only but not for baggage the allowance will be half an anna per mile. In either case, double allowance will be granted to married men. If they make no sufficient progress and are not steady and industrious, they will be remanded to their Regiments. Their time of studying at the College is limited to 2 years, excepting under peculiar circumstances.

The number of Non Commissioned Officers and Soldiers is limited to 30, of whom 3 may be married men and whose wives must be

be furnished with Certificates of good character.

Applications to the Principal for the Examination of Candidates should be accompanied by a descriptive Long Roll and Extracts of Courts Martial and Defaulters' Book from the date of the Candidates' entrance into the Service.

Signed G. Winstone
Principal
Civil Engineering
College.

Should Day either

Notice that only one exercise & the second part of the Latin, will be required of candidates for Examination from a Native Regiment and another from a Native Artillery Corps will be required to answer questions in Hindustani.

W.H.

Detail of Examination Tests
General Education.

Subjects.	No. of Questions	Value of each Question.	Total value of Subjects.
English Dictation - comprising		*	75
Given passage to be read out by Examiner			or 250
Handwriting	*	25 or 75	
Spelling		130 or 90	
Punctuation		20 or 60	
Latin			250
Translate passage from Virgil not less than 10 lines or similar portion from Cæsar	2	175	
Questions on Parsing, Grammar & Syntax	5	75	
French or Vernaculars (Telugoo, Tamil or Canarese)			250
Telemachus, Charles 12th or Peter the Great			75
translate passages of similar extent to the above	2	175	
Questions	5	75	
History, comprising			275
Greece and Rome	3	75	
England	4	100	
British India	4	100	
Geography	7	150	150
		Total	1,000

Interchangeable according as Candidate be European or Native.

Instead of Latin for Natives, English Composition will be given as follows.
Translate a portion of a Native work & put it into good English 175
Compose English Poetry on a given subject ... 175
250

Appendix No. 2.

Detail of Examination Tests.

	Subjects.	No. of Questions	Value of each Subject.	Total value of Subjects.
1.	Mathematics. Comprising			600.
	Arithmetic	20.	75.	
	Mensuration	14.	125.	
	Geometry	14.	125.	
	Plane Trigonometry with the aid of Logarithms	10.	150.	
	Algebra	16.	125.	
2.	Drawing & Surveying. Comprising			400.
	1. Theodolite Circuit, interior detail by Compass or Plane Table, Plan to prescribed scale, Field Book in Original, Plotted by Angles & by Traverse	1.	75.	
	2. Plot from given Field Book	1.	25.	
	3. Trigonometrical Diagram with data for calculation	1.	50.	
	4. Level Circuit, Plan Section, Orig.l Field Book	1.	25.	
	5. Prismatic Compass Circuit, Plan & Orig.l Field Book	1.	50.	
	6. Questions, including Elements of Practical Astronomy	1.	75.	
	7. Copy of C. E. Drawing on given scale	1	50.	
	8. Copy of reduced or enlarged given Topographical Drawing	1	50.	
3.	Constructive Engineering			500.
	Questions on Engineering of various kinds	30.	300.	
	Design for a dwelling or Barrack &c. with Estimate in full	2	75.	
	Design for a Bridge or Harbour, Pier, Light House or other Engineering Work with Estimate in full	2	125.	

	Subjects continued.	No. of Questions	Value of each Subject.	Total value of Subjects.
4.	Mechanical Engineering			500.
	Questions on various points	20.	300.	
	Invent a Machine for a given specified purpose	1.	200.	
5.	Architecture			200.
	Questions on various points	4.	75.	
	Design a Building in specified style and for a nominated purpose	1.	125.	
6.	Natural Philosophy			300.
	Questions on various points chiefly in connection with steam and fuel.	10.	300.	
7.	Inorganic Chemistry			200.
	To make a simple qualitative Analysis	1.	200.	
8.	Geology and Mineralogy			300.
	Questions on various points	10.	150.	
	Blow pipe Analysis	1.	150.	
	Total			3,000.

The necessary number of marks to obtain the desired Certificates are as follows:

For Honors { Highly distinguished. 8/10 of the marks on each subject.
Great credit. 7/10 of ditto —— ditto —

1st Class Certificates { 5/10 of the marks on each subject.

2nd Class. 3/8 of ditto for the 1st six subjects.

