community who believe that it is only right to give local talent a fair opportunity to show what it can do. That such opportunity has been given in the last few years, no one who knows the facts will affirm. The erection of the Ontario Parliament Buildings was taken out of the hands of capable local talent, which was first placed in competition with firms from the United States, and given into the hands of the expert, who condemned the plans of Canadians without just or sufficient reasons.

Canadian talent has succeeded in competition with the local element in the United States; why cannot it do the same at home? Is it that a "prophet is not without honor save in his own country?" We are afraid that it must be so. We hear a great deal said about building up a "national spirit." How is this to be done when it is impossible for young men of talent to receive the reward to which they are entitled in their native country?

We would advise our architects to "put their best foot forward," and show that they have the ability to reach the top rung in the ladder of fame at home, as well as in a foreign country.

A model of the memorial statue to be erected at Port Hope to the memory of the late Col. Williams, has been prepared by Mr. Hamilton McCarthy, of this city, and has been approved of by a committee appointed by the Williams Memorial Association. The statue will be in bronze, of heroic size, mounted on a grey granite pedestal twelve feet high. It represents the Colonel with up-raised sword giving the word of command.

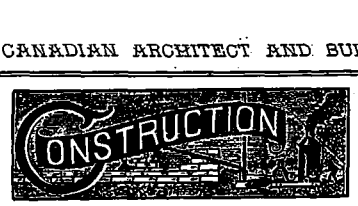
The London *Free Press* is of opinion that Canadian architects should turn their attention to designing houses in such a manner that the roofs could be utilized for recreation resorts by the occupants. Canada is a very large country, with a comparatively small population. There is as yet—nor is there likely to be for a century hence—no scarcity of fresh air or means of recreation for all requirements. Our contemporary could easily find some subject of more practical interest to discourse upon.

FLOWER-BEDS ON THE LAWN.

THE house is not wanted to stand in a flower-garden where everything else is sacrificed for the sake of a gorgeous display of gay colors. Besides, says the *Building Budget*, a bed of choice flowers look far more beautiful when standing well separated from other similar objects, either near the border of the walk or on the well-trimmed lawn where a group of dark foliage as a background gives relief to the bright and gay colors. Here they attract attention, while in the masses, the singles are lost. Too many flower-beds interfere with the effect of what is a more important feature on the limited surrounding of a suburban home, and that is the lawn, which should predominate. We introduce flowers not only for their individual beauty and enjoyment, but also for picturesque effects in connection with the house, and an adjunct to the lawn scenery, and effect. Such arrangements, beside producing great satisfaction to the occupants of a country home, add much to the cultivation of good taste; for few will pass by such a homestead without a pleasing reflection, and perhaps a desire to imitate similar effects on their own grounds. At a small outlay of money we can procure from most every nursery what is needed for such purposes. In fact, we can always find a desirable place for an evergreen or a shade tree near a dwelling.

TESTING FOR FOUNDATIONS.

IN connection with the building for the Paris Exhibition, a series of experiments have recently been carried out at the Champ de Mars, with a view to determine the resistence of the soil to concentrated loads, and in this way check the dimensions to be given to the foundations in different cases. A perfectly level surface in the form of a square of 113 feet side was first prepared, on which were placed four rectangular cast-iron blocks 1 foot 8 inches square, disposed so as to occupy the corner of a square, the distance apart being 11 feet 8 inches centre to centre, and these spaces were bridged by girders constructed of T irons. These girders were next loaded with T irons, the number and weight of which were carefully noted. At the end of 11 hours the weight on the girders had reached a total of 143,923 pounds, and indications of settlement became visible, the stress on the surface of the ground being at this moment 7,311 tons per square foot, in which is included the weight of the blocks and girders in addition to the above load. The experiment was then abandoned till the following day, when it was found that the settlement had increased during the night to an amount varying between 10⅝ inches and 11 inches. The experiment was now resumed and the load increased up to 202,776 pounds, at which the experiment was abandoned, as some of the blocks had then sunk completely out of sight, leaving the girders to be supported directly on the surface of the soil. The conclusions arrived at were that the ground at this spot is capable of resisting a load equivalent to 5.43 tons per square foot, that a certain amount of settlement may be expected when the stress reaches 7.31 tons per square foot, and that it is totally incapable of bearing a load amounting to 8.14 tons per square foot



MADISON AVENUE SEWER.

Editor CANADIAN ARCHITECT AND BUILDER.

SIR,—I wish you could stir up the authorities who are responsible for the tardy progress of Madison Avenue sewer, Toronto. The tenders for the work have been let long enough ago, and other streets that did not require sewers as badly have since then been accommodated. I am building there now, and would have built there a year ago, as would many others, if sewer, &c., had been in. I do not now suppose the block pavement will be down for another year.

