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The Editor is always glad to receive for examination illustrated articles on subjects of timely interest. If the photographs are *sharp*, the articles *short*, and the facts *authentic*, the contributions will receive special attention. Accepted articles will be paid for at regular space rates.

ARCHITECTURAL IMPROVEMENT OF NEW YORK CITY.

The strict regard for utility which characterizes the average American has been perhaps the most potent influence in a national industrial growth which is absolutely without parallel in the history of the world. But while utility makes for a rapid increase in wealth and material power, and the development of certain of the more robust elements of national character, these elements are obtained at the cost of certain other qualities, abstract and concrete, which many of us are beginning to realize the nation can ill afford to lose. Just now we have in mind the evil effects which a too slavish obedience to the promptings of utility have had upon the appearance of the great cities, in which the more important interests of the nation are centered, and in which so large a proportion of its people must ever dwell. Thus, whatever may be said, and a great deal may be said, in favor of the rectangular system of laying out the streets of a city, on the ground of its simplicity, its economy of space, and the readiness with which it lends itself to street nomenclature and numbering, it is coming to be understood that judged from the aesthetic and architectural point of view, and even from that of convenience, it has most serious drawbacks. Why is it that the average American tourist is filled with such immediate pleasure as he looks upon the winding streets and the general unstudied grace of an ancient European city? Something broader and deeper than a mere sense of novelty enters into his appreciation; and, as a matter of fact, his pleasure is founded in his unconscious recognition of certain fundamental laws of harmony and beauty, to which the stiff uniformity of the blocks and squares of the average American city does violence.

It is a curious fact that the ground plan of most of the great cities of this country was determined in the office of the real estate speculator and drawn with a lead pencil and a common office ruler. Certain it is that when the enterprising vendor of city lots pinned his rude sketch upon his office walls, he little dreamed that, before many decades had passed, the wildest flights of his prospectus would have been surpassed, and those crudely-drawn squares covered by the towering business buildings or the sumptuous homes of a prosperous city, and its streets filled with the rush and roar of busy commercial life.

For many years past there has been a growing conviction that the time has come for taking hold of the question of the architectural and aesthetic appearance of New York city, to say nothing of the convenience of its thoroughfares to the requirements of traffic, and devising some comprehensive scheme which will improve its present appearance and make provision for its inevitable future growth. Toward the close of the year 1903 the Board of Aldermen of this city created the New York City Improvement Commission which, after an exhaustive study of the problem, presented two reports, one in 1904, and a final report in January of the present year. The Commission realized that a comprehensive plan for the city's development must necessarily anticipate the future growth of the city for many years to come, and that it must be so designed that all of its parts should be consistent and form a homogeneous whole. This co-ordination was necessary in order that any future improvements might be carried out with a definite purpose and along definite lines, and not, as has been too often the case, without reference to any general plan for the city's betterment. The framing of such a system of improvement involved not only the laying out of parks, streets and highways, the location of city buildings, the improvement of water fronts, etc., but also questions of more or less detail relating to pavements, sidewalks, appropriate house numbers, gas and electric fixtures, the manner of indicating the streets, the location of statues and monuments commemorative of historical events, the question of tree planting, and many other matters, all of essential importance if New York is to take its place as one of the great metropolitan cities of the world, not merely as regards its size and numbers, but also in respect of its aesthetic and architectural beauty and dignity.

In studying the final report, with its ambitious and really stupendous system of boulevards, parkways, and monumental structures, one must be careful to bear in mind that the enormous expenditure of time and money involved in its execution is intended to be spread out over a long series of years. To adopt the Napoleonic method, would be to throw this city, in spite of its vast resources, into immediate bankruptcy. No such course is contemplated by the committee; and the elaboration of these plans on such a mammoth scale and with such completeness, is done so that the plan may be settled at least in its broad outlines, definitely and for all time, and an end made of the haphazard methods of the past.

The salient feature of the general plan, as it affects the city as a whole, is to afford adequate and suitable avenues of connection between the different parts of each borough, as well as between the different boroughs themselves and the outlying distances. Furthermore, while each borough is provided with a park system of its own, each system is connected with the other by suitable parkways so as to make them parts of one harmonious whole and by making each supplement the other, to add largely to the beauty and advantages of all. It is largely in view of the double purpose of uniting the separate park systems and at the same time preserving their individuality in each borough, that the Commission has planned for numerous and extended parkways and comparatively small parks rather than extensive individual park areas; and the wisdom of this policy cannot be disputed. The report is accompanied by a large number of maps illustrative of the designed improvements, and while limitations of space prevent any detailed reference to these, mention should be made of the special merit attaching to the plan for connecting and treating the terminals of the new East River bridges, and notably of the plans for a great circular plaza 800 feet in diameter at the point where the Brooklyn and Manhattan bridges converge on the Brooklyn side. It is sincerely to be hoped that after due discussion of the really admirable plans here presented, the report will be adopted, and the future convenience and beautification of New York city thus definitely assured.

THE DEMAND FOR TECHNICALLY QUALIFIED YOUNG MEN.