3rd Class. 1/2 of the ditto for the 1st three ditto, Civil and Mechanical Engineering being interchangeable at option.

4th Class. 1/10 of the marks for the first 3 subjects

Civil and Mechanical Engineering as above.-

N.B. If a Candidate be not an Officer of the Army, before the Certificates for Honors or 1st Class are granted, the Examination of his general education as laid down in Appendix No 1 must be passed, and both for Honors and for 1st and 2d Class Certificates, he must shew that he has the same Knowledge of a Vernacular language that is required of Officers of the Army before they obtain charge of a Company.- For the 3d and 4th Class Certificates likewise the Candidate must shew that they have some colloquial knowledge and can read ordinary accounts.-

Signed/ G. Minchin, Lieut.
Principal of the Civil
Engineering College.

/True Copy/

A. / Grantham
Director of Public Instruction

Enclosure 1.

In a letter from the Director of Public Instruction to the Chief Secretary to Government, dated 19th November 1857. No. 1098.

From,

The Director of Public Instruction,

To,

The Chief Secretary to Government, Fort St. George.

P/W 2356/57.

Prospectus of the projected Civil Engineering College at Madras.

P/57/D
Jn No 1922

No. 1098.

Madras, 19th November 1857.

From,

A. J. Arbuthnot Esqre.,
Director of Public Instruction.

To,

The Chief Secretary
to Government
Fort St. George.

Sir,

I have the honor to forward, for the consideration and orders of the Right Honorable the Governor in Council, the annexed copy of a letter, under date the 3d. Instant, from Lieutenant George Watson, lately appointed Principal of the projected Civil Engineering College, submitting a Scheme of the establishment which he considers will be required for the College and a prospectus of the course of instruction to be carried out.

The

2. The cost of the Establish-
=ment proposed by Lieutenant
Winscom amounts to Rupees
3,850 per mensem. It does
not appear to me to be suscep-
=tible of any very material
reduction. The salaries proposed
are not larger than will be
requisite to secure the services
of efficient teachers in the several
subjects to be included in the
Course of instruction, nor is
the number of teachers greater
than will be required when the
College shall have been fairly
organized. A few of the re-,
such as the Assistant Mathe-
=matical Master, the 2nd Assistant
Drawing Master and the Lecturers
on Natural Philosophy and
on Geology and Chemistry might
possibly be dispensed with at
the

the commencement. In the item
of house rent, there might also,
I think, be some reductions.
I do not think it is necessary,
in the case of the Mathematical
Master, the Drawing and Surveying
Master, the Assistant Drawing
Master or in that of the Professor
of Geology and Chemistry, while
in the case of the Principal
himself, I am somewhat doubt-
=ful whether the amount of
house rent proposed is not
unduly large. Lieutenant Winscom
has stated, in a separate
letter, a copy of which is annexed,
his reasons for considering
himself entitled to house rent
at the rate of Rupees 150 per
mensem. He explains that this
allowance, if granted, will no
more than place him on an
Equality, in respect of salary,
with

with his coteporaries in the Corps of Engineers, most of whom now hold the office of 1st Class District Engineer. The salary of the Principal should certainly be somewhat larger than those of his coteporaries in the Provinces, in consideration of the additional Expenses attendant on a residence in Madras. With this view I would suggest that the Principal's salary should be fixed at Rupees 800 per mensem, which, I believe, is the rate assigned to the Superintending Engineers (and that he should be permitted also to hold the Office of Lecturer on Mechanical Engineering. The duty of lecturing on Constructive Engineering will, according to Lieutenant Wilcox's scheme, be attached to the Principalship. With

3. With these remarks I beg to recommend the scheme of Establishment, as proposed by Lieutenant Wilcox, for the favorable consideration of Government, subject to the reductions I have suggested. The scheme, as modified, is shown in the margin. It involves an immediate Expenditure of Rupees 2,995, and an eventual Expenditure of Rupees 3,585 per mensem.

