

# CANADIAN CONTRACT RECORD

A Weekly Journal of Advance Information and Public Works.

ITS PURPOSE: TO SUPPLY TO CONTRACTORS ADVANCE INFORMATION RESPECTING CONTRACTS OPEN TO TENDER, AND TO ARCHITECTS, ENGINEERS, MUNICIPAL AND OTHER CORPORATIONS, A DIRECT MEDIUM OF COMMUNICATION WITH CONTRACTORS.

ITS MERIT: ECONOMICAL AND EFFECTIVE SERVICE.

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## THE CANADIAN CONTRACT RECORD,

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Information solicited from any part of the Dominion regarding contracts open to tender.

### ADVERTISING RATES ON APPLICATION

At its Convention held in Toronto, Nov. 20, and 21, 1889, the Ontario Association of Architects signified its approval of the CANADIAN CONTRACT RECORD, and pledged its members to use this journal as their medium of communication with contractors with respect to advertisements for Tenders.

The following resolution was unanimously adopted at the First Annual Meeting of the Province of Quebec Association of Architects, held in Montreal, Oct. 10th and 11th, 1890: "Moved by M. Perrault, seconded by A. F. Dunlop, that we the Architects of the Province of Quebec now assembled in Convention being satisfied that the CANADIAN CONTRACT RECORD affords us a direct communication with the Contractors, Resolved, that we pledge our support to it by using its columns when calling for Tenders."

The publisher of the "Canadian Contract Record" desires to ensure the regular and prompt delivery of this Journal to every subscriber, and requests that any cause of complaint in this particular be reported at once to the office of publication. Subscribers who may change their address should also give prompt notice of same, and in doing so, should give both old and new address.

## TENDERS.

Tenders will be received by the undersigned up to 5 P.M. on

FRIDAY, THE 25TH INST.,

for a SEPARATE SCHOOL BUILDING at BROCKTON.

Each tender must be accompanied by a marked cheque, equal to 10 per cent. of its amount, made payable to the order of the Chairman of the Sites and Building Committee, cheque to be forfeited if the parties tendering fail to carry out the contract when called upon to do so. All tenders must bear the bona fide signatures of the contractor and his sureties, or they will not be entertained.

The plans and specifications can be seen on and after Thursday, the 17th inst., at the office of the undersigned.

POST & HOLMES, Architects,  
Manning Arcade, Toronto.

### TO CARPENTERS AND BUILDERS.

Young married man, thorough carpenter and stair-builder, competent to take off quantities, draw plans, etc., wants situation, at a reasonable salary. Apply Box 100, office CANADIAN ARCHITECT AND BUILDER.

### TENDERS WANTED.

Tenders will be received by the undersigned up to SATURDAY, THE 19TH INST., for the several trades required in the erection and completion of Heydon House, Toronto Junction. The lowest or any tender not necessarily accepted.

J. A. ELLIS, Architect,  
Peake's Block, Toronto Junction.

### THE INFLUENCE OF HEAT ON THE STRENGTH OF IRON.

Professor Martens, of Berlin, has published in the *Mitteilungen aus den Koeniglichen technischen Versuchsanstalten zu Berlin*, a report of some experiments on the strength of steel at various temperatures between 20 degrees C. and 600 degrees C. The material used consisted of mild steel, having a tensile strength of 23 tons, 27 tons and 30 tons per square inch. The bars from which the test pieces were cut were 1.5 inches in diameter and were thoroughly annealed. A number of bars of the same quality of metal were all tested in the usual way, both after annealing, and as received from the makers, so as to form a standard of comparison for the other bars. The temperature of the bars, is obtained by placing in a bath and testing them there. For the low temperature tests the baths was filled with a freezing mixture, and for the high temperature tests, with paraffin, up to 200 degrees C., beyond which alloys of lead and tin were used. The contents of the bath were warmed by gas jets, and stirred during the course of the experiments. The elongations of the bar up to the yield point were taken on a length of 8.1 inches by means of a mirror apparatus, the diameter of the tested portion being .79 inches, and autographic diagrams were also taken of each specimen. The results of the experiments showed that the elastic limit of the material became lower as the temperature rose, though the falling off was not very serious up to 200 degrees C., but beyond that point it lowers somewhat rapidly, and finally seems to disappear. The maximum stress decreases from 20 degrees C. up to 50 degrees C., but afterwards rapidly rises to a maximum somewhere between 200 degrees and 250 degrees C. Taking the strength of the specimen at 20 degrees C. as the maximum stress for the 23 ton steel is 1.34 greater, and the maximum breaking stress is 1.62. For the 27-ton steel the figures

are 1.27 and 1.45, and for the 30 ton steel 1.25 and 1.50. The contraction of area for all the specimen was least at about 300 degrees C.—*Engineering Record.*

### COVERING POWER.

Summarizing a long article on this subject, Dr. C. B. Dudley and F. N. Pease say:

First. As has already been discussed, the fineness has an important influence on the covering power, and this is entirely within the control of the paint manufacturer in his grinding. The finer he grinds the paint the greater the covering power of the paint, whatever the pigment he may use, and this applies, we think, equally well to the pigments which are inferior in covering power as well as those which are better in this respect.

Second.—We find by actual experiment that a certain percentage of pigment of good covering power, mixed with a certain percentage of pigment of inferior covering power, gives a resulting pigment which has almost as good covering power as the better one. We have been somewhat astonished at the results obtained. For example, 20 per cent. of zinc white with 80 per cent. of sulphate of lime, carefully and finely ground, will give very fair covering power, and in fact almost as good as all white zinc. The same thing seems to be approximately true of white lead and talc or white lead and barytics.

Third.—There is still another variable which can be made use of to improve the covering power in inferior pigments, and that is to diminish the amount of oil used when the paint is spread on a surface. A good paint has a ratio of pigment to liquid, when fit for spreading, of about one-third pigment to about two-thirds liquid by volume. This ratio may vary considerably either side of these figures, but this is an approximation based on quite a number of experiments. If now the volume of the pigment is increased in comparison to the volume of the oil, the covering power, all other things being the same, will be improved. The limit, of course, is the stiffness of the paint during application. We are, of course, assuming a paint in which there is very little turpentine. On the other hand, it is quite possible to mix a paint for spreading by using turpentine or some other volatile dilutant, so that when the paint is dry on the surface it will not have the ratio of one-third pigment and two-thirds oil, but possibly one-half pigment and one-half of dry oil, or even two-thirds pigment and one-third dry oil.