

Educational (~~189~~¹⁹⁰⁰) Department.

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[Despatch Abstract.]

College of Engineering, Madras

Abolishing the artisan class at the
with effect from the 1st Jan'y 1901.

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

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Government {1900} of Madras. EDUCATIONAL.

Recd.

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} 1900.

Enclosures

Spare copies

G.O., No. 573, 8th November 1900.

NOVEMBER.

College of Engineering, Madras.

Abolishing the artisan class at the — with effect from 1st January 1901.

GOVERNMENT OF MADRAS.

EDUCATIONAL DEPARTMENT.

Read—the following papers :—

From the Hon'ble Mr. G. H. STUART, M.A., Barrister-at-Law, Director of Public Instruction, Madras, to the Secretary to Government, Educational Department (through the Chief Engineer, Public Works Department), dated 21st August 1900, No. 8328.

I have the honour to submit the correspondence noted in the margin relating

- (1) Chief Engineer's letter, No. 2856-C, dated 22nd June 1899.
- (2) Letter from the Acting Principal, College of Engineering, No. 318-C, dated 13th July 1899.
- (3) Letter from the Superintendent, School of Arts, No. 1691, dated 28th July 1899.
- (4) Letter from the Chief Engineer, No. 1004-D, dated 26th August 1899.
- (5) Letter from the Acting Principal, College of Engineering, No. 494-C, dated 14th September 1899, together with its enclosure.
- (6) Letter from the Principal, College of Engineering, No. 1277-C, dated 24th November 1899.

to a proposal to abolish the artisan class at the College of Engineering. A careful perusal of the correspondence has led me to the conclusion that the class is serving no useful purpose and that it is a hindrance to the other work of the college. I, therefore, recommend that it be abolished with effect from January 1st, 1901.

2. The first suggestion of such a class was made in connection with a proposal to remodel the Engineering College on the lines of the Bengal Engineering College at Howrah, made in Colonel Macdonald's letter, No. 2582, dated 4th June 1880, read in G.O., No. 361, Educational, dated 23rd September 1880. The proposal was intended to make the teaching at the Engineering College much more practical than it had been and in commenting on it Colonel Sankey, then Chief Engineer, suggested that the college should undertake the training of maistries. (See paragraph 19 of Colonel Sankey's letter read in the above Government Order.)

3. The whole question of the reorganization of the college was referred by Government to a committee, whose report is contained in G.O., No. 61, dated 26th April 1882. Article 31 of the report says: "The committee are of opinion that the establishment of a maistry class for the instruction of artisans and mechanics in rough mechanical drawing, arithmetic, English and the mechanical powers would be advantageous." The proposals were referred to certain Engineers of the Public Works Department, whose opinions will be found in G.O., No. 313, dated 10th October 1882; most of them disapproved of the committee's proposal to train maistries at the college.

4. The main part of the scheme drawn up by the committee was rejected in G.O., No. 235, dated 24th April 1883; but in the code of rules for the college drawn up in accordance with G.O., No. 670, dated 4th October 1883, and published in G.O., No. 443, dated 16th July 1885, provision was made for a class for sub-overseers, maistries and artisans, admission to which was limited to a selected number of the sons of artisans or maistries, or of youths who had had practical training in some of the building trades. Rule V (5) stated "the courses of study shall be arithmetic, elementary

geometry, mensuration, scales, plan-drawing, elements of engineering. No examinations will be held, but a certificate of attendance shall be given by the Principal after a minimum period of one year's regular study. The instruction shall be given in Tamil and Telugu; the class shall be an evening one." Owing to want of staff and accommodation the class was not actually opened until February 1889; it has been held every year since then, the attendance being generally about forty. The course was slightly modified in the revised rules of 1898, surveying and estimating being added and elementary geometry being omitted. Those rules, moreover, say that students are expected to appear for the elementary grade of the Government Technical examinations.

5. In July 1898, Mr. Davidson, the Acting Principal of the college, being short-handed, closed the artisan class temporarily; and in reporting this he took the opportunity to recommend that the class should be abolished, or at least wholly dissociated from the College of Engineering. "The artisan class", he said, "should not, properly speaking, be attached to the college at all. If properly worked and taught, this class is one which should find its true place in a technical school. In this college the instruction given is not, I think, sufficiently practical to turn out a really good maistry; while, it is sufficiently theoretical to turn out a sort of half-taught surveyor. The need for this class at the college ceased when the sub-overseer and surveyor class was organized on its present lines, and it should then have been transferred to the School of Arts as a class which required good sound practical instruction in technical subjects, viz., brickwork and carpentry. The class is, I think, distinctly out of place in a College of Engineering."

6. Dr. Duncan sanctioned the temporary closing of the class, but decided that it should continue till the end of the year, so that the question of its retention or abolition could be properly considered. He afterwards decided that it should be continued during 1899.

