Bringing Beauty to HERA: On the Accelerator Modifications Currently in Progress for the HERA-*B* Experiment at DESY, R. Kose, B. Parker, M. Schmitz and F. Willeke, DESY - During the present winter 1995/96 shutdown modifications are underway to both the HERA proton and electron rings over ≈350m of the HERA west straight section. Modifications are needed to accommodate a new B-physics experiment, HERA-*B*, which will be the fourth HERA physics detector. The HERA-*B* detector uses interactions of beam halo protons with internal wire targets and presents a wide variety of accelerator design challenges which have had to be met. New p- and e-ring lattices are required to create free space for the detector and to provide suitable p-optics at the HERA-*B* target wires. A major shuffling of existing accelerator systems to new locations is also required and a delicate interlacing of e- and p-ring components as well as the manufacture new varieties of dipole and quadrupole magnets is undertaken. Many p-ring systems such as those for beam abort, beam collimation, and coupling control as well as the e-ring polarimiter are heavily modified. These modifications are described in this paper and since HERA re-commissioning is planned to be in progress by June 1996, some experience with the new configuration should be available to report.