Yours truly,

ONE INTERESTED.

ROBURITE.

UNDER the heading of "Hydro Carbon Explosives," the Midland Institute of Mining Engineers, in Great Britain have had presented to them valuable information and research into this new explosive. It is one of the group of explosives invented by Spreagel, a German, who claims for it less light in explosion, and greater force than any of the other explosives. Its composition is given, thus: Roburite—chloro-dinitro—benzol—$C_6 H_3 Cl (No\ 2)_2$ in which 3 atoms of hydrogen have been replaced by 7 atom of chlorine and 2 molecules of nitric peroxide (No. 2.) It has theoretically nine times the force of gunpowder, but practically it may be taken at 4-1 compared with powder.

The research carried out by several members, was with a view to ascertain how much flame was developed during explosion, a point of the highest importance in underground and mining work, where so much explosive matter is always present. In one series of experiments, coal gas was passed into a receiver containing 72 cubic feet, and contained an explosive mixture of 8 per cent. of gas to 92 of air. Roburite was fired in this apparatus several times without igniting the gas. With powder a violent explosion accompanied by large quantities of flame occurred. In a series of surface experiments, the most valuable was firing roburite in an old boiler shell, in which coal dust was kept in suspension by means of a fan. No ignition of the coal dust took place. In pit experiments, like results were obtained, and in one special case, a 9 in. hole 4 ft. 6 in. deep, charged with 105 grammes, a space of 2 feet was left between the charge and the tamping. A loud report was heard, the explosion was successful, no flame or spark could be perceived, nor was any inconvenience caused by the flames, even instantly after the explosion. The most surprising experiments were perhaps those made by a member of the Institute, who fired loose roburite (1) in an atmosphere of 1 oz. of coal gas to 8 oz. air, (2) under a layer of gunpower. (3) under a layer of gunpowder and fine coal dust mixed together, without an explosion taking place. Gunpowder fired under the conditions of No. 3 gave violent explosion and long tongue of flame.

As to the cost, from its increased power it appears to be as cheap as using powder. It does not seem to suffer in strength from being damped, its affinity for moisture is not stated beyond the expression that it ought to be kept in a dry place the same as gunpowder. If it succeeds in the English coal pits, we shall probably hear of it before long on this continent.

STEEL VERSUS WROUGHT IRON FOR BUILDING PURPOSES.

MR. C. L. STROBEL, Member of the American Society o Civil Engineers, gives the following opinion on the above subject which we find printed in the *Engineering & Building Record:* "I have read the article 'Steel versus Wrought Iron for Building Purposes' in the issue of March 17, and you are undoubtedly correct in the position you have taken. There is one element of economy, however, in favor of steel beams which was not mentioned. The lightest weight of 15-inch iron beams is 50 pounds per foot; whereas 15-inch steel beams are furnished weighing 32 pounds. The lightest weight of 12-inch iron beams is 42 pounds per foot; whereas 12-inch steel beams are furnished weighing 32 pounds, etc. If, therefore, a 12-inch 42-pound iron beam is required to carry a certain load, a 15-inch 42-pound steel beam can be substituted for it, giving not only greater strength, but much less deflection as well.

"The rolling of these light sections in iron is difficult and not very satisfactory.

"In connection with the question of safety of metal constructions for buildings, I wish to call your attention to the general use of cast iron for columns. Formerly loads carried by columns were generally light, and the section provided much in excess of the requirements. Of late, however, columns have assumed a much more important function in buildings. For high office buildings, warehouses, apartment houses, etc., the columns practically carry all the weight of the different floors in the building. The walls serve in many cases simply to fill in and form the outer shell for the building. The factor of safety used is sometimes as low as 6. Practically no tests are made on cast-iron as to quality. The columns are cast on their side, not on one end as is usually called for in the case of water-pipe. The result is that in many cases the columns are very thin on one side and excessively thick on the other. Cast-iron struts taken out of old bridges show plainly how very unreliable castings are when made in this way. It is true that in buildings the loads are quiescent, but this does not improve matters much. A further consideration that should not be lost sight of is that the loads carried by the columns are almost invariably eccentric, so that cross strains are added to the direct compressive strains, thereby largely reducing the factor of safety."

BUILDING CONTRACTS.

