

The Role of the Land Surveyor (Past, Present, and Future) in Urban or City Land Planning

Under the Chairmanship of Mr. A. Phillips Bill, chairman of the Property Surveys Division of the American Congress on Surveying and Mapping, a panel discussion and forum on this topic was the feature of a plenary session of the A. C. S. M. Annual Meeting at Washington, D. C., March 22, 1960.

Mr. C. C. Lindsay, Q. L. S., was a member of the panel and presented a report on conditions in Canada. Mr. Lindsay's report is reproduced here as it appeared in the Surveying and Mapping Journal, September, 1960.

C. C. LINDSAY REPORTS ON CONDITIONS IN CANADA

MR. LINDSAY: I have been asked to present a paper upon the subject of "The Role of the Land Surveyor (Past, Present, and Future) in Urban or City Land Planning" insofar as this subject concerns Canada, your neighbour to the north. The Dominion of Canada is a vast area comprising ten Provinces and some Territories, each of the Provinces having its own corporation or association of land surveyors, some particular laws of its own, and its own problems with regard to town or community planning. But the situation is more or less the same in each one of them with regard to the role to be played by the land surveyor. I will therefore deal mostly with conditions in Quebec Province.

In the past, before the present burst of population, in what are popularly called the "horse and buggy days," the land surveyor was the only town planner in Canada. That is, he laid out the subdivisions and the proposed villages and towns upon his own design, based upon his skill and experience and his influence upon the owner. Altogether too often the owner had some ideas of his own, which did not always conform to what was right, either technically or topographically. On the whole, the land surveyor did a good job. In the very first days, the tendency was to lay out streets that were too narrow, but there were reasons for this inasmuch as public utilities were at a minimum, there were extremes of climate, and there were all too frequent alarms of war, all of which tended to make a community compact and self-supporting. Later on, modern legislation provided that no street in a subdivision should be less than 66 feet, i.e., one Gunter's chain, in width.

From the beginning of the century until some twenty-five years ago, the land sur-

veyor was still supreme in town planning. It is well to emphasize here that in all Provinces of Canada, the land surveyor alone can prepare and register subdivision plans, or, in fact, prepare any plans whatsoever relating to the title or identification of land. The method of subdivision followed in most cases was the rectangular system, which is coming in for a lot of criticism today, just and unjust, but it served the needs of the times which called for rapid development at minimum cost.

During this period, there was little municipal control of town planning. In "boom" periods, when the pressure from land speculators and builders was on, many subdivisions were laid out with lots too narrow. In some instances, not enough space was left between projects to ensure proper spacing for streets and blocks therein. Unscrupulous land owners, out to get the maximum number of lots, laid them out with a minimum width and depth and as few streets as possible.

In rural areas, some of our good farmers were selling building lots on their land which they would mark out themselves upon the ground, using whatever unit of measurement was available—a measured length of rope or a measured pole. The deeds of sale were passed accordingly. To get around the regulation covering street width, they would grant servitudes or easements upon strips of land of relatively narrow width to serve the plots of land thus sold. Fortunately for all concerned, this condition of affairs was of very short duration, as the Provincial Government passed the necessary legislation authorising municipalities to enforce proper cadastration of these areas and a proper layout. Unfortunately for the surveyor in these cases of owner-dominated subdivision, he is the one who gets the blame for these freak subdivisions, as it is his name

which appears on the plan.

At present, conditions are under better control. All of our large cities have their town planning departments with registered land surveyors on their staffs. No subdivision plans may be registered unless approved by the municipalities in which they are situated. Subdivisions which include streets of lesser width than 66 feet, as well as any subdivision plans of a bizarre nature, have to be approved by the Provincial Department of Municipal Affairs. In addition, all subdivision plans have to be approved by the Cadastre Service of the Department of Lands and Forests before being passed on to the registry office of the district or county concerned.

Now, what is the role of the land surveyor with regard to town planning at the present time in Canada? As previously mentioned, no plan can be registered without his signature. By so doing, he takes the responsibility. This means, as a minimum, that he must measure the property, lay out the lots, calculate their areas, then prepare the plan and the book of reference, which is a written description of each lot and accompanies the plan to be registered.

We have a number of town planners in Canada, some of them very good, some of them not so good, the same as elsewhere. They have no professional standing, as such. Usually their activities are confined to the drawing of the theoretical plan, leaving it to the surveyor to lay out the lots on the ground and do the mathematical work connected therewith. Many surveyors are members of town planning groups and associations. Their membership in such organizations is to be encouraged.

A few years ago a seminar was held near Montreal for the purpose of studying this whole problem of town planning. It was attended by municipal engineers, land surveyors, architects, town planners with and without university training, and civic employees who were interested in urban development. A member of each profession was chosen to lecture, for one day, upon the part which his particular calling played in the development of a city. Each lecture was followed by a long discussion period. I had the privilege of representing the land surveyors thereat, although I am also a practising municipal engineer. This seminar was one of the most interesting that I have ever attended because it was a case of mutual self-education for all of us. The conclusion which I reached then, almost fifteen years ago—and I have learned nothing since to make me change my opinion—is that this problem of town planning is a joint affair. First of all, a general plan is

required, showing boundaries, dimensions, bearings, and contours and other topographical features. This is the land surveyor's work. Next is a theoretical layout of lots based upon topography. This can be done by the land surveyor (he has been doing it for generations and can adapt himself to modernisation) or by the town planner. Then the street layout must be checked by the municipal engineer for grades, sewer locations and run-off, water supply, pavements and sidewalks, and power lines. The architect comes into the planning for design of proposed buildings and their siting upon the lots. The surveyor, town planner, engineer, and architect come together for zoning regulations. Finally, there is the preparation of the completed plan, with dimensions, areas and lot numbers of building sites, and their registration and description for title, which, as previously mentioned, is solely land surveyors' work.