	Immediate monthly expenditure	Eventual monthly expenditure
	Rupees	Rupees
1 Principal (Staff Pay)	800.	800.
1 Mathematical Master	400.	400.
1 Assistant ditto	"	100.
1 Lecturer on Mechanical Engineering	250.	250.
1 Drawing, Surveying & Architectural Master	300.	300.
1 Asst. Drawing Master	80.	80.
1 Ditto ditto ditto	"	40.
1 Lecturer on Natural Philosophy	"	100.
1 Professor of Geology & Chemistry	"	350.
1 Officer in charge of Non Commissioned Officers	60.	60.
3 Moonshees	90.	90.
Scholarships	350.	350.
College allowance to 30 Non Commissioned Officers & Soldiers	300.	300.
General Establishment	165.	165.
Rent of College Buildings	200.	200.
Total	2,995.	3,585.

I also recommend that authority be granted to rent the Sweer Baugh for the College and

and that the opinion of the Honour-
-able Company's Solicitor be
taken as to the Expediency of
purchasing the lease of this
building. Lieutenant Winscom
has been informed by the Agent
to the Agra Bank that when
the lease for which the Bank
holds it falls in, the building is
likely to lapse to Government,
and if this statement be correct,
it would perhaps be economical
to purchase the lease, which,
I understand, may be had for
12,000 Rupees and which has
between 12 and 13 years still
to run, in preference to renting.
This would admit of the erection
of the accomodation that will
be required for the European
Soldiers and Non Commissioned
Officers for whom lodging will
have to be found.

In

5. In regard to the course
of instruction set forth in para: 9,
I have merely to observe that,
so far as I am competent
to form an opinion, it appears
to be well adapted for the
object in view.

6 Lieutenant Winscom,
it will be observed, does not
propose to divide the College
into departments or classes,
with reference to the class of
Certificate for which the several
students may seek to qualify
themselves. His plan, as I under-
-stand it, is that every branch
of instruction shall be open to
every student in the College,
irrespectively of the particular
branch of the Public Works
Department or of Engineering
work generally for which he
may be seeking to qualify
himself

himself. A different arrange-
ment, His Lordship in Council
is aware, has obtained at
Roorkee. That Institution is
divided into three Departments,
in each of which the course of
instruction is specially adapted
to the branch of the Public Works
Department for which the Students
are qualifying themselves.

7. I am inclined to think that a similar arrangement will practically come into operation in the Madras College, or that, if not, it will have to be introduced eventually, but until some Experience shall have been gained of the working of Lieutenant Winscom's scheme, I am not prepared to recommend any alteration of it in this respect.

8. I have entered in red ink in the margin of the prospectus submitted by Lieutenant Winscom a few alterations, &c. &c. which appear to be required in that document.

9. I beg that the Civil Auditor may be instructed to pass the salaries of the Writer and Peon whom Lieutenant Winscom has entertained from the 30th Ultimo, & that the sum of Rs. 5000 be placed at his disposal for the purpose of fitting up the Model Room, Museum, Library &c.

Writer — Rs 40.
Peon — — 6.

I have the honor &c.
Sir
Your most obedt Servant
C. J. Cumberland
Director of Public Instruction

Office of the Director of Public Instruction,
19th November 1857.

No 1. Madras, 3d November 1857.

From The Principal of the Civil Engineering College.

To, The Director of Public Instruction, Madras.

Sir, I have the honor to forward for the approval and sanction of Government a Prospectus of the Civil Engineering College at Madras.

2. Before drawing it up I carefully perused the whole of the correspondence which has taken place on the subject as well as the account of the Roorkee College, and I trust that the scheme, which I now submit, will be found to be such a modification of that Institution as is well adapted to meet the wants of this Presidency at the present time. As the College becomes developed, changes and amendments will doubtless be needed and may then be made.

3. The establishment and monthly expenditure which I conceive would be necessary is as follows, and as it is less than that allowed for Roorkee or that sanctioned for this Presidency by the Government of India in Colonel Baker's letter No 94 of the 12th January 1856, I trust the Governor in Council may see fit to approve of it and order me to make the necessary arrangements for carrying it at once into Execution, although some time must elapse before suitable persons are found to fill the various offices; for if so directed I could make the needful arrangements

arrangements with much greater celerity and freedom; whilst I could study economy by not entertaining persons or incurring expense till the fit time for so doing had arrived.-

Establishment.-

1 Principal (Staff Pay)	Rupees	100.
* House rent for ditto		150.
1 Mathematical Master		400.
* House rent for ditto		50.
1 Assistant Mathematical Master		100.
1 Lecturer on Mechanical Engineering		250.
1 Drawing, Surveying & Architectural Masters	}	300.
* House rent for ditto		40.
1 Assistant Drawing Masters		80.
1 Ditto ditto ditto		40.
1 Lecturer on Natural Philosophy		100.
1 Professor of Geology and Chemistry		350.
* House rent for ditto		40.
* 1 Officer in charge of Non Commissioned Officers &c	}	60.
3 Moonshees		90.
Scholarships		350.
College allowance to 30 Non Commissioned Officers & Soldiers	}	300.
Carried forward	Rupees	3,400.

