A velocity adjusting plate is provided above a substrate processing part in the interior of a substrate processing apparatus which is isolated from the external air. Thus, a downflow which is formed by conditioned air in the interior of the apparatus is separated into downflows having high and low velocities to be supplied to the substrate processing part and the periphery of the substrate processing part respectively. Consequently, the former downflow has a velocity which is suitable for controlling the temperature-humidity on the substrate surface and preventing the substrate from adhesion of particles and fine grains of a processing solution scattered from the substrate, while the latter downflow is suppressed to the minimum velocity which is necessary for preventing dusts and particles from creeping up by dispersion. Thus, it is possible to reduce consumption of air which is adjusted in temperature-humidity while isolating the interior of the apparatus from the external air.