In view of the general impression that the professions are greatly overcrowded, it is surprising to learn that some of the leading railroads of the country are finding much difficulty in securing properly qualified young men to fill subordinate positions on the engineering staff. One road in particular has recently gone so far as to make the fact known in the public press, and to invite communication from young men who have passed through technical schools, and possess the necessary qualifications to enable them to commence work as rodmen and chainmen, or do the simpler instrumental work connected with the construction and maintenance of railroads. It was further stated that the remuneration would be sufficient to enable these men to maintain themselves at once in decency and comfort, and that for those who showed aptitude and application there was a reasonable expectation of early promotion. Further evidence of the excellent opening afforded by the present industrial activity is found in the fact that, in one of the leading technical colleges of the country, every member of the graduating class of 1906 had secured an appointment some months before the close of the college year. The demand for technically-qualified men in railroad work has unquestionably been stimulated by the recognition of the fact that the increase in the capacity and weight of the motive power and rolling stock, and the demand for more intelligent supervision due to the introduction of electric traction on steam roads, is rendering it desirable that not only the engineering department, but also those which have to do with the maintenance and operation of the road should be run by men with sufficient technical knowledge, with sufficient training in natural science, to enable them to exercise a more intelligent oversight of their departments than is possible in the case of men whose theoretical knowledge is bounded by the limits of a common school education.

In this connection it is gratifying to note that there is in successful operation in this State a railway training school under the supervision of practical railroad men, in which the students are put through a course designed to prepare them specifically for employment in the various departments under which the complicated operation of our railroads is carried on. Without casting any disparagement upon the many able men who, from humble positions on our railroads, have risen to stations of great trust and responsibility, we believe that the complicated problems involved in the operation of a great modern railroad system have rendered it not only desirable but imperative that the heads of those departments which have to do with the mechanical and constructive elements of a railroad should be graduates of technical schools or members of the engineering profession. To make such a provision a general one would, after all, be merely to apply broadly a principle which, for many decades, has been followed upon the Pennsylvania Railroad system, whose late distinguished head, President Cassatt, was a civil engineer who had risen by steady gradations from rodman to president.

THE "JENA" DISASTER AND STABLE GUNPOWDERS.

In all probability the recent terrible disaster to the French battleship "Jena" will be found to have been due to the explosion of her after magazines as the result of spontaneous combustion of the powder. If this be so, the accident is of the same character as that which, at the close of the recent war, tore out the side of the Japanese battleship "Mikasa" at a time when, like the "Jena," she was at one of the government dockyards.

In spite of the really remarkable progress which has been made in the development of modern powders, the best of them are liable, under certain conditions, to a decomposition which, if it proceeds to a certain point and be accompanied by certain conditions of temperature, may result in the explosion of the magazine and the loss of the ship or arsenal, as the case may be. Our modern smokeless powders, when in storage, are the occasion of a degree of anxiety and watchfulness which was never felt in the days of the brown or black powders. Although it is true that the stability of smokeless powder made on the latest formulas shows a great improvement over the earlier powders, it still remains for someone to produce a slow-burning powder which, without any sacrifice of ballistic power, shall possess the desirable quality of being absolutely stable under any conditions of climate and for any period of storage.

COHESIVE FIREPROOF TILE CONSTRUCTION.

The elimination of the fire hazard in modern buildings is based upon the principle that all supporting iron or steel girders, columns, and beams must be protected from fire by some material which is a poor conductor of heat and not easily disintegrated or injured by high temperatures. Burned clay materials, such as flat, hollow, porous, and semi-porous terra-cotta blocks, and certain grades of burned bricks, are commonly employed for this purpose. Owing to the relative lightness of these materials and their high fire-resisting qualities, most steel frameworks of our large buildings are incased in hollow or flat terra-cotta tiles laid in cement mortar. Many of these clay tiles and blocks are burned in the making to 2,000—2,500 deg., so that in any fire they will not crumble or crack at a temperature below that to which they were originally subjected.

No great stress is imposed upon the hollow porous blocks used for fireproofing beams, girders, and columns, and their crushing strength is not very great. Their function is performed in protecting the steel work from an excessive interior temperature, while the metal carries the loads of the different floors. The use of hard, flat terra-cotta tiles for certain construction purposes, both to carry the load and to resist any interior fire, has in the last year or two assumed an important development. Modern methods of burning and making the terra-cotta tiles have greatly improved their strength and durability, and the better grades of them have been used in a number of buildings in New York city and elsewhere which fully illustrate the new method of cohesive fireproof tile construction.

In the new custom house in New York city the large dome surmounting the great interior rotunda is constructed entirely of fireproof flat tiles, and the total absence of any metal for supporting this huge elliptical dome shows the great cohesive power of hard, flat tiles when properly laid up in cement mortar. The dome is 80 by 135 feet in size, and supports on its summit a huge skylight of glass and metal whose total weight is 140 tons. The tiles used for this purpose are 12 inches in length, 6 inches in width, and about 1 inch in thickness. They are laid on edge, and form a perfect curve.

The masonry walls of this rotunda are built of brick up to the lower part of the dome. A massive flat ring of steel is fitted on the top of this masonry and imbedded in it, and from this the dome springs. The foundations of the dome are of solid, flat tiles cemented together on their edges, but after a few courses an outer and inner shell is formed. Nine layers of 1-inch flat tiles form the lower courses, but as the curvature of the dome is reached one course after another is omitted until near the middle there are only three layers of tiles for each shell, leaving an open space between them.

A central mid-rib composed of tiles laid flat runs around the dome to strengthen it, and similar ribs of