

results have been secured in steel in one of the Belle Isle Park bridges, Detroit.

In the closely-built-up sections of cities and towns, where clean, regular outlines characteristic of cut stone construction present themselves, bridges must bear evidence of greater finish than would be the case in rural or suburban districts. Cut stone or carefully finished concrete piers and abutments, with graceful superstructures exhibiting simple ornamentation of railings and portals, should characterize structures in such locations. The structure should be in conformity with the prevailing style of architecture in the vicinity, but need not be a reduced copy of any particular work near at hand.

Conformity with the physical features of the bridge site necessitates, for economic reasons, a general lay-out specially fitted to the profile of the crossing. Thus, in the case of the Garabit Viaduct over the River Truyère in Central France (Fig. 8 on plate), the presence of the deepest part of the ravine near the right bank clearly required that the longest span be placed at this point. Local irregularities and various special conditions may also necessitate the adoption of an unsymmetrical lay-out, but in general it may be said of such that they are pleasing only when the reasons involved are clearly apparent to the observer, as in the case of the Garabit Viaduct already mentioned.

In most cases the irregularities are not sufficiently pronounced to demand special adjustment to them in the number or length of spans. The crossing might thus be represented, as far as the general lay-out is concerned, closely enough by an ideal profile, or one in which the banks slope down along similar lines to a central point of maximum depth. Altogether apart from conventional aesthetic principles, for such a situation both economic considerations and the sense of orderliness and regularity necessitate a lay-out symmetrical about a centre line and involving spans of increasing length as the centre of the depression is approached, with the longest span at the centre of the bridge. Fig. 9, showing the Rocky River Bridge at Cleveland, O., as it will appear when completed, illustrates the pleasing effect of symmetrical arrangement of spans. The long span at the centre is suggestive of the ideal situation, where the stream flows under the bridge directly at its centre. It further marks the centre of the bridge, so that the eye may at once pick upon a point from which it may rapidly run in either direction and quickly appreciate the symmetrical arrangement. This is at times further facilitated by placing the summit of a grade at the centre of the bridge. The method of compensating for a slight lack of symmetry, adopted in the Rocky River Bridge by panelling the abutment wing walls at the end of the bridge, where only two approach spans occur, is evidence of excellent aesthetic designing.