All too many of our town planners who are not members of the engineering or surveying profession seem to go off the deep end in their proposed layouts. One not infrequently forms the impression from some of the designs submitted that the design with the greatest number of curves of every kind—simple, compound, reversed—is the most assured of first prize. From the surveyor's point of view, the more curves there are, the more money there is in it for him, because calculating multi-curved layouts is expensive, but it is hard on the client. The writer is in agreement that curved side streets are pleasing and cut down traffic hazards, but he is of the opinion that tangents should be substituted for all curves of two degrees or less, also that stretches of tangent should be placed as frequently as possible between curves to enable these to be anchored down for reference purposes for restaking property boundaries later. Again, there is an inordinate tendency toward dead-end streets, notwithstanding the delays offered to operations of snow-clearing, fire-fighting, everyday deliveries of provisions and merchandise, and the danger of being bottled in by repairs to pavements, sewers, or water mains, or by ordinary street accidents. The water supply is always better and safer if the lines are laid in closed loops. Again, numerous sharp curves increase the cost of building sewers by multiplying the number of manholes required.

Summarized from the above, it would seem to me that, if the land surveyor wishes to maintain his position as a leader in town planning, he will have to broaden his education in this field to include theoretical layout practises based upon modern principles. If he is also a civil engineer, his posi-

tion will be reinforced all the more as he can advise from a municipal engineering point of view. The role of the architect, as such, while quite strong some few years ago, is dwindling in the field of theoretical layout; those architects who are doing this work are acting more in the role of town planner than otherwise. It is possible, however, that they have found that the returns therefrom are not comparable with the fees which are normally obtainable in the field of building design in which they are supreme. To quote from a speech by Prof. James A. Murray, printed in the Journal of the Royal Architectural Institute of Canada in February 1959, "We sent out a questionnaire to find out what would interest the architect and what matters would bore him. Absolutely at the bottom rating in interest were two subjects—student work and town planning."

Last spring our Town Corporation of Quebec Land Surveyors sent out a questionnaire to Quebec land surveyors. The following tabulation gives some of the important questions asked and the numbers of affirmative, negative, and "no opinion" replies to each:

	Yes	No	No Opinion
Are you interested in town planning?	100	2	2
Is the surveyor occupying his proper place in town planning?	46	55	1
Do you believe that the surveyor can regain his position in this field?	88	5	9
Are you practising town planning?	78	17	7
Do you belong to any town planning group, municipal, parochial, or other?	42	58	2
Do you consult with town planners or other professional specialists in special cases?	55	44	3
Do you believe that the land surveyor is sufficiently trained in town planning to undertake large-scale work in this field?	14	77	11
If special courses in town planning were given locally, would you follow them?	68	26	8
Are you interested in receiving literature on town planning?	91	9	2
Do you consider the basic education of the surveyor as being equal to that of any other profession, relative to town planning?	78	15	7
Are you of the opinion that town planning, as practised now, infringes upon the prerogatives of the surveyor, or that the confusion caused by			

the practicing of town planning by nonprofessionals is detrimental to surveyors?	90	6	6
Would you join any professional organization which would group various professional specialists in town planning?	83	15	4
Would you agree to pay a special contribution as a member of a corporation of professional town planners?	88	11	3

The above figures speak for themselves. Under present conditions, because there is no restraint upon the use of the words "town planner," anyone can call himself such with subsequent abuses and loss of professional standing to all connected with any scheme of doubtful character. It would be a great step forward if the surveyors themselves could undertake the formation of a properly licensed legal body, bearing always in mind that membership in such an organization must not carry the right to practise either engineering or land surveying contrary to the Civil Engineers Act and the Quebec Land Surveyor's Act, both of which set forth the respective prerogatives of these professions.

Excerpt from the Discussion

VOICE: In Vancouver, British Columbia, the city planner is or was a civil engineer. When one becomes a planner of that status—the head of a planning department—he should forget that he is firstly a civil engineer. However, the deputy planner was at one time the assistant city engineer and a land surveyor. The head of the regional planning board, for the region that reaches up the Frazer River a hundred miles, is also a civil engineer. But the crux of the matter is that these are civil engineers who, through their practice and their education, have become qualified planners. This is one thing that we must not forget in proposing that the surveyors become planners. They must become qualified. Planning must be a part of their education and a part of their experience and training before they can insist that they be the planners. If and when they do have that education and training, there are no others who are better qualified than surveyors.

Mr. C. C. Lindsay is a member of the Advisory Council of the A. C. S. M.; a Quebec Land Surveyor and Civil Engineer with private practice in Montreal. He is well known to Ontario Land Surveyors as a welcome guest at our meetings and for his broad interests in the field of land surveying.

The Editor