7. In May 1899 he wrote to the Chief Engineer for his opinion. That officer agreed that the class as at present constituted is practically useless, and suggested a modified curriculum. Mr. Davidson, while stating that the proposed curriculum could not be carried out at the college, took occasion to say, "I am perfectly certain that a student of this class who in after life becomes a good artisan, becomes so in spite of and not because of his attendance at the class. No such class exists at Poona, Sibpur or Roorkee." Finally, the Chief Engineer, in his letter, No. 1004-D, dated 26th August 1899, gave as his opinion (1) that the class should be abolished as it serves no useful purpose, (2) that a new class should be constituted and tried for a year or two in connection with the college, the class to be limited to fifteen such men as wish to qualify as maistries or artisans, and the instruction to include, among other things, practical teaching in masonry, carpentry, smithy work, &c. Mr. Davidson, Mr. Chatterton and Lieutenant-Colonel Love are all agreed that it is impossible to work such a class at the College of Engineering except at inordinate cost and with a great waste of material; and that if the Public Works Department requires men trained in this way the training should be given by the Public Works Department itself by attaching a class to the Consulting Architect's division.

8. In these circumstances, I consider that the question of starting the new class suggested by the Chief Engineer will have to be dropped for the present.

9. The following are some of the reasons against the continuance of the artisan class :—

(1) True artisans have never been attracted to the college in any large number, as will be seen from the fact that out of 126 students, who joined the class during the past three years, only 18 were artisans or sons of artisans.

(2) The range of subjects prescribed is far too extensive to be completely gone through within the short space of eight months, excluding holidays and vacations, and the instruction imparted has necessarily to be mostly theoretical and of a superficial character.

(3) The withdrawal of one of the regular members of the staff for work in the artisan class, has told upon the work of the other classes and has thrown additional strain on the other instructors.

(4) The development of the late surveyor class into a class for sub-overseers and surveyors has dispensed with the necessity for a class for maistries and artisans, as the curriculum for the former covers a much wider ground than that for the latter, and as men of a better type are, thus, available for the subordinate ranks of the Public Works Department.

10. All the officers consulted are in favour of abolishing the present artisan class and I support the proposal for its discontinuance. Should Government be pleased to approve of my recommendation, I shall submit a draft of the changes to be carried out in the rules of the college.

ENCLOSURES.

From W. B. DEWINTON, Esq., Chief Engineer, Public Works Department, to the Director of Public Instruction, dated Madras, 22nd June 1899, No. 2856-C.

I have the honour to acknowledge the receipt of your letter, No. 5577, dated 19th May 1899, and, in reply, to state that, before answering your question, I should like to be favoured with information on the following points:—

(1) The number, parentage and occupation of the members of the artisan class during the last three years, and also, if possible, what became of them after leaving it.

(2) Whether, if the curriculum of the class was extended as described below, as I think it ought to be, if it is to be of any real service, it should properly be attached to the College of Engineering or to the School of Arts. I ask this question because I do not know what facilities the School of Arts has, or may be given, for conducting such a class.

Curriculum.

(a) To train young men who are, or wish to be, maistries or artisans, in practical brick-laying, masonry, carpentry, &c.

(b) To teach such young men the elements of arithmetic, mensuration, plan-drawing and estimating.

The class to meet daily for the same hours as the College of Engineering or the School of Arts for a year, and to be examined at the close of it in both (a) and (b) above.

Prizes and certificates to be given in accordance with the result of the examination.

(3) Whether the other Engineering Colleges of India have such a class attached to them, and, if so, what its formation and curriculum is.

2. I quite agree with Mr. Davidson that the class as formed at present, i.e., meeting for an hour at night for instruction in arithmetic, &c., is practically useless, and that reform of some kind is needed.

No. 7518.

Forwarded to the Principal, College of Engineering, for favour of early report and return.

(Signed) D. DUNCAN,
Director of Public Instruction.

7th July 1899.

From J. P. DAVIDSON, Esq., Acting Principal, College of Engineering, Madras, to the Director of Public Instruction, dated 13th July 1899, No. 318-C.

I have the honour to reply to the letter from the Chief Engineer, Public Works Department, forwarded with your No. 7518, dated 7th July 1899.

(1) I attach a statement showing the number of students in the artisan class during each of the years 1896, 1897 and 1898, with the occupation of the parents or guardians, but to collect and submit the further information asked for by the Chief Engineer will take much time, and the information when collected will be unreliable and, to a great extent, worthless.

(2) With regard to this, I would ask a perusal of the syllabus of the artisan class as laid down in the college calendar of 1899 (copy herewith sent).

The subjects are—

I. Arithmetic.

II. Mensuration.

III. Building Materials and Construction—

(a) Materials.

(b) Construction.

IV. Plan-drawing and Estimating—

(1) Preliminary.

(2) Buildings.

(3) Earthwork.

(4) Bridges.

V. Surveying.

This syllabus errs in the direction of being far too extensive, and I think it is hardly necessary for me to point out that a class of 45 students working from 6 P.M. to 8 P.M. for five days in the week, for the limited period of eight months, are not likely to get through the programme of work laid down.

For an artisan, whether he intends to be a bricklayer or a carpenter, an ounce of practice is worth tons of theory; in the college there is no means of giving the class any practical instruction whatsoever. Personally I consider that every subject in the present syllabus might be considerably curtailed.

Subject III.—Both (a) and (b) can only be satisfactorily taught if means are available for combining book-work or lecture-room teaching with practical instruction.

Subject IV.—Many of the sub-heads are such as a maistry has no concern with.

Subject V.—If taught at all, should be taught very thoroughly to the extent decided on.