Brought forward	Rupees	3,400.

General Establishment.

2 Peons	Rupees	12.
1 Bearer	"	7.
12 Lascars	"	72.
2 Porters	"	10.
1 Sweeper	"	4.
2 Writers	"	60. 165.
* Rent of College Buildings		200.
* Rent of Building for Barracks and Establishment for ditto	}	85.
Total per mensem Comp.y Rupees		3850.
or per annum Company Rupees		46200.

4. Deducting the items marked thus *, the monthly expenditure would be Rupees 3115. or 173 Rs. less than that allowed for the Roorkee College, viz: Rupees 3398 (including the College allowance to Non Commissioned Officers and Soldiers) which Government has directed shall be the model to which the present College is to be generally assimilated.- At Roorkee the items marked * are

are not included, and amongst the extensive buildings erected by Government for that institution are houses for the Principal, the Head Master, the European Non Commissioned Officers &c. This Expenditure, it will also be observed, is within the limits by 1000 Rupees per mensem of that sanctioned by the Government of India in Colonel Baker's letter No. 96 of the 12th January 1856: viz. 4,850 Rupees per month or 58,200 Rupees per annum. (See Mr. Arbuthnot's letter No. 218 of the 20th July 1855), so that an ample margin is left for an extension of the scheme in the Mofussil.

3. I would here beg to bring to the notice of Government that the Building and grounds designated "Auber Bagh" on the Mount Road are for rent, or on the lease which has between 12 and 13 years yet to run, is for sale. It is at present mortgaged to the Agra Bank Company. The rent would be about 180 or 200 Rupees per mensem (depending on the time for which it may be taken). The building appears suited for the College; at any rate for the present, the accomodation being sufficient for our primary purposes, and as it is very desirable at once to secure a building, I beg to recommend that it be rented, if the Agent of the Bank, who at present occupies it, will vacate by the 15th December next.

3 Plans forwarded herewith

6. I am not at present prepared to recommend any site in particular for the Barracks

Barracks of the Non Commissioned Officers and Soldiers studying at the College, but I doubt not that, before long, one will be found adapted for the purpose.

7. I have included in the Estimate of Expenditure Rs. 60 per mensem for the Officer in charge of these men; this item is not in the Roorkee Schedule, because the Barracks form part of the College Buildings and they are consequently under the immediate supervision of the College authorities. At Madras, for the present, this cannot be the case, and I therefore have thought it advisable to recommend that one particular person be selected to exercise that vigilant Military control, which my Experience as Commandant of the Sappers and Miners makes me know is essentially necessary.

8. I would hope, if the Government approve of my scheme, to begin to work the College at the commencement of next year. For the first few months, we must expect the usual irregularities attendant on new undertakings to occur, but I would trust that at the commencement, in August, of the Session of 1858/59, matters will be so arranged as to make the institution effective for the purposes required.

9. I propose that the division and method of instruction shall be as follows.

Mathematics — To be taught by the Mathematical Master and his Assistant to each pupil individually in the Study Rooms, each student working independently of the others.

Drawing.

To be taught as above, but the Cadets proceeding in parties into the field for surveying with the Masters till they can work by themselves.

Drawing, Surveying, Elementary Astronomy and Architecture.

To be taught by lectures delivered by the Principal and an Engineer Officer appointed for the purpose, explanation of points not properly understood being given to Engineers after each Lecture. Certain hours to be set apart for reading on the subjects under consideration to be termed "Engineering study hours". Students will also visit all Engineering works in Madras and its vicinity and questions to ensure their scientific study of the same will be given.

Construction and Mechanical Engineering.

To be taught by some qualified Engineer Officer by means of lectures as above. Study hours for this subject will likewise be allotted.

Natural Philosophy.

