

THE ENGINEER AND STANDARDS OF BEAUTY.*

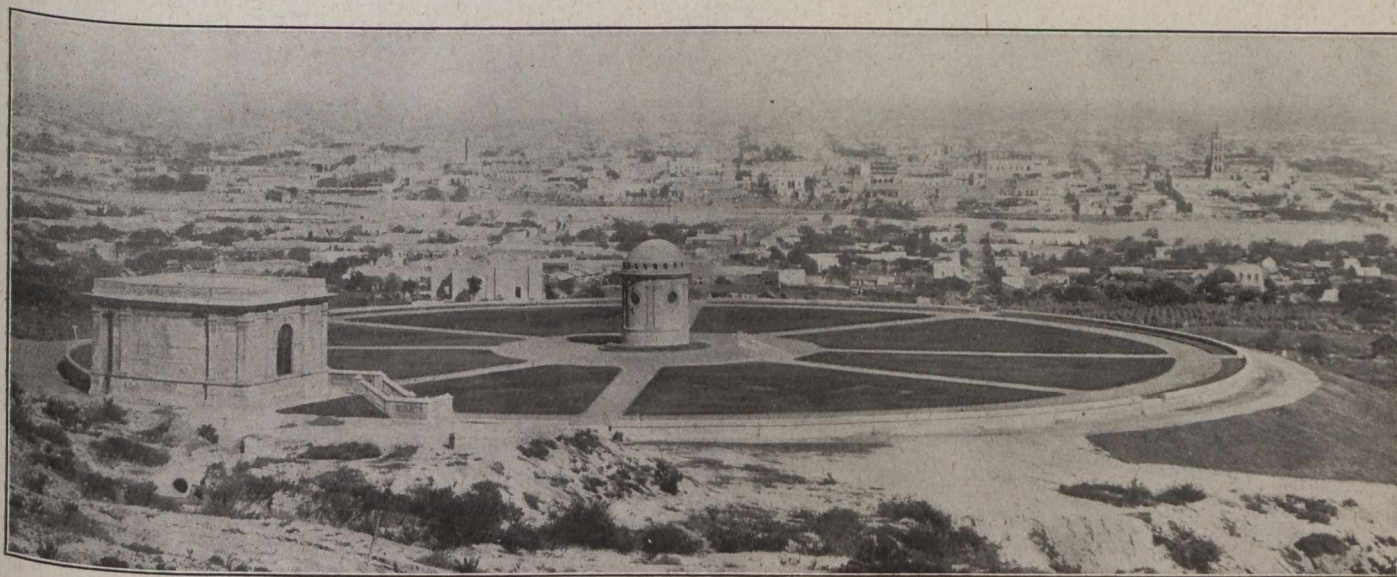
By G. R. G. Conway, M.Can.Soc.C.E.,

Consulting Engineer, Toronto.

THE work of the engineer touches every phase of our national and civic life, and the influence of engineering structures upon the community life of the people is of great national importance. In new countries we cannot expect in the early pioneer days that much consideration will be given to the finer details of designing. To open up great tracts of unpeopled territory, railways must be built as rapidly and as cheaply as possible, and there is always a fitness and simplicity in the temporary structures that are erected with the available local materials that appeal to us with pleasure because in this pioneer stage there is no time for the consideration of how such structures will look. To create electrical energy, waterfalls and rivers must be harnessed, and to accomplish this economically dams of the cheapest materials are thrown across streams and rivers for storage

place of the old bear most emphatically the stamp of permanence. If, then, we are building structures that are to last for generations, is it not worth while to design them so that the Canadians of future generations, looking back upon the great works being carried out to-day, and the greater works which we anticipate to-morrow, will admire and appreciate the early work of the 20th century as we admire and appreciate the great works executed at the beginning of the 19th century in Great Britain and France? Or, to go further back, as we ourselves admire the work of the Romans—that wonderful race, great in art, great in science, and famous for immortal laws, who “builded better than they knew,” and who, with true and noble colonizing instincts, scattered over two continents wonderful engineering works that we can marvel at even if we cannot emulate them.

The standards of beauty are enlarged with the growth of knowledge. Many of the works of the ancients are of great beauty and will always remain beautiful, but beauty and the appreciation of beauty are inherent in ourselves. The creation of beautiful structures can only be attained



Service Reservoir, Monterey, Mexico, Showing a Simple Architectural Treatment of Valve Houses and Layout of Roof in Grass Plots.

purposes. To develop highways, bridges must be built, and these, too, in the early days consist of a few logs cut down on the site and secured after the primitive fashion of the pioneer in all ages. As the new country develops, however, and this is true all over the American continent, wealth is created on the foundations laid by the sturdy pioneers of our race, and the small structural works have grown into gigantic engineering enterprises serving, it may be, millions of people, and because of such service daily influencing their comfort and well-being. The engineer is then brought face to face with the idea of permanence in his structures, and in the interests of economical administration it is necessary for him so to design his structures that the annual cost of maintenance is reduced to a minimum. The temporary trestles and bridges of the early railroads are replaced by steel, masonry, concrete or earthen structures. Old timber crib dams make way for permanent structures of concrete or earth work. Simple timber railway stations become massive structures of brick or stone, and so on throughout the whole range of the engineer's province, the new structures taking the

by a full and true knowledge of the kind of materials used, and by certain subtle distinctions born of integrity of purpose and refinement in handling those materials. Ruskin's well-known aphorism, in which he defines architecture as “the art which so disposes and adorns the edifices raised by man, for whatsoever uses, that the sight of them may contribute to his mental health, power and pleasure,” has a meaning for us as engineers.

This is an age of specialization. That, of course, is an idle platitude, for no man can say to-day, as Lord Bacon said, “I will take all knowledge to be my province.” Even the most versatile engineer can attempt to master but one branch of his profession. In our own Society we have among those directing the “great sources of power in Nature for the use and convenience of man,” engineers engaged in bridge design, railroads, canals, hydraulics, water supply, and sewerage; electrical, mining, municipal mechanical, and chemical engineers, but in olden days the sister professions of engineering and architecture were practised in many cases by the same individual. Roman engineers, designers of the Claudian Aqueduct and the Pont du Gard, produced great engineering works which are among the finest architectural remains of that great

*From an illustrated address before the Ottawa Branch of the Canadian Society of Civil Engineers, January 21st, 1916.