We explain a local to global principle for the existence of a self-dual normal basis for G-Galois algebras over a number field. A general induction-restriction theorem leads to such a local-global principle under certain constraint on G which is satisfied if the normaliser of a 2-Sylow subgroup S controls the fusion of S in G. (jointly with Eva Bayer-Fluckiger). (Received September 22, 2011)