To be taught by Lectures and by Laboratory practice, the Professor rendering the pupils, who will work separately, all needful assistance. Study hours for reading on Geology will be assigned. The Lectures on Geology and Mineralogy will be illustrated by specimens and Plans.

Geology and Inorganic Chemistry.

10. I have carefully considered the tests of the Civil Engineering College, Fort William, forwarded by me with Extract Minutes of Consultation &c. 1845, of the 29th September last and the Appendices to the Prospectus will indicate what I conceive to be those best suited to the requirements of this Presidency. The plan of Education, as I propose it to be, is, it will be observed, different to that of the Calcutta and Roorkee Colleges.

The

The Madras College, whilst it only gives Certificates of Theo=retical knowledge, opens a wide door for competition to all Can=didates and affords a more general plan of instruction than that in the sister Colleges, whilst for the Engineer Department the Extra Examination of General education will exclude all Excepting men who have received a liberal education as Gentlemen.-

11. I am unable of myself to perceive the necessity for further Examinations than those laid down as the great Desideratum for men in the Engineer Depart=ment are. 1st Knowledge of Engi=neering Science and intellectual vigor. 2d Zeal, energy and a strong Constitution. The College is calculated to develope the first, and the Certificates only attest on these points. The Engi=neers, under whom the Candi=dates may subsequently serve, will be the best judges of the second and their intellectual and physical qualifications combined ought to determine their position in life. Therefore I see no necessity for different Departments in the College, but prefer that each Man endea=vour to obtain the highest Certificate he can.-

12. For the Model Room, Economic, Geological Museum and Library, I beg to solicit a grant of 5,000 Rupees from Government to commence with and I would submit that some annual allowance be conceded for purchasing such Books, Specimens, Models &c as may appear

appear most advisable to the Principal.. To adjust this allow-ance he could send in his Con-tingent Bill at the close of each Session.-

13. The text books I have proposed are, it will be observed, chiefly Weale's Rudimentary Treatises. Many of these little volumes are very complete in themselves and their reasonable price puts it within the reach of all to purchase them.- For those who wish to learn further on the various subjects on which instruction is given, the Library will afford ample op-portunity of studying more elaborate and expensive works.- My endea-vour in framing the Prospectus of the College, has been to render it a really utilitarian institution, and in so doing, whilst it embraces tuition

tuition on all subjects that are needed to give a degree of Master of Engineering in the Madras University, I have borne in mind the inferior education and pecuniary difficulties under the disad-vantages of which the majority of the students may probably labor.- In after years the College may be put generally on a more erudite footing.-

I have &c.

Signed/ G. Winscom

Principal of the C.E. College.

P.S. To meet my present require-ments I have entertained since the 30th October, a Syster on 10 Rs and a Peon on 6 Rupees per mensem, and I shall feel obliged by your obtaining for this the sanction of Government.

Your

No 4.

From,

Lieutenant G. F. Dinsdale,
Principal of the Civil
Engineering College.

To,

The Director of
Public Instruction,

Sir,

With reference to the item of Rupees 150 included in the Estimate of Expenditure to be incurred in the Civil Engineering College, as shown in my letter No 1 to your address, on account of house rent for the Principal, I have the honor to state that it is included for the following reasons.

1st The Principal of the Roorkee College has a suitable residence allotted to him, and till the residence was built, he had house rent allowed him.

2d The Principal at Calcutta, in every probability, has house rent allowed

allowed to him, as all Staff Officers at that Presidency are so favored.

3d The appointment being a new one, the allowance should be granted on its own merits, now or never.

4th All the Cotemporaries of the Principal (for I presume his position in the department of Public Works would always entitle him to be a District Engineer of the 1st Class) are allowed at the rate of Rupees 150 per mensem for extra expenses incurred in travelling &c and it is but common justice that the Principal of the College should likewise be allowed compensation for the extra expenses of House rent and living in Madras, which, at the lowest estimate, must exceed that sum;- indeed, if otherwise,

no

no Officer could readily be supposed to accept an appointment, involving so much extra expenditure, without compensating advantages.-

Thave &c.

Palaneeam, 14th November 1857.

Signed/ G. P. Winslow
Principal of the Civil Engineering College.

/True Copie./

R. J. Cumberbatt
Director of Public Instruction.

P.C. 26th Feby/58 No. 576.

