Electron Cooling Possibilities for HERA, R. BRINKMANN, Y. DERBENEV, DESY; M. GENTNER, D. HUSMANN, C. STEIER, Physics Institute, Bonn University - Electron Cooling of the hadron beam in HERA could be a way to upgrade the luminosity for electron-proton and electron-heavy ion collisions. Because of the necessary high electron energy of 450 MeV for cooling protons the conventional approach using electrostatic dc sources is not possible. Instead an electron storage ring could be used. For this ring there are special requirements like small damping times, small emittances, high bunch lengths and a long straight section for interaction with the ion beam. The feasibility of such an electron storage ring has been studied, and the results with a possible solution are presented in this paper.