

PREFACE

A lack of artistic treatment is the greatest fault of American bridges. These structures are worthy of greater thought and study because they are usually such conspicuous objects in the landscape. The lack of art is no doubt partly due to the dearth of literature on the subject and the difficulty in securing good illustrations, and it is hoped that this book will assist in producing better results.

The most important work in connection with any great building enterprise is the preparation of the design, for on this the success or failure of the project depends. If the design is faulty, the money, time and thought spent on its construction are largely wasted, and all the labor of engineers, contractors and artisans is lost. If the design is lacking in beauty, the structure may remain for centuries as a mockery to its originators, unless fortunately it should collapse through structural weakness and give place to another one, more worthy.

The impression has long prevailed that bridge design consists in the development of formulæ, the solution of problems in graphic statics and the computation of stresses in truss frames; whereas, this is not design at all, but merely a part of the process in producing a design. Almost no attention has been given by engineers in America to the artistic character of bridges, and but little to their proper proportions, or to the selection of economic types. For fifty years mathematicians wrestled with purely constructive problems, evolving formulæ and establishing their conclusions, and in this direction there is little left to be desired; but during this time little improvement was made in the visible appearance of their creations. It remains, therefore, for the engineers of the twentieth century to insist upon and to establish a higher standard of bridge