Para: 4 - to the Hon. Col Solicitor - 5 Pany/58. No 2.

Copy to the Govt of India - 5 Pany/58 No 3

No 3.

29 Dec. 1814

Public Works Depart.
Dy to Govt: 8th January 1858.
No. 2356.

From

The Director of Public Instruction,

To.

The Chief Secretary to Government, for Fort St. George.

Dated 19th November 1857.

Received 23 Dec 27th do

No. 1698.

(With one Enclosure.)

No. 1922.

N.F. No. 2 - 5 Pany/58.

Submitting copy of a letter from the Principal of the Civil Engineering College with a scheme of Establishment and a Prospectus of the proposed course of instruction & recommending them, with certain modifications, for the favorable consideration and orders of Government.

P. W. Dept

No. 2

Extract from the Minutes of Consultation under date the 5th ~~December~~ January 1858

Read the following letter from the Director of Public Instruction.

Recd. 19. Nov. 1857 No 1698

Resolved that the sanction of the Government of India be solicited to the Establishment for the proposed Civil Engineering College recommended by Mr. Arbuthnot in his para 3; and

and that pending the
receipt of a reply, the
Honorable Company's
Solicitor be requested
to state his opinion on
the expediency of pur-
chasing the lease of
the Writer's Building known
as the Annex Bagh,
as suggested by Mr
Arbuthnot in para
4, of which a copy
will be furnished
to Mr Bojson.

Sanction is granted
for the payment of the
salaries of the Writer
and Peon entertained
by Lieutenant Wimscom
from the 30th October last.-

Endorsed on the Request
from made,

Writer - £
Peon —

provided in the same
paragraph that Rs
5,000. may be placed
at Lieut Wimscom's
disposal, for the
expenses attending
the fitting up of the
Model Room and
Library, will be
passed on a reply
being received from
the Government of
India to the applica-
tion now about
to be made for the
Establishment -

JPG

2 Copies to the Director of
Public Instruction - Circ: 6
1 — Hon. Co's Solicitor with Para 4 of the letter - Circ: 6
1 — Asst. Genl
1 — Civil Auditor
1 — Dr. to Mr Wimscom

P. W. D.

No. 3

To

Captain H. Yule

Officiating Secretary to the
Government of India
P. W. D.

Sir,

On the 15th August 1855, this Government submitted with their approval, certain arrangements proposed by the Director of Public Instructions for the establishment of a Civil Engineering College at Madras, for the training and instruction of persons seeking entrance to the Public Works Department and desirous of qualifying themselves for general professional employment. The scale of establishment, involving an expenditure of Rupees 4850 per mensem, and the classification of Departments in the College, proposed by the Director were generally approved by the Government of India, as intimated in Col. Baker's reply of

Public Works Dept. 1855 Oct. 8th
Dated Fort St. George 8th January
No. 2.

From

Patrick Ellis, Esq.
Offg. Secretary to Govt.

To

H. L. Stokes, Esq.
Secretary to the Board of Revenue.

Sir,

I am directed by the Board of Revenue to transmit herewith, for the information of the Government, a letter from the Collector of Chingleput, No. 1066 dated 8th January 1856.

2. The Board of Revenue submit for the orders of Government the accompanying letter from the Collector of Chingleput, No. 1066 dated 8th January 1856.

3. The Board of Revenue submit for the orders of Government the accompanying letter from the Collector of Chingleput, No. 1066 dated 8th January 1856.

4. The Board of Revenue submit for the orders of Government the accompanying letter from the Collector of Chingleput, No. 1066 dated 8th January 1856.

5. The Board of Revenue submit for the orders of Government the accompanying letter from the Collector of Chingleput, No. 1066 dated 8th January 1856.

No. 3944

Public Works Dept. 1856 Oct. 8th

Referring the Collector's
Letter for the Opinion and
Engineering College.

From the Principal of the
Civil Engineering College
Fort St. George
25th January 1856

Public Works Dept. 1856 Oct. 8th

of the 12th January 1856, but an opinion was at the same time expressed, that such a training school as Major Maitland's should be incorporated with the proposed College, and it was stated that the Government of India would be prepared finally to approve a scheme, embracing the features sketched in Col. Baker's letter. The Director of Public Instruction was accordingly requested to submit his opinion on the arrangements which should be made in the scheme of the proposed College, to give effect to the wishes of the Government of India.

