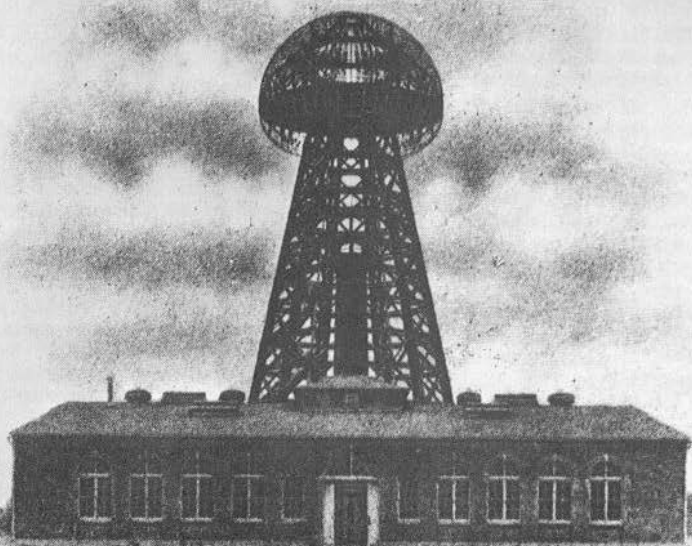


The Silent Tower



TESLA LABORATORY
LONG ISLAND N.Y.

by Leland I. Anderson

The life story of Nikola Tesla might well have been the imaginative product of a fiction-spinning writer. Some of his exploits even jar those who have made a searching inquiry into his work. One outstanding example is the behemoth tower and laboratory that he established on Long Island. Only last year (1967) the newly created Brookhaven Town Historical Trust designated the Tesla laboratory building as a historic site. The building is located 65 miles from New York City, on Route 25A between Rocky Point and Wading River, and now occupied by Peerless Photo Products, Inc.

The story of the famous tower and laboratory had its beginning in 1899. Tesla journeyed to Colorado Springs and erected an experimental station to test his hypothesis of wireless power trans-

mission. There, he produced the greatest point-to-point discharges achieved by man with a gigantic form of the oscillation transformer now bearing his name. The outer winding of the two-section transformer secondary was 51 feet in diameter ! Currents reached 800 amperes, and when operated at night the ground would glow from sparks between the grains of sand.

Having convinced himself of the soundness of his hypothesis, he returned to New York City early in 1900 and proposed a World System of wireless transmission. J.P. Morgan immediately put up \$150,000 for trans-atlantic communication. Famed architect Stanford White, who was fatally shot a half-dozen years later on the roof of old Madison Square Garden over a love triangle, agreed to design the tower and laboratory for the site to be named Wardencllyffe.

Several members have sent material on Tesla's Tower, notably, Bob Cobaugh, W2NX, a native of Long Island. Although a Tesla issue is planned sometime in the future, it was felt most appropriate to print Lee Anderson's article at this time to coincide with his talk at the Smithsonian.

By mid 1901 the large brick laboratory building and octagonal massive wooden tower began to take form. The building, which doubled as a transmitting station, housed a 200 KW Westinghouse alternator to excite the system. Four 7 foot high oil filled steel tanks contained the transformers; four others housed the condensers, and one special tank contained an elaborate assemblage of coils and regulating apparatus intended to give every imaginable regulation control that could be forseen. Only two such units were ever made, designed by Tesla and Westinghouse engineers, one delivered to Wardencliff and the other retained by the Westinghouse Pittsburgh operations.

The large skeletonized sphere topping the 187 foot tower was completed in 1903. It was 68 feet in diameter and weighed 55 tons, but was never enclosed with metal plates as originally designed. A 10x12 foot wall lined by tile, wood and steel, descended to a depth of 120 feet beneath the tower. Excitation currents passed through a 16 section telescoping shaft that rose under air pressure 300 feet from the bottom of the well to contact the spherical terminal. Large multi-strand cables connected the shaft termination to the periphery of the sphere.

On July of 1903 initial tests were conducted on the system. Local residents were aroused at night by startling lightning-like flashes, but no one knew exactly what the activities were at the plant because the whole operation was shrouded in secrecy. In a few years Tesla was no longer seen as a frequent visitor to the laboratory. The workers vanished. The project had reached an irrecoverable financial disaster. Morgan, who had invested in a project to capitalize on multi-channel wireless message transmissions across the Atlantic, was not the least interested in power transmission --- which Tesla viewed as the ultimate goal.

The laboratory was eventually abandoned. Lloyd Espenschied has written

that he visited the laboratory in 1908 when abandonment became known. He saw one of Tesla's radio controlled submarine boats built and demonstrated before 1900. According to an inventory taken in 1915 there were two (see, for example, photographs in the June, 1916, p. 88, *ELECTRICAL EXPERIMENTER*). But the place was vandalized soon thereafter-- by those as grave robbers in search of gold. All brass fittings were stripped from slate starting box panels, steam engine fittings, motors, generators, etc. Four truckloads of records, papers and books were strewn around. (Some of these materials may yet be lingering in the area.) A one-time caretaker remarked that half the garages in the vicinity were supplied from the laboratory. Exhibit cases containing Tesla's lecture apparatus, 1000 tubes and bulbs in various stages of evolution, and instruments that were given to him by Lord Kelvin, all disappeared.

Tesla's method of wireless power transmission, never publicly tested, was covered by patents 787,412 and 1,119,732 issued in 1905 and 1914 respectively. Reprints of published articles, such as those appearing in the *ELECTRICAL WORLD and ENGINEER*, March 5, 1904 and January 7, 1905, and other brochures covering his work at Shoreham, Long Island, have now become collector's items.

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