A subvertical cross section of the Suoana maar is exposed in the wall of the A.D. 2000 caldera on Miyakejima volcano. Its perfectly exposed 3D facies architecture give hints how phreatomagmatic explosion craters may grow. The Suoana maar has an about 400 m wide crater that is underlain by a diatreme that extends vertically to a depth of about 220 m from the crater floor. The outline of the diatreme resembles an upward-opening funnel with an almost vertical wall in the lower and an upward flaring wall in its the upper part. The upper half of the diatreme is filled with landslide deposits, mainly derived from the surrounding crater wall. The lower half is filled with the subsided chaotic breccia. Some coherent blocks were detached from the wall of the diatreme and preserved in the diatreme fill. The bottom of the diatreme is occupied by massive explosion breccia. Combination of an underground subsidence in the lower part and the surface landslide in its upper part created the Y-shaped cross-sectional geometry of the diatreme. Discharge of tephra from the bottom of the diatreme caused infill subsidence, which induced sliding of the inner wall of the crater. As a result, the topographic diameter of the crater became much larger than that of the diatreme itself. Suona maar – diatreme therefore is a perfect site to demonstrate the relative role of the active phreatomagmatic fragmentation driven and the passive subsidence- and landslide-induced crater growth process.