2. It has been freely admitted that the staff of the college is not strong enough to cope with the work it has to do, and some strengthening of the staff has been sanctioned in G.O., No. 383, Educational, dated 23rd June 1899. The proposals for increase of staff, with which this Government Order deals, were submitted before I had realised how greatly the existence of the artisan class hampers the existing staff and saps its efficiency. The artisan class is held from 6 P.M. to 8 P.M.; from the point of view of the staff of the college, a most objectionable time. As the class is, as it were, an excrescence and outcrop for which no proper provision was at the time made, the only way of meeting its requirements is, to take away a member of the college staff from what I submit is his legitimate work, viz., supervising the work of, or lecturing to, the bona fide college students, and tell him off to look after the artisan class. To give effect to this arrangement, it is necessary, in framing the table of work for the session, to free from two or three attendances, either in the morning or afternoon, of the day in which he takes the artisan class, the assistant instructor whose duty it is to lecture to this class. That the students of the several legitimate classes, from the draftsman classes upwards, suffer by this arrangement is only too evident, and it must be remembered that they pay good fees for good instruction; whether, on the other hand, the artisan class which, in my opinion, is at present maintained at the expense of the general body of the college students, justifies its existence is a point on which I am most sceptical. I am perfectly certain that the student of this class who in after life becomes a good artisan, becomes so in spite of and not because of his attendance at the class. Comparing the syllabus laid down by the college with the curriculum suggested by the Chief Engineer, I do not think there need be much difficulty in arriving at a reasonable course of instruction, but the crux of the whole question is the practical instruction, and how and where this is to be given.

3. If the class is to continue in the college, I am strongly of opinion that its requirements should be met by the appointment of a practical instructor, capable of dealing with all the subjects of the course; further, the class should be limited to a maximum of fifteen students—this being a manageable number, they could be distributed on works under the Consulting Architect, and in this way, with a qualified instructor responsible for them, it might be possible to combine practice and theory in a way which would give satisfactory results.

4. The examinations and prizes suggested by the Chief Engineer will naturally cost money, but as the one would be a test of the work done, and the other would be an inducement to do good work, a reasonable expenditure might well be accepted as inevitable.

5. No class, in any sense corresponding to the artisan class of this college, exists at either Poona, Sibpur or Roorkee, and I submit that, it is asking too much of one and the same staff of instructors, to turn out, from one and the same institution, everything from the capable artisan to the fully-equipped and up-to-date Engineer.

6. The proper place without doubt for the artisan and maistry class is at a technical institute, such as the School of Arts, and if there is no means of giving good practical training and teaching there, it is equally impossible to give it at this college except on some such lines as those sketched out above. The artisan class, as it now exists, serves no good purpose, and its abolition while doing no harm, might do some little good.

Artisan Class.

Year.	Number of students	Occupation of parents or guardians.					
		Officials.	Traders.	Land-holders.	Artisans.	Coolies.	Others.
1896	37	33	1	2	1	..	..
1897	44	19	..	12	9	1	3
1898	45	13	5	9	8	..	10
Total							

N.B.—The general principle on which students are selected is to give a preference to those who are connected with the building trades, or are connected with Public Works Department or Local Fund subordinates, it is seldom if ever that a preferred artisan with any practical knowledge of work applies for admittance to the class.

From W. D. PORTERFIELD, Esq., Superintendent, School of Arts, Madras, to the Director of Public Instruction, dated 28th July 1899, No. 1691.

With reference to your official memorandum, No. 8276, dated 24th July 1899, I have the honour to state that, owing to the present congested state of the School of Arts, it is only with great difficulty that space can be found to accommodate the classes at present existing here.

Under these circumstances I do not think it would be possible to accommodate here such a class as the present artisan class held at the College of Engineering.

From W. B. DEWINTON, Esq., Chief Engineer, Public Works Department, to the Director of Public Instruction, dated Ootacamund, 26th August 1899, No. 1004-D.

I have the honour to acknowledge the receipt of your letter, No. 8952, dated 10th August 1899, and to reply as follows to the question raised in your letter, No. 5577 of 19th May last, as to whether it is desirable to continue the present artisan class in the College of Engineering.

I consider—

(1) That the class as at present constituted should be abolished as it serves no useful purpose.

(2) That a trial should be made for a year or two, if Government will provide funds, of a new class to be constituted as shown below:—

(a) That this class should be attached to the College of Engineering and be under the general supervision of the Principal.

(b) That it should be composed only of such men as wish to qualify as maistries and artisans.

(c) That the number should be limited to fifteen.

(d) That the class should be under the immediate charge of an instructor competent to teach the whole curriculum.

(e) That the curriculum should be—

(i) Practical teaching in masonry, brickwork, concrete, plastering, pointing, painting, carpentry, joinery, smithy work, either in a workshop specially provided or on some work in progress under the Consulting Architect.

(ii) Teaching in simple arithmetic and mensuration, in drawing and estimating for simple earth and masonry works in connection with buildings, roads and irrigation.

(f) That the course should last for a year and should close with an examination for prizes and certificates.

2. The hours of attendance may be settled by the Principal, also the question whether the instructor should devote his whole time to the work of this class or be available for a portion of each day for instruction in the college. The difficulty would be to find a man competent to teach the whole curriculum. Probably a Military Supervisor, 2nd grade, of eight years' service in the department, would answer the purpose fairly well.

Endt. No. 9840.

Referred to the Principal, College of Engineering, for remarks and return.

31st August 1899.

(Signed) D. DUNCAN,
Director of Public Instruction.

