built so that the citizens can come back and forth from their homes without walking in ankle-deep mud, which is then dragged into the house. Dirt in every shape and form is a menace to health.

The boulevards should be made as wide as possible and trees planted thereon, as grass and trees have a beneficial effect upon the health of the inhabitants. A paved street is easily cleaned, as it can be swept with brooms and flushed with water, so that the dust and dirt can be removed into storm sewers or by street cleaning wagons.

No city can have too many parks and open spaces, as long as these can be provided for, while the land is cheap. The town engineer has to examine all plans of subdivisions, and he can often induce the owner of subdivisions to set aside a parcel of land for public parks and also get them to make some of the streets wider than the usual 66 feet. Provisions like these may seem unnecessary at the time, when the subdivision plans are submitted, but they prove themselves of great value to the public health when these districts become settled.

The roadways in residential sections of cities should be made as narrow as possible, just sufficient for the light traffic, as they produce dust and dirt, which is blown into the houses, whereas boulevards with grass are always clean, healthy and beautiful, when well kept.

As long as the town is small, the transportation problem does, of course, not signify, as the distances between residential and business sections are short, but when the land becomes very valuable, due to the progress of the city, and therefore the working classes must move away from the vicinity of their working places, then arises the necessity for rapid and cheap transit, and we build our electric street railways, which enable the man of moderate means to make his home in the outskirts or suburbs of a city, where land can still be bought or houses rented for a reasonable price.

The man who works in an office, shop or factory the whole day, needs change of air, when he is through with his day of labor, and the street cars, elevated and underground railways, as well as the steam-operated suburban trains, carry the working population back and forth between their places of work and their healthy homes at a small cost. We extend the water and sewer mains, electric light and telephone lines to the farthest limits of a city, so that there should be no excuse for overcrowding in tenement houses.

And when a city has reached the stage where this housing problem becomes an acute question, then we commence to talk of city planning, and we discover all the mistakes which have been made while the city was growing. And why were those mistakes made? Principally because the municipality had no power to control the city planning, and then, also, often because even though the authorities of a city had power to control the city planning, the engineer's advice was not obtained, but private interests dictated the policy of the controlling bodies.

This branch of engineering, the city planning, should be taken up more thoroughly by municipal engineers, because generally the town engineer has to pass all subdivision plans, and if he does not take a look into the future before passing a plan, it is pretty certain that nobody else will; and thus occur many blunders which it afterwards costs enormous sums to rectify.

The proper way is to let the city engineer lay out a city plan and then make property owners conform to this plan. That may appear autocratic to the free citizen of the new world, whose idea of liberty is often that he should have the right to disregard the rights of the community for his own personal advantage, but true liberty exists when law and order is most respected.

## NEW DEPARTURES IN TELEPHONE.

An article in the New York Telephone Review, entitled "From a Limousine to the Depths of a Coal Mine," describes two types of special telephone equipment-e.g., a chauphone, or telephone for automobiles, and a special portable telephone equipment used in mine rescue work. The chauphone, which consists of a hand transmitter for the passenger connected to a loud speaking receiver at the chauffeur's ear, obviates the difficulties of speaking-tubes for automobile use. The mine rescue equipment has a special type of transmitter known as the "throat transmitter," since a man wearing an oxygen helmet which covers his month cannot use the ordinary type of telephone transmitter. The throat transmitter is light and compact, and is provided with a soft rubber cap, which adapts itself to the curves of the throat. The telephone equipment used by the men outside the mine or at the directing end consists of a chest-type transmitter and head-band receiver. The two are connected by a small wire cable, in 500-foot coils, carried in a leather case and fastened to the helmet man's belt, which pays out as he advances.

## CANADA AND HER PAPER MANUFACTURING INDUSTRY.

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When the Senate of the United States passed the Tariff Bill and removed the suggested countervailing duty of \$2.00 per ton on chemical wood pulp manufactured in Canada, it threw open the gates of the United States to the wood pulp industry of Canada. The United States requires about 4,500 tons of paper daily, New York alone using 600 to 800 tons; and her wood pulp forests are fast disappearing. Her water powers not only are decreasing, due to the bareness of the hills, but are more valuable for other commercial purposes than for driving paper mills, that are very much inferior in supply of material and in limitation of power to competing Canadian establishments. For Canada is extremely fortunate in the possession of those three requisites underlying the manufacture of paper-i.e., cheap and abundant water power, cheap and contiguous wood supply, and ready transportation. And the United States has found that its manufacturers can no longer compete successfully in this business. Since 1911, when not more than 440 tons of paper per day were manutured, there has been an increase in capacity of 1,055 tons per day; so that up to date the total capacity of Canadian mills is 1,495 tons daily. At present the total production of United States mills is about 4,000 tons per day; but the increase of production in 1912 in the United States was 235 tops per day as compared with 430 tons per day in Canada; ju 1913 up to date, 110 tons in contrast to 225 tons, which by January 1, 1914, will have been increased further by a capacity of 390 tons per day. Thus, whereas in 1909 and 1910, the capacity of Canadian mills was but 12 per cent. of that of United States mills is used to be the states with the states mills is the states with the states mills is the states mills is the states mills is the states mills is the states mills and states mills is the states mills are states mills and states mills and states mills are states mills are states mills and states mills are states mill United States mills, in 1914 the Canadian industry is substantially 40 per cent. of the American industry. So, for the interacts of the the interests of the republic, it was not a time to have restrictions placed upon Canadian wood pulp; and as far as Canada is concerned, the new tariff has meant the opening up of new towns in her backwood forests, and the great development of her lumber industry. Canada has taken precedence, because, in the words of Senator Weeks, of the United States Congress, "Canada is in a better situation to make the products which make the products which are absolutely necessary in this paper age of the twenticth paper age of the twentieth century."