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Relation of the Curve to Town-Planning

Not a Single Straight Street Line in Some Plans — Some Others Show Curved Lot Boundaries — Discussion of Methods Employed in Laying Out Curves for Street or Lot Lines—New Handbook of Curve Tables Required

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TO many minds, the term "town planning" apparently brings the vision of an area planned with curved street lines, the curve being regarded as a vital part of town planning, of which it is considered not only the distinguishing but also the chief characteristic. The curve, of course, is not an end or aim of town planning (a term so inexpressive of its wide and varied scope), but rather is incidentally a means of accomplishing several ends more or less related.

By far the most important of these ends, largely an economic one, is that of having streets conform to the topography or nature of the ground. To fulfil this condition, except on level ground, street lines can seldom be straight; they must be either a series of straight lines, which if sufficiently shortened become a curve, or else these straight lines, for the sake of appearance (another desirable end to be attained), should be joined by curves. In this latter connection, in his "City Planning," Robinson says:—

Build for the Traffic

"We shall come in time to realize that wherever there must be a bend, not less on main avenue than on minor street, that turn should be a curve and not an angle. We build our streets for the traffic that makes use of them; we see that car-tracks sweep around the angle in a curve and the tracks of wagons and motors describe lines of grace, but because it is a little easier to survey lots in straight lines and angles

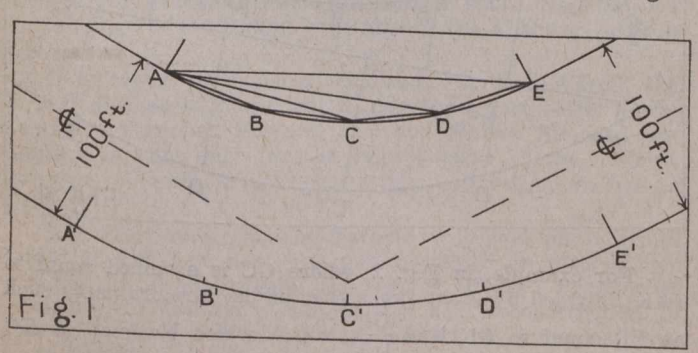

Fig. 1

than in curves, we too often destroy the beauty of a street and the adaption of its course to the traffic which is upon it, in order to put in the surveyor's hard straight lines and angles."

It might also be mentioned that sharp angular bends tend to retard the congested traffic. For convenience and public safety they should therefore not be permitted on main traffic streets.

Having thus attempted to define briefly the function of the curve as related to town planning, it must be admitted that curves are encountered in most town planned areas, and even that some plans as designed show not one single straight street line and exhibit also other curved lot boundaries. In this general connection the following extract from a letter received some time ago from Frederick L. Olmstead, a member of a prominent firm of landscape architects in the United States, is of value:—

"I am frequently impressed with the amount of labor involved in laying out and figuring a curvilinear street system according to railroad methods, especially where land values are low. Often there is a disproportionate and ill-balanced

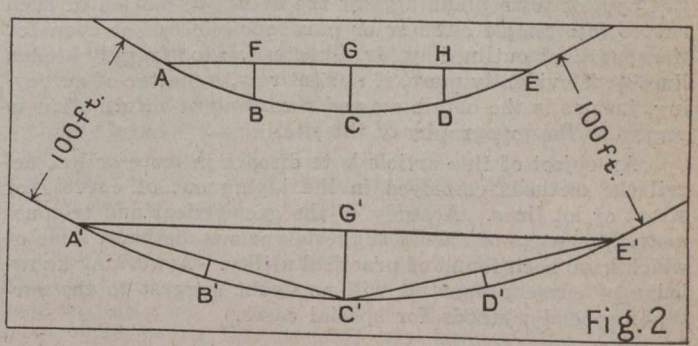

Fig. 2

expenditure in such work; straining at a gnat and swallowing a camel.

"For example, in laying out the side lines of streets, even where the plan must be curvilinear in general form for topographical reasons, there is no absolute practical necessity (such as exists in railroad work) for avoiding abrupt changes of direction, providing the total angle at any point is not too large.

"The justification for insisting on mathematically continuous curves and tangents in describing street alignments is essentially esthetic. There is a beautiful quality of gracefulness and an ideal expression of the continuity of vehicular movement in a road which changes its direction by perfectly gradual increments. But this calls not merely for the avoidance of angular bends, but for the avoidance of any abrupt change in *rate* of curvature.

Compound Curves Often Needed

"Unfortunately the desire to simplify calculations as much as possible, frequently leads a surveyor to put together his tangents and radial curves in such a manner as to produce an essentially and ungraceful ugly line. I constantly have to fight for the more liberal introduction of compound curves and easement curves in order to avoid the ugly effect of too sudden a change in rate of curvature in what purports to be a line of continuous movement.

"A frankly broken line, the successive pieces of which meet at angles of moderate deflection, if it is well fitted to the topography and good in its general form, is a better thing of its kind and may be far more agreeable in appearance than the usual mechanical combination of any radial curves and tangents that will take the road about where it has to go.