



Cathedral of St. John the Divine, now in course of construction, on Morningside Heights, New York City. An idea of its great size may be obtained by comparing it with the buildings in the immediate background. Work on the Cathedral was started fifteen years ago, and, when completed, it will accommodate ten thousand worshippers.

## **DOMES OF ST. JOHN THE DIVINE.—Construction of Immense Vault Over Partially Completed New York Cathedral Wholly Without Precedent.—Built Without Falsework or Scaffolding 200 Ft. Above the Ground.—An Edifice Which Will Accommodate 10,000 Worshippers.**

**I**F NOT THE ARCHITECTURE of the building itself, nor the vastness of its magnificent dimensions, then the construction of its immense dome alone serves to render the Cathedral of St. John the Divine, now in process of erection on Morningside Heights, New York City, a structure of absorbing general interest. It is the first great dome in the world built without either falsework or scaffolding, and its completion marks the successful carrying out of a stupendous and daring work, which in method of construction has upset all existing theories in engineering of this kind, and excited the wonder of the architectural and engineering fraternities and the lay public alike.

This mighty vault, which rises above the centre of the structure at a distance of 200 feet from the cathedral floor, was built bit by bit over an area of absolute space. When Rafael Guastivino, Jr., began preparations for the work, builders called the undertaking visionary and foolhardy, wholly without precedent, and impossible of accomplishment. Experts were extremely dubious as to its outcome, and it was predicted that the dome was sure to collapse, carrying death and disaster in its wake, for not only would it have to support the weight of the workmen as the work progressed, but the heavy material required each day. Mr. La Farge, the architect, and Mr. Parson, the engineer of the building, alone showed their faith in Mr. Guastivino's ability to erect the massive structure without the aid of supports of any kind.

The entire dome consists of ordinary thin, flat terra

cotta tile, 6 x 12 inches, and an inch thick, laid according to a method of construction involving the cantilever principle. These tiles in size and shape are much like the bricks of the ancient Romans still to be seen in the walls of the little church near Canterbury. Beginning at the bottom course, the first six or seven rows of tile were laid one over the other breaking joints, in a special cement of plaster of paris. The next course, laid in Portland cement, was held in place by overlapping the tile below, and this process was repeated until the great dome was finished.

This particular method of dome building was invented by the elder Mr. Guastivino and has been extensively employed in public and monumental building in various parts of the country. It saves thousands of dollars by dispensing with costly false work and heavy staging for domes of such magnitude. But his son's startling audacity marks a new departure in this branch of industry, as never before has this method of construction been attempted on such a gigantic scale.

The dome springs from the four massive skeleton arches 62 feet square, of solid granite, rising 145 feet above the street, with a clear span of 85 feet. These arches will eventually carry the huge tower and spire, weighing millions of pounds, shooting above the dome and church 425 feet from the pavement.

The Cathedral itself, which when finished will cost ten

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