From J. P. DAVIDSON, Esq., Acting Principal, College of Engineering, Madras, to the Director of Public Instruction, dated 14th September 1899, No. 494-C.

I have the honour to return the letter of the Chief Engineer, Public Works Department, received with your endorsement, No. 9840, dated 31st August 1899. I forward copy of Mr. Chatterton's criticism on the proposals and must confess I am quite in agreement with Mr. Chatterton when he says that any attempt to establish a class of the character described in connection with this college under existing arrangements must be a failure. The college has at present no facilities whatever for giving the practical instruction asked by the Chief Engineer. Beyond workshop and field surveying, no practical work is taught in the college to the students of the Engineer and Engineer Subordinate classes, and this, because there are no means available for giving practical instruction. Consequently, for a class, to receive instruction on the lines asked for by the Chief Engineer, very special arrangements would have to be made, and some considerable expenditure incurred.

2. I think I am justified in saying that an institution, such as the College of Engineering, is hardly the place where the technical instruction of artisans and maistries should be undertaken; but if it is decided that this should be so, then the constitution of the class and the methods of instruction in the various branches of work will require to be very carefully thought out. Mr. Chatterton, who has given a good deal of thought to the subject, showed me various syllabuses of work, as carried on in workmen's classes at home; these may be considered too elaborate for what is aimed at here, still even a modification of any one of these methods means expenditure of money, and before any further steps are taken, it would be as well to ascertain if Government are prepared to spend money on a class for artisans and maistries. The fee paid by each student is Re. 1 per mensem, therefore with fifteen students, the sum available in fees will be Rs. 15 × 12 = Rs. 180, barely enough to meet the cost of one month's salary of the class of instructor suggested by the Chief Engineer.

3. There are two ways of looking at the question—(1) the larger view, viz., that of educating men of the artisan class generally in the technicalities of their trades, as bricklayers, carpenters, fitters, &c., for the benefit of the public, and (2) that of educating bricklayers for the special purpose of meeting the requirements of the Public Works Department. The first comes clearly under the head of technical education and Mr. Chatterton, if called on, would be perfectly ready and willing to submit a scheme on the lines of those adopted at home for giving instruction to the artisan class. The cost of this scheme will necessarily have to be borne by Government.

The second case, that of educating for the needs of the Public Works Department, is one that, in my opinion, can best be provided for by the Public Works Department itself, supposing always that Government is willing to meet the cost. To the Consulting Architect's division should be attached a subordinate of the standing and capabilities described by the Chief Engineer whose business it should be to practically train in their trade of mason and carpenter a limited number of men who at the end of 1 year or 18 months would be quite capable of laying out a work, knowing good work from bad and be sufficiently acquainted with the principles of building to make really useful reliable maistries.

4. The college as a college with its four classes, viz., draftsman, surveyor and sub-overseer, Engineer Subordinate, and Engineer, has quite as much to do as it can manage with any justice to itself.

From A. CHATTERTON, Esq., Professor of Engineering, College of Engineering, Madras, to the Principal, College of Engineering, dated 5th September 1899, No. 56-W.

In returning the Chief Engineer's letter, No. 1004-D, I have the honour to state that I am completely in agreement with him in thinking that the artisan class, as at present constituted, should be abolished, but I am also of opinion that it is impossible to establish in connection with the College of Engineering a class such as that proposed by Mr. deWinton, and that if any such attempt were made, I am certain it would be a failure. Educational institutions are utterly unable to provide a practical training for Civil Engineering Subordinates except at inordinate cost.

It is impossible to give practical instruction in masonry work without hundreds of cubic feet of cut stone and a man will have to build a few hundred yards of brickwork before he will know much about it. Concrete can only be made on a large scale and joinery is taught in workshops like that of Messrs. Deschamps & Co. or in the Public Works Workshops. Carpentry and smith's work could be taught here, yet the time available for teaching is utterly inadequate, and it would be impossible to have an independent class, under an independent instructor in the existing workshops.

The Engineering College has already far too many classes, and I venture to hope that no more additions to them will be made.

From Lieutenant-Colonel H. D. LOVE, Principal, College of Engineering, Madras, to the Director of Public Instruction, dated 24th November 1899, No. 1277-C.

Referring to your official memorandum No. 12769, dated 16th November 1899, I have the honour to state that I agree generally in the views expressed by Mr. Davidson and Mr. Chatterton regarding the artisan class.

2. The class was first formed in 1889, the idea being to attract persons who were engaged in handicrafts during the day-time, and to impart to them in the evenings some knowledge of arithmetic, geometry, mensuration and elementary plan-drawing. It was hoped that, by these means, a better educated and more intelligent type of men might be obtained to serve as maistries in the Public Works Department and elsewhere.

3. True artisans have never been attracted to the class in any numbers, and the class has therefore failed in its object. It has, however, always been popular, and the applications for admission have ever been far in excess of the limits of 40 or 45 laid down. Presumably then it meets a want of some kind. Nothing is known of the artisan students who have finished their course, but it is probable that the attendance certificate they carry away with them assists them to secure employment of some sort. The scope of the course has been extended since the formation of the class, so as to include elementary building, construction and surveying. Practical surveying work is done in the mornings.

