Given the congruence subgroup $\Gamma = \Gamma_0(N)$ of $SL_3(\mathbb{Z})$ and the real quadratic field $E = \mathbb{Q}(\sqrt{d})$, we compare the homology of $\Gamma$ with coefficients in the Steinberg modules of $E$ and $Q$. This leads to a connecting homomorphism whose image $H$ is a "natural" (in particular Hecke-stable) subspace of $H^3(\Gamma, Q)$. The units $O_E^\times$ are the main ingredient in the construction of elements of $H$. We performed computations to determine $H$ for a variety of levels $N \leq 169$ and all $d \leq 10$. On the basis of the results we conjecture exactly what the image should be in general. This is joint work with Dan Yasaki.