We study the tight-binding regime of a non-interacting electron in a two-dimensional crystal subject to a perpendicular constant magnetic field, and prove that the Fermi projection of the scaled continuum Hamiltonian converges in norm to that of a discrete tight-binding model as long as the Fermi energy lies within a spectral gap. A corollary of this is that the topological invariants of the respective systems are equal. The edge system is also studied and an analogous equivalence is proven between continuum and tight-binding reduction as well. (Received August 18, 2019)