A GOOD deal of discussion is going on just now about forms of building contract. The National Association of Master-Builders' seems to have opened the discussion, a year ago or more, by the appointment of a committee to consider the subject of drawing up a model building-contract to be officially adopted by the Association, but the matter has occupied the attention of various bodies of architects as well as builders, and as the Committee of the Builders' Association was sensible enough to invite a few architects to join in its deliberations the subject may fairly be said to be formally before the two professions. For our own part, we are inclined to think that the proper position for architects to maintain, unless applied to for advice by the builders, is that of critics, rather than promotors of any particular form. After all, the contract is between the owner and builder, not between the builder and the architect. It is the duty of architects to guard the interest of owners in contracts, so far as they can fairly do so, and they should, both individually and collectively, carefully avoid the appearance of going out of their way to invent forms of contract which may be more acceptable to builders than those now in use. If the builders object to the current forms they are at liberty to say what changes they wish to have made, and if they unanimously resolve to insist upon any stipulation whatever, the owners must submit, and the architects, if their powers of persuasion prove unavailing, have no further responsibility on that particular point. So far as the architects' own comfort is concerned, most of them would be glad to see an unchangeable form of contract adopted, covering all conceivable points, which would relieve them of the anxiety of drawing up contracts in their own way, but until the matter has gone beyond discussion, they should, as a class, see themselves, to some extent, entrusted with the duty of defending the rights of owners in general. At the last convention of the Association of Master Builders, certain rules were drawn up, and recommended to local societies for adoption, which have already been printed at length in these columns; and the Canadian builders have recently adopted a form of contract prepared for them, and, it is said, will now refuse to sign any other.

In some respects the Canadian form is more favorable to the owner than the rules of the American Association. The Canadian contract, for example, provides as do most existing contracts on this side the line, that specifications and drawings shall be regarded as co-operating, so that work shown on one and not on the other shall be included as if mentioned in both, while the American rules provide that demands made by the plans, and not referred to in the specification, shall not be considered in the estimate offered. In our opinion the Canadian form is in this respect the only fair one. No architect in this or any other country can describe a building completely either by specifications or plans alone. Both sorts of documents together are barely enough to enable the most careful architect to show all the items which he wishes to include in the contract, as so long as both plans and specifications are open to the builder to study in making his estimate, there is no more reason for his leaving out anything shown on one because it is not mentioned in the other than there would be for omitting the items on certain pages of the specification. If the plans and specifications do not agree, the architect is ready to decide which shall be followed in estimating, and to make a note of his decision, so that with reasonable care on the part of the builder, such as contractors' associations should endeavor to inculcate, there is no chance of misunderstanding under the Canadian form, while the American rule opens the door to all sorts of exims, quarrels and dissatisfaction. Again, by the Canadian contract the builder is not allowed to sub-let the whole or any portion of the contract without the written consent of the architect, while the Americans stipulate that the contractor shall not be restricted as to whom he employs as sub-contractor unless previously notified. It is not quite clear whether the American rule requires that the architect shall notify the contractor not to employ certain persons, or to obtain his consent to sub-contractors. If it means the latter, the stipulation does not change the ordinary form; if the former, every architect is to be obliged to lay himself open to a dozen libel suits, if he wishes to protect his client against the transfer of his contract from a good builder to a bad one, and is even then liable to see some strange rascal from a neighboring town substituted for a careful and responsible builder whom he had persuaded the owner to contract with at an extra price, for the sake of getting his work well done. In regard to forfeiture for delay, the Canadian contract provides that where delay occurs by reason of inclemency of weather, or strikes of particular trades, the architect shall extend the time of completion to a reasonable amount. The American rules say nothing about allowance of extra time for completion in case of special circumstances, but content themselves with the rather childish demand that where a penalty is to be exacted from the builder for delay beyond a certain date, a premium of like amount shall be paid to the builder if he completes his work before the given date. It ought to be obvious enough that if an owner has, for example, given a lease of the house he proposes to build from a certain date, as often happens, or if he has arranged to give up his present residence on a fixed day, and move into his new one, he has a right to be compensated for any damage he may suffer through the failure of the builder to keep the promise he has voluntarily made; while, as it is of no advantage to him to have the house on his hands before the time at which he or his tenant is ready to move into it, but rather an injury, since a house hurried in building is never so good as one constructed deliberately, there is no reason whatever why he should pay a builder a premium for encumbering him, before the stipulated time, with a building that he has no use for, and is, through the haste with which it was built, of less value than he intended and agreed to have it. Moreover, it should be remembered that the contract in present use, by which an allowance of time is made to the contractor in case of strikes or unusually bad weather, protects the interest of the contractor against the workmen at the cost, and often to the very great inconvenience, of the owner, who makes perfectly definite promises, in return for very elastic ones on the part of the builder. In addition to this concession, all builders and architects can testify that the penalty for delay stipulated in the contract is very rarely enforced. If the fear of it serves its pur-