Some correspondence ensued between the Director of Public Instruction and Major Maitland, founded on the very different interpretations which they had adopted of

+ 2d June 1856 N° 643.
* 31st July 1856 N° 888.

of the letter from the Government of India of the 12th January in respect to the position to be assigned to Major Maitland in the new College. The question was referred to the Government of India, and with a subsequent communication was forwarded a report from Mr Arbuthnot, expressing his views regarding Major Maitland's School with reference to the observations contained in Col. Baker's letter of the 12th January 1856. The question as to the position to be occupied by Major Maitland in the proposed College, was definitively replied to in a letter from the Government of India of the 8th August following, which also communicated some observations on the mode of dealing with that Officer's School in connection

connection with the new College, and these observations, it was intimated, were to be considered as in suspension, no mention in explanation, of that part of the letter of 12th January, which referred to this branch of the subject. The Director of Public Instruction was accordingly requested to state his opinion as to the manner in which he would propose to carry out the views of the Government of India, in respect to Major Maitland's School, as stated in the 5th and following paras of the letter of the 8th August 1856.

Mr Arbuthnot's reply to this requisition, dated 6th April 1857, was taken into consideration in Extract from the Minutes of Consultation of the 23rd June following,

in connexion with the views of the Chief Engineer and other officers, who were appointed a Committee to report on the instruction which should be afforded for the purpose of providing a supply of Civil Engineers and Artificers, sufficient for the requirements of this Presidency. A printed copy of Mr Arbuthnot's letter, and of the Extract from the Minutes of Consultation referred to, have already been laid before the Government of India, who will have observed that, after careful consideration of the subject, this Government have considered it desirable that an Engineering College, on the plan of that at Roorkee, should be at once founded at Madras, and that its entire organization should be

† Pub. Works Cons. 23 June/57 Nos 90 to 93.

† Vide Ed. Mins. Cons. 23 June/57 Items 19, and 22. 23.

be entrusted to a Principal,
who should undertake the
Superviision of the present
Survey School as a commencement
It will further have been seen that this Government
have also deemed it advisable
that a separate provision should
be made for the instruction
of Artificers, by means of
Schools to be attached to the
great workshops; and that
under these arrangements it
has been resolved that the
Schools under Major Maitland's
Superviision, should be continued
on its present footing until
further orders.

Having thus briefly
recapitulated the substance
of the correspondence that has
taken place on the subject
of the proposed College, I have
now the honor, by desire of
the Right Honorable the
Governo

Governor in Council,
to transmit the accom-
panying communication
from Mr Arbuthnot,
enclosing one from
Lieutenant Wimscom,
lately appointed Prin-
cipal of the Civil
Engineering College,
submitting a Scale of
the establishment which
he considers will be
required for the College,
and a prospectus of
the course of instruction
proposed to be imparted
in it

The

The establishment proposed by Lieut. Wimscom, would involve an expenditure of Rupees 3850 per mensem as shown below:

		Rs.
1	Principal (Staff pay)	700
	House rent for do.	150
1	Mathematical Master	100
	House rent for do.	50
1	Assistant Mathematical Master	100
1	Lecturer on Mechanical Engineering	250
1	Drawing) Surveying and Architectural Master	300
	House rent for do.	40
1	Assistant Drawing Master	80
1	do. do.	40
1	Lecturer on Natural Philosophy	100
1	Professor of Geology and Chemistry	350
	House rent for do.	40
1	Officer in charge of the Non Commissioned Officers & Soldiers	60
3	Munshees	90
	Scholarships	350
	College allowances to 30 Non Commissioned Officers & Soldiers	300
	General establishment	165
	Rent of College Buildings	200
	do. of Barracks for Non Commissioned Officers &c.	85
		3850

Mr. Arbuthnot considers the cost of the establishment recommended by Lieut. Wimscom to

- 1 Assistant Mathematical Master — Rs. 100.
- 1 Asst. Drawing Master — 40
- Lecturer on Natural Philosophy — 100
- Professor of Geology & Chemistry — 350.