4. The class has always been a source of inconvenience to the college. The instruction given is of necessity of a superficial character, and members of the staff are withdrawn from their legitimate duties to teach the artisan students. I agree with Mr. Davidson and Mr. Chatterton that the class should be abolished.

5. As regards the Chief Engineer's proposals for the development of this class, I consider that they could not be carried out by the college. The practical teaching in masonry, brickwork, concrete, plastering, pointing and painting could not be given in this institution without huge waste of material. A special instructor would be required, and for the in-door part of the course an additional room would be needed. Mr. Chatterton does not say whether the School of Arts could, in his opinion, give the desired training; but Mr. Davidson thinks that the Consulting Architect's division would form the best school for the training of men required by the Public Works Department as maistries. The College of Engineering is not, I consider, the proper place for such training. The four distinct standards and kinds of training embraced in the Engineer, Engineer Subordinate, sub-overseer, surveyor and draftsman classes are already more than we can properly meet with our present staff and buildings.

No. 1517 D.

Forwarded to the Educational Department with the remark that, in the circumstances detailed by Messrs. Chatterton and Davidson, the undersigned concurs in the proposal to abolish the artisan class at the College of Engineering.

2. An attempt will be made in the department to make arrangements for the instruction and training of maistries to be employed in the Public Works Department.

10th October 1900.

(Signed) W. B. DEWINTON,
Chief Engineer. P. W. Dept.

ORDER—No. 573, Educational, dated 8th November 1900.

In the circumstances stated, the Government approves of the proposal to abolish the artisan class at the College of Engineering with effect from 1st January 1901.

(True Extract.)

M. HAMMICK,
Ag. Secretary to Government.

To the Director of Public Instruction.
„ Public Works Department.

Exd. P. Seetharam.

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3. The whole question of the reorganization of the college was referred by Government to a committee, whose report is contained in G.O., No. 61, dated 26th April 1882. Article 31 of the report says: "The committee are of opinion that the establishment of a maistry class for the instruction of artisans and mechanics in rough mechanical drawing, arithmetic, English and the mechanical powers would be advantageous." The proposals were referred to certain Engineers of the Public Works Department, whose opinions will be found in G.O., No. 313, dated 10th October 1882; most of them disapproved of the committee's proposal to train maistries at the college.

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5. In July 1898, Mr. Davidson, the Acting Principal of the college, being short-handed, closed the artisan class temporarily; and in reporting this he took the opportunity to recommend that the class should be abolished, or at least wholly dissociated from the College of Engineering. "The artisan class", he said, "should not, properly speaking, be attached to the college at all. If properly worked and taught, this class is one which should find its true place in a technical school. In this college the instruction given is not, I think, sufficiently practical to turn out a really good maistry; while, it is sufficiently theoretical to turn out a sort of half-taught surveyor. The need for this class at the college ceased when the sub-overseer and surveyor class was organized on its present lines, and it should then have been transferred to the School of Arts as a class which required good sound practical instruction in technical subjects, viz., brickwork and carpentry. The class is, I think, distinctly out of place in a College of Engineering."

6. Dr. Duncan sanctioned the temporary closing of the class, but decided that it should continue till the end of the year, so that the question of its retention or abolition could be properly considered. He afterwards decided that it should be continued during 1899.

7. In May 1899 he wrote to the Chief Engineer for his opinion. That officer agreed that the class as at present constituted is practically useless, and suggested a modified curriculum. Mr. Davidson, while stating that the proposed curriculum could not be carried out at the college, took occasion to say, "I am perfectly certain that a student of this class who in after life becomes a good artisan, becomes so in spite of and not because of his attendance at the class. No such class exists at Poona, Sibpur or Roorkee." Finally, the Chief Engineer, in his letter, No. 1004-D, dated 26th August 1899, gave as his opinion (1) that the class should be abolished as it serves no useful purpose, (2) that a new class should be constituted and tried for a year or two in connection with the college, the class to be limited to fifteen such men as wish to qualify as maistries or artisans, and the instruction to include, among other things, practical teaching in masonry, carpentry, smithy work, &c. Mr. Davidson, Mr. Chatterton and Lieutenant-Colonel Love are all agreed that it is impossible to work such a class at the College of Engineering except at inordinate cost and with a great waste of material; and that if the Public Works Department requires men trained in this way the training should be given by the Public Works Department itself by attaching a class to the Consulting Architect's division.

8. In these circumstances, I consider that the question of starting the new class suggested by the Chief Engineer will have to be dropped for the present.

9. The following are some of the reasons against the continuance of the artisan class:—

(1) True artisans have never been attracted to the college in any large number, as will be seen from the fact that out of 126 students, who joined the class during the past three years, only 18 were artisans or sons of artisans.

(2) The range of subjects prescribed is far too extensive to be completely gone through within the short space of eight months, excluding holidays and vacations, and the instruction imparted has necessarily to be mostly theoretical and of a superficial character.

(3) The withdrawal of one of the regular members of the staff for work in the artisan class, has told upon the work of the other classes and has thrown additional strain on the other instructors.

(4) The development of the late surveyor class into a class for sub-overseers and surveyors has dispensed with the necessity for a class for maistries and artisans, as the curriculum for the former covers a much wider ground than that for the latter, and as men of a better type are, thus, available for the subordinate ranks of the Public Works Department.

10. All the officers consulted are in favour of abolishing the present artisan class and I support the proposal for its discontinuance. Should Government be pleased to approve of my recommendation, I shall submit a draft of the changes to be carried out in the rules of the college.

