The first greenhouse was completed in 1893, with a second built the following year, and a third in 1895. It is said that these were the first large-scale greenhouses built to Japanese designs.

In 1896, the design for the greenhouses was completed when a curved walkway was built to connect the greenhouses to the newly built Imperial Rest House.

The Old Imperial Rest House was used by the imperial family to host parties and luncheons, while the greenhouses were used for strolls and as places to rest. Fresh flowers and vegetables used in the imperial court were grown in these greenhouses. The greenhouses produced over eight hundred orchid hybrids, and a great number of hybrids bearing the name "Shinjuku" were created here, such as the Cattleya Shinjuku. A list of orchids grown in the greenhouses was published as *The Orchid List of the Imperial Park Shinjuku 1914*. Some of the hybrids from this period are still on display.

During three massive firebombing raids in 1945, the gardens suffered extensive damage. The greenhouses, buildings, and plants were mostly destroyed. Only a few rare plants, including some of the orchids, survived. Wood was collected from the gardens and burned to provide warmth for the plants to survive the winter. Many of these plants are still in the greenhouses.