

While most engineers may, unaided, be able to secure satisfactory aesthetic results on ordinary bridge work, for important bridges in populous districts or those of a monumental character, very few engineers are capable of relying exclusively upon their own aesthetic judgment. In such cases an architect of ability should be retained in consultation and the plans worked out in collaboration with him from the start. This custom is now very general in America as well as Europe. In the case of the famous Alexander III. Bridge at Paris (Fig. 3), some of the foremost architects and sculptors of France were engaged upon the work.

AESTHETIC STANDARDS.

In the consideration of the aesthetic features of a given bridge structure, the engineer must consciously or unconsciously adopt certain aesthetic standards as a basis of judgment. What these standards are will depend upon the degree of artistic perception which he has attained, and also upon the time and place, for there can be no absolute fixity in such a code. Thus, although the prevailing canons of artistic construction are based upon the use of stone, it is certain that ultimate approval will be obtained for materials which, for most effectual use, necessitate forms fundamentally different from those employed in stone construction. While the author is aware, therefore, that much diversity of opinion exists among architects and art critics of equal eminence upon aesthetic matters, an effort will be made to state a few fundamental aesthetic principles which should be observed by all who have to do with the design of bridges, and which are probably widely enough accepted to escape challenge by the reader. These are as follows:

- (1) *The structure must be in conformity with local physical conditions and entirely suitable for the work which it has to perform.*
- (2) *General approval of a design will be most probable when the material and the type of construction are well known to the people at large.*
- (3) *The simpler the lines of a structure and the more clearly the constructional principles involved are displayed, the more pleasing will be the result.*
- (4) *Proper balance or relation of parts to each other and to the whole must be maintained.*
- (5) *That design which is structurally the most efficient for the amount of material employed will at the same time be the most pleasing.*
- (6) *There should be no attempt to conceal the true nature of the material of the bridge or the structural principles involved.*
- (7) *The chief beauty of a structure arises from its general form.*