ENCLOSURES.

From W. B. DEWINTON, Esq., Chief Engineer, Public Works Department, to the Director of Public Instruction, dated Madras, 22nd June 1899, No. 2856-C.

I have the honour to acknowledge the receipt of your letter, No. 5577, dated 19th May 1899, and, in reply, to state that, before answering your question, I should like to be favoured with information on the following points:—

(1) The number, parentage and occupation of the members of the artisan class during the last three years, and also, if possible, what became of them after leaving it.

(2) Whether, if the curriculum of the class was extended as described below, as I think it ought to be, if it is to be of any real service, it should properly be attached to the College of Engineering or to the School of Arts. I ask this question because I do not know what facilities the School of Arts has, or may be given, for conducting such a class.

Curriculum.

(a) To train young men who are, or wish to be, maistries or artisans, in practical brick-laying, masonry, carpentry, &c.

(b) To teach such young men the elements of arithmetic, mensuration, plan-drawing and estimating.

The class to meet daily for the same hours as the College of Engineering or the School of Arts for a year, and to be examined at the close of it in both (a) and (b) above.

Prizes and certificates to be given in accordance with the result of the examination.

(3) Whether the other Engineering Colleges of India have such a class attached to them, and, if so, what its formation and curriculum is.

2. I quite agree with Mr. Davidson that the class as formed at present, i.e., meeting for an hour at night for instruction in arithmetic, &c., is practically useless, and that reform of some kind is needed.

No. 7518.

Forwarded to the Principal, College of Engineering, for favour of early report and return.

(Signed) D. DUNCAN,
Director of Public Instruction.

7th July 1899.

From J. P. DAVIDSON, Esq., Acting Principal, College of Engineering, Madras, to the Director of Public Instruction, dated 13th July 1899, No. 318-C.

I have the honour to reply to the letter from the Chief Engineer, Public Works Department, forwarded with your No. 7518, dated 7th July 1899.

(1) I attach a statement showing the number of students in the artisan class during each of the years 1896, 1897 and 1898, with the occupation of the parents or guardians, but to collect and submit the further information asked for by the Chief Engineer will take much time, and the information when collected will be unreliable and, to a great extent, worthless.

(2) With regard to this, I would ask a perusal of the syllabus of the artisan class as laid down in the college calendar of 1899 (copy herewith sent).

The subjects are—

I. Arithmetic.

II. Mensuration.

III. Building Materials and Construction—

(a) Materials.

(b) Construction.

IV. Plan-drawing and Estimating—

(1) Preliminary.

(2) Buildings.

(3) Earthwork.

(4) Bridges.

V. Surveying.

This syllabus errs in the direction of being far too extensive, and I think it is hardly necessary for me to point out that a class of 45 students working from 6 p.m. to 8 p.m. for five days in the week, for the limited period of eight months, are not likely to get through the programme of work laid down.

For an artisan, whether he intends to be a bricklayer or a carpenter, an ounce of practice is worth tons of theory; in the college there is no means of giving the class any practical instruction whatsoever. Personally I consider that every subject in the present syllabus might be considerably curtailed.

Subject III.—Both (a) and (b) can only be satisfactorily taught if means are available for combining book-work or lecture-room teaching with practical instruction.

Subject IV.—Many of the sub-heads are such as a maistry has no concern with.

Subject V.—If taught at all, should be taught very thoroughly to the extent decided on.

2. It has been freely admitted that the staff of the college is not strong enough to cope with the work it has to do, and some strengthening of the staff has been sanctioned in G.O., No. 383, Educational, dated 23rd June 1899. The proposals for increase of staff, with which this Government Order deals, were submitted before I had realised how greatly the existence of the artisan class hampers the existing staff and saps its efficiency. The artisan class is held from 6 p.m. to 8 p.m.; from the point of view of the staff of the college, a most objectionable time. As the class is, as it were, an excrescence and outcrop for which no proper provision was at the time made, the only way of meeting its requirements is, to take away a member of the college staff from what I submit is his legitimate work, viz., supervising the work of, or lecturing to, the *bonâ fide* college students, and tell him off to look after the artisan class. To give effect to this arrangement, it is necessary, in framing the table of work for the session, to free from two or three attendances, either in the morning or afternoon, of the day in which he takes the artisan class, the assistant instructor whose duty it is to lecture to this class. That the students of the several legitimate classes, from the draftsman classes upwards, suffer by this arrangement is only too evident, and it must be remembered that they pay good fees for good instruction; whether, on the other hand, the artisan class which, in my opinion, is at present maintained at the expense of the general body of the college students, justifies its existence is a point on which I am most sceptical. I am perfectly certain that the student of this class who in after life becomes a good artisan, becomes so in spite of and not because of his attendance at the class. Comparing the syllabus laid down by the college with the curriculum suggested by the Chief Engineer, I do not think there need be much difficulty in arriving at a reasonable course of instruction, but the crux of the whole question is the practical instruction, and how and where this is to be given.

3. If the class is to continue in the college, I am strongly of opinion that its requirements should be met by the appointment of a practical instructor, capable of dealing with all the subjects of the course; further, the class should be limited to a maximum of fifteen students—this being a manageable number, they could be distributed on works under the Consulting Architect, and in this way, with a qualified instructor responsible for them, it might be possible to combine practice and theory in a way which would give satisfactory results.