to be moderate, and there which it is number of teachers proposed to entertain not greater than will be required when the College shall have been fairly organized; but he is of opinion that the services of the officers named in the margin, may be dispensed with for the present. He also considers the amount of house rent proposed for the Principal to be large; but adverting to what is urged by Lieut. Wimscom in his letter of the 14th November last, he proposes that his salary should be fixed at 800 Rupees per mensem, and that he should be allowed to hold office in conjunction with the

Principal

Principal — of the College,
that — of Lecturer on
Mechanical Engineering.
Mr Arbuthnot does not
consider an allowance for
hired rent to be necessary
in the case of the other
officers, and he has also
omitted the expenditure
proposed to be incurred
in renting buildings for
the accommodation of
Non Commissioned Officers
and Soldiers, for the reason
which he assigns in
para 4 of his letter.
Deducting these items,
the scale of establishment
for the College, as modified
by Mr Arbuthnot involves
an

[illegible] buildings are to be
rented for them — the
cost of the professors
house — and the interest
of the money expended on
the erection of College
to charged under the head
Allowances — interest on
[illegible]
Bungalow with a proportion
of Church &c

an expenditure of Rupees
3585
~~3670~~ per mensem, of which
2995
however only Rupees ~~3680~~
will form an immediate
charge ~~as shown below~~. The
Government of Madras approve of this scale with the exception of the omission from it of the sum proposed by Lieut. Winscome for lodging money for the soldiers studying at the College: it is not certain that the building proposed by Mr Arbuthnot can be procured, and even if it be, buildings must be erected for the Soldiers, and the lodging allowance may be considered to be interest of the Capital that will be invested — the items have therefore been added to the scale proposed by Mr Arbuthnot.

	Immediate Monthly expenditure	Contract Monthly expenditure
	Rs.	Rs.
1 Principal (Staff pay)	800	800
1 Mathematical Master	400	400
1 Assistant do	"	100
1 Lecturer on Mechanical Engineering	250	250
1 Drawing Surveying and Architectural Master	300	300
1 Asst Drawing Master	80	80
1 do do	"	40
1 Lecturer on Natural Philosophy	"	100
1 Professor of Geology and Chemistry	"	350
1 Officer in charge of Non Commissioned Officers	60	60
3 Moonshees	90	90
Scholarships	350	350
College allowance to 30 Non Commissioned Officers and Soldiers	300	300
General Establishment	165	165
Rent of College Buildings	200	200
Lodging allowance	85	85
Total	3080	3670

The Right
Honorable the Governor
in Council has no objection
to

to offer to the establishment proposed for the College, as modified by Mr Arbuthnot, and as it falls short of the scale originally submitted to the Government of India and generally approved by them in their Letter of the 12th January 1838 I am desired to recommend that it may be sanctioned at a total eventual cost of Rupees ~~3665~~ 3670 per mensem, of which an expenditure of only Rupees ~~2995~~ 3080 will be incurred at present, as opportunities of obtaining qualified teachers may offer, and the necessities of the institution may become apparent.

It will be observed that Lieut Winscom does not propose to divide the College into Departments or Classes, as at Rookee, with reference to the class of certificates for which the several students may seek to qualify themselves, this plan apparently, as understood by Mr Arbuthnot, is "that every branch of instruction shall be open to every "student in the College, irrespectively of the particular "branch of the Public Works "Department or of Engineering "work generally for which he "may be seeking to qualify "himself" Mr Arbuthnot thinks however that an arrangement similar to that obtaining at Roorkee, will eventually come into operation in the Madras College but he adds that, until some experience has been gained of the working of Lieut Winscom's scheme, he

he is not prepared to recommend any alteration of it in this respect. In this determination I am desired to state, the Governor in Council concurs.

I have &c.

Fort St. Geo:
5th January 1858

25 1/89 Rlt

Public Works 1858 Dept.
Dy. to Cons. 8th January.

No. 3.

To The Secretary to the
Govt. of India.
Dated 5th Jany. 58.

From the Dy. 6th May 58. R. 1122 in Con
22d June 58 R. 62-63

Observing that this Govt.
have no objection to offer to the
Establishment proposed for the
Madras Engineering College, as
modified by Mr. Arbuthnot; and,
as it falls short of the scale ori-
ginally submitted to the Govt. of
India, and generally approved by
them, recommending that the Estab-
lishment may be sanctioned, at
a total eventual cost of £3470
per mensem.

No 5.

Govt. Dept. Public Works.