

# Conservation

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## Tar Sands of Alberta

### THEIR USE FOR ROADWAYS

Entrance of Railways to the  
District Will Hasten  
Development

The existence of deposits of bituminous sands in the McMurray district of Northern Alberta has been known for many years. The absence of transportation facilities has, however, prevented the utilization and even the prospecting of these deposits.

Anticipating the building of the



Cut No. 85  
Building Protecting Walls Around Trees.

Alberta and Great Waterways railway into Northern Alberta, a preliminary examination of the deposits was undertaken by the Dominion Mines Branch in 1913, and continued in 1914. Meanwhile, the construction of the railway, which will open up and render these deposits available, is being rushed, and its completion is expected in 1916.

The investigation revealed the fact that the tonnage of bituminous sands in the McMurray area is very large, and, although much of the material is low grade and, in some cases, the overburden so heavy that mining by open-cut is impracticable, it is found that some 20 per cent of the material, representing many millions of tons, may be considered as of commercial value.

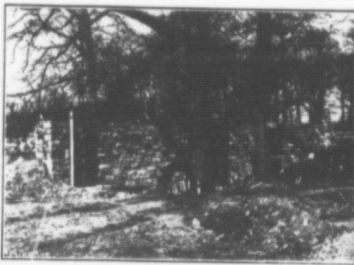
Bituminous sands have for a number of years been used in the

## The Commercial Value of Forest Trees in Real Estate Development

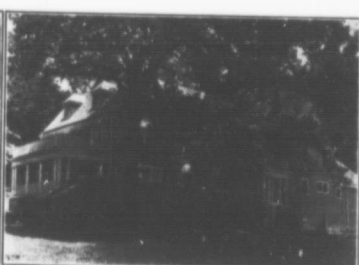
In the development of real estate in Canada, too little regard has been paid to the commercial value of trees and even great corporations have deliberately thrown this value away by clearing the ground before sub-dividing it.

In suburban development in the United States, not only are trees considered to be worth keeping, but it is found to be worth while to spend considerable sums of money in preserving them.

The Roland Park Estate at Baltimore is a successful commercial enterprise. The president of the Estate says he has found, after 20 years' experience, that it pays to keep the trees, even when it costs something to do so. The views herewith indicate what is done to preserve trees at Roland Park and the attractiveness they are to the Estate.



Cut No. 86 Building Archways over Tree Roots to preserve them.



Cut No. 87 Building Part of House Round a Tree.

construction of various classes of pavements in the United States. The extent to which the material has been used appears to have been largely determined by the freight rates. The greater portion of the bituminous sand used at the present time in California for paving purposes comes from the Santa Cruz quarries, and is, in many respects, similar to the Alberta material. The bitumen contained in the McMurray rock is, however, much softer. It is believed that, with proper manipulation, such as heating, and the addition of hardening flux, the penetration of the bitumen can be reduced to meet the requirements of standard specifications for its successful employment in the laying of pavements in substitution of imported asphalt.

In view of the fact that the bitumen contained in the tar sands of Alberta is softer than the bitumen of the California material, arrangements have been made by the Mines Branch for the laying of an experimental pavement in the city of Edmonton with the Alberta material, the city government having agreed to construct the concrete foundation. Upward of sixty tons of suitable material has been assembled for transportation to Edmonton, and it is expected that

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## Industries and Cheap Power

### Water Power Necessary in the Manufacture of Many of the Coarser Products

In investigating the relative requirements of the different industries which should thrive and which, therefore, should be encouraged in Canada, one may follow different lines of reasoning. One train of thought naturally makes us turn to the benefits to be derived from our large water-powers now still unused. Water-power means cheap power where large amounts and continuous operations are required. The industries in which the cost of power enters only to a small degree in the total cost of production do not benefit very greatly from cheap power. No doubt cheap power is a great attraction to all industries, but those requiring the largest amount, figured on a basis of the value of their product will naturally be attracted with greater force.

The following table has been prepared from both Canadian and United States census reports and various other sources. It shows the amount of power required, in the different industries enumerated, to produce \$1,000 worth of product during one year. The greater this proportion, the

greater attraction will cheap power have for this industry.

(Data from various sources)	
Nitrates from nitrogen of the air	31.4
Mechanical wood pulp	16.93
Aluminum	16.00
Calcium carbide	15.39
(Data from Canadian census)	
Cement	7.08
Log products	2.95
Brick, tile and pottery	2.28
Iron and steel products	1.98
Cottons	1.97
(Data from U.S. census)	
Cement	5.91
Paper and wood pulp	4.87
Kaolin and ground earth	4.47
Brick and tile	3.67
Grindstones	3.35
Iron and steel, blast furnaces	3.00
Flax and hemp, dressed	2.46
Lumber products	2.46
Cotton goods	2.07

Carborundum requires 5,150 h.p. hours to produce one ton. In the manufacture of nitric acid from the nitrogen of the air, one horse power is required for every 900 lbs. of acid produced in a year. The process of making graphite in electric furnaces also requires a large amount of power.

It is the business of armies to destroy. It is the business of Canadians to build up Canada by buying goods made in Canada by Canadians.