We show that for each real locally $C^*$-algebra $A$ (projective limit of a projective family of real $C^*$-algebras) of a given type there exists a real locally Hilbert space $H$ (inductive limit of real Hilbert spaces) such that $A$ is locally isometrically $*$-isomorphic to a closed in projective topology $*$-subalgebra of the real locally $C^*$-algebra $L(H)$ of continuous linear operators on $H$. (Received September 16, 2014)