4. The examinations and prizes suggested by the Chief Engineer will naturally cost money, but as the one would be a test of the work done, and the other would be an inducement to do good work, a reasonable expenditure might well be accepted as inevitable.

5. No class, in any sense corresponding to the artisan class of this college, exists at either Poona, Sibpur or Roorkee, and I submit that, it is asking too much of one and the same staff of instructors, to turn out, from one and the same institution, everything from the capable artisan to the fully-equipped and up-to-date Engineer.

6. The proper place without doubt for the artisan and maistry class is at a technical institute, such as the School of Arts, and if there is no means of giving good practical training and teaching there, it is equally impossible to give it at this college except on some such lines as those sketched out above. The artisan class, as it now exists, serves no good purpose, and its abolition while doing no harm, might do some little good.

Artisan Class.

Year.	Number of students.	Occupation of parents or guardians.					
		Officials.	Traders.	Land-holders.	Artisans.	Coolies.	Others.
1896	37	33	1	2	1	..	..
1897	44	19	..	12	9	1	3
1898	45	13	5	9	8	..	10
Total	..	..	..	..	..	..	..

N.B.—The general principle on which students are selected is to give a preference to those who are connected with the building trades, or are connected with Public Works Department or Local Fund subordinates, it is seldom if ever that a preferred artisan with any practical knowledge of work applies for admittance to the class.

From W. D. PORTERFIELD, Esq., Superintendent, School of Arts, Madras, to the Director of Public Instruction, dated 28th July 1899, No. 1691.

With reference to your official memorandum, No. 8276, dated 24th July 1899, I have the honour to state that, owing to the present congested state of the School of Arts, it is only with great difficulty that space can be found to accommodate the classes at present existing here.

Under these circumstances I do not think it would be possible to accommodate here such a class as the present artisan class held at the College of Engineering.

From W. B. DEWINTON, Esq., Chief Engineer, Public Works Department, to the Director of Public Instruction, dated Ootacamund, 26th August 1899, No. 1004-D.

I have the honour to acknowledge the receipt of your letter, No. 8952, dated 10th August 1899, and to reply as follows to the question raised in your letter, No. 5577 of 19th May last, as to whether it is desirable to continue the present artisan class in the College of Engineering.

I consider—

- (1) That the class as at present constituted should be abolished as it serves no useful purpose.
- (2) That a trial should be made for a year or two, if Government will provide funds, of a new class to be constituted as shown below :—
 - (a) That this class should be attached to the College of Engineering and be under the general supervision of the Principal.
 - (b) That it should be composed only of such men as wish to qualify as maistries and artisans.
 - (c) That the number should be limited to fifteen.
 - (d) That the class should be under the immediate charge of an instructor competent to teach the whole curriculum.
 - (e) That the curriculum should be—
 - (i) Practical teaching in masonry, brickwork, concrete, plastering, pointing, painting, carpentry, joinery, smithy work, either in a workshop specially provided or on some work in progress under the Consulting Architect.
 - (ii) Teaching in simple arithmetic and mensuration, in drawing and estimating for simple earth and masonry works in connection with buildings, roads and irrigation.
 - (f) That the course should last for a year and should close with an examination for prizes and certificates.

2. The hours of attendance may be settled by the Principal, also the question whether the instructor should devote his whole time to the work of this class or be available for a portion of each day for instruction in the college. The difficulty would be to find a man competent to teach the whole curriculum. Probably a Military Supervisor, 2nd grade, of eight years' service in the department, would answer the purpose fairly well.

Endt. No. 9840.

Referred to the Principal, College of Engineering, for remarks and return.

(Signed) D. DUNCAN,
Director of Public Instruction.

31st August 1899.

From J. P. DAVIDSON, Esq., Acting Principal, College of Engineering, Madras, to the Director of Public Instruction, dated 14th September 1899, No. 494-C.

I have the honour to return the letter of the Chief Engineer, Public Works Department, received with your endorsement, No. 9840, dated 31st August 1899. I forward copy of Mr. Chatterton's criticism on the proposals and must confess I am quite in agreement with Mr. Chatterton when he says that any attempt to establish a class of the character described in connection with this college under existing arrangements must be a failure. The college has at present no facilities whatever for giving the practical instruction asked by the Chief Engineer. Beyond workshop and field surveying, no practical work is taught in the college to the students of the Engineer and Engineer Subordinate classes, and this, because there are no means available for giving practical instruction. Consequently, for a class, to receive instruction on the lines asked for by the Chief Engineer, very special arrangements would have to be made, and some considerable expenditure incurred.

2. I think I am justified in saying that an institution, such as the College of Engineering, is hardly the place where the technical instruction of artisans and maistries should be undertaken; but if it is decided that this should be so, then the constitution of the class and the methods of instruction in the various branches of work will require to be very carefully thought out. Mr. Chatterton, who has given a good deal of thought to the subject, showed me various syllabuses of work, as carried on in workmen's classes at home; these may be considered too elaborate for what is aimed at here, still even a modification of any one of these methods means expenditure of money, and before any further steps are taken, it would be as well to ascertain if Government are prepared to spend money on a class for artisans and maistries. The fee paid by each student is Re. 1 per mensem, therefore with fifteen students, the sum available in fees will be Rs. 15 × 12 = Rs. 180, barely enough to meet the cost of one month's salary of the class of instructor suggested by the Chief Engineer.

