

WESTMINSTER PALACE.

The great Victoria Tower, said Mr. Philip J. Turner recently in a paper read before the Architectural Association, underwent various alterations. Originally designed a 100 ft. square, it has been reduced to 70 ft. The present fine arches, 53 ft. to the apex, replace an entrance of quite moderate dimensions. The numerous studies Mr. Barry made for this tower show that it must have caused him enormous trouble. The tower is 336 ft. high to the top of the pinnacles, and over 400 ft. to the top of the flagstaff. The flagstaff is of rolled sheet-iron, bolted together, and is 110 ft. long and 3 ft. in diameter at the base. The design of the Clock Tower must have given even more trouble, as drawing after drawing was made and rejected by the architect. The clock in this case had to be the prominent feature on the topmost story and of immense size, and the idea, carried out, of projecting the clock story beyond the body of the tower was at last adopted. The elevations, in a general way, have been criticized as being overloaded with ornament and small detail, but Sir Charles Barry's contention was that detail could not be excessive in amount if continued consistently in every part of a building. The whole palace covers a site of about 8 acres, the river front being 840 ft. in length. The House of Peers is a double cube, being 90 ft. long and 45 ft. high and broad; the House of Commons is 75 ft. long by 45 ft. wide; The work of the river wall was begun in 1837. An iron and brick construction was adopted in the floors; the roofs were constructed and roofed with galvanized iron, so that the entire building is of fire-resisting material.

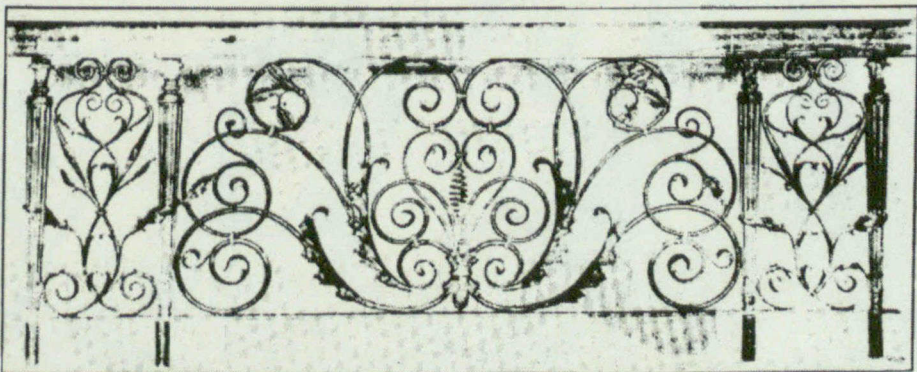
The first stone was laid on April 27, 1840, and the works were rapidly proceeded with. Between 8,000 and 9,000 original drawings and models were prepared for the works, in the preparation of which Mr. Welby Pugin ably seconded Mr. Barry. The former was appointed superintendent of the woodcarving; he also supervised the execution of the woodwork, stained glass, and tiles. In February, 1847, the House of

Peers was occupied for the first time, and in 1852 the Royal approach was finished, and finally the towers, last of all being the Victoria Tower, incomplete at the architect's death in 1860. The original estimate was £707,104, the amount expended being nearly two millions. The main item in this increased cost was the cost of the fittings, decoration, and sculpture required by the Fine Arts Commission. The cost per foot cube is about 2s. 6d.

A NEW IDEA IN CONCRETE-STEEL CONSTRUCTION.

In the discussion on Steel-Concrete at the Toronto Engineers' Club, (January 25th.) it was reported that in experiments made at the testing laboratory of the School of Practical Science, steel, after being stretched beyond its elastic limit, was found to possess the property of taking unto itself another elastic limit beyond which it can be stretched; analogous, we presume, to the phenomenon of the series overlapping flow limits of ocean tides on the seashore. We understand this theory was accepted by prominent engineers present as a reliable scientific induction. And what is more important, the stretching of structural steel beyond its elastic limit prior to being embedded in concrete was actually recommended as good engineering practice. From what we can glean, the objective of this cold treatment of the steel is to equalize the stresses in the dissimilar materials. But what is the price to be paid for this equilibrium of forces? After the limit stretching, is the resilient structural steel, as such, as perfectly adapted for its purpose? We should hesitate to occupy rooms in a sky-scraper built in accordance with this academic drawn-wire theory. Awaiting with interest, formal statement of the case, we betake ourselves to a calm meditation on J. E. Stead's aphorism, which reads thus: "The result of careful experiment is the voice of Nature speaking truth, the interpretation of it is the work of fallible humanity.—*The Canadian Engineer.*"

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