3. There are two ways of looking at the question—(1) the larger view, viz., that of educating men of the artisan class generally in the technicalities of their trades, as bricklayers, carpenters, fitters, &c., for the benefit of the public, and (2) that of educating bricklayers for the special purpose of meeting the requirements of the Public Works Department. The first comes clearly under the head of technical education and Mr. Chatterton, if called on, would be perfectly ready and willing to submit a scheme on the lines of those adopted at home for giving instruction to the artisan class. The cost of this scheme will necessarily have to be borne by Government.

The second case, that of educating for the needs of the Public Works Department, is one that, in my opinion, can best be provided for by the Public Works Department itself, supposing always that Government is willing to meet the cost. To the Consulting Architect's division should be attached a subordinate of the standing and capabilities described by the Chief Engineer whose business it should be to practically train in their trade of mason and carpenter a limited number of men who at the end of 1 year or 18 months would be quite capable of laying out a work, knowing good work from bad, and be sufficiently acquainted with the principles of building to make really useful reliable maistries.

4. The college as a college with its four classes, viz., draftsman, surveyor and sub-overseer, Engineer Subordinate, and Engineer, has quite as much to do as it can manage with any justice to itself.

From A. CHATTERTON, Esq., Professor of Engineering, College of Engineering, Madras, to the Principal, College of Engineering, dated 5th September 1899, No. 56-W.

In returning the Chief Engineer's letter, No. 1004-D, I have the honour to state that I am completely in agreement with him in thinking that the artisan class, as at present constituted, should be abolished, but I am also of opinion that it is impossible to establish in connection with the College of Engineering a class such as that proposed by Mr. deWinton, and that if any such attempt were made, I am certain it would be a failure. Educational institutions are utterly unable to provide a practical training for Civil Engineering Subordinates except at inordinate cost.

It is impossible to give practical instruction in masonry work without hundreds of cubic feet of cut stone and a man will have to build a few hundred yards of brickwork before he will know much about it. Concrete can only be made on a large scale and joinery is taught in workshops like that of Messrs. Deschamps & Co. or in the Public Work Workshops. Carpentry and smith's work could be taught here, yet the time available for teaching is utterly inadequate, and it would be impossible to have an independent class, under an independent instructor in the existing workshops.

The Engineering College has already far too many classes, and I venture to hope that no more additions to them will be made.

From Lieutenant-Colonel H. D. LOVE, Principal, College of Engineering, Madras, to the Director of Public Instruction, dated 24th November 1899, No. 1277-C.

Referring to your official memorandum No. 12769, dated 16th November 1899, I have the honour to state that I agree generally in the views expressed by Mr. Davidson and Mr. Chatterton regarding the artisan class.

2. The class was first formed in 1889, the idea being to attract persons who were engaged in handicrafts during the day-time, and to impart to them in the evenings some knowledge of arithmetic, geometry, mensuration and elementary plan-drawing. It was hoped that, by these means, a better educated and more intelligent type of men might be obtained to serve as maistries in the Public Works Department and elsewhere.

3. True artisans have never been attracted to the class in any numbers, and the class has therefore failed in its object. It has, however, always been popular, and the applications for admission have ever been far in excess of the limits of 40 or 45 laid down. Presumably then it meets a want of some kind. Nothing is known of the artisan students who have finished their course, but it is probable that the attendance certificate they carry away with them assists them to secure employment of some sort. The scope of the course has been extended since the formation of the class, so as to include elementary building, construction and surveying. Practical surveying work is done in the mornings.

4. The class has always been a source of inconvenience to the college. The instruction given is of necessity of a superficial character, and members of the staff are withdrawn from their legitimate duties to teach the artisan students. I agree with Mr. Davidson and Mr. Chatterton that the class should be abolished.

5. As regards the Chief Engineer's proposals for the development of this class, I consider that they could not be carried out by the college. The practical teaching in masonry, brickwork, concrete, plastering, pointing and painting could not be given in this institution without huge waste of material. A special instructor would be required, and for the in-door part of the course an additional room would be needed. Mr. Chatterton does not say whether the School of Arts could, in his opinion, give the desired training; but Mr. Davidson thinks that the Consulting Architect's division would form the best school for the training of men required by the Public Works Department as maistries. The College of Engineering is not, I consider, the proper place for such training. The four distinct standards and kinds of training embraced in the Engineer, Engineer Subordinate, sub-overseer, surveyor and draftsman classes are already more than we can properly meet with our present staff and buildings.

No. 1517 D.

Forwarded to the Educational Department with the remark that, in the circumstances detailed by Messrs. Chatterton and Davidson, the undersigned concurs in the proposal to abolish the artisan class at the College of Engineering.

2. An attempt will be made in the department to make arrangements for the instruction and training of maistries to be employed in the Public Works Department.

(Signed) W. B. DEWINTON,
Chief Engineer. P. W. Dept.

10th October 1900.

ORDER—No. 573, Educational, dated 8th November 1900.

In the circumstances stated, the Government approves of the proposal to abolish the artisan class at the College of Engineering with effect from 1st January 1901.

(True Extract.)

To the Director of Public Instruction.
,, Public Works Department.

Exd. P. Seetharam.

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