The Alexandria Union Station is an example of a national trend to build architecturally significant railroad facilities intended as community gateways. It is Colonial-Revival style with Federal details, and has a Flemish-bond brick pattern not found anywhere else in the city. The station looks much like it did when it was first built. Interior space is the same, however room uses have changed. For example, the original floorplan had racially segregated women’s waiting rooms and toilet facilities. Radiators are original, and probably the oak settees. The black and white floor tile and square bay window date from 1929 modifications. The freight depot was torn down in the early 1980s to accommodate construction for the Metro subway station.

In 1997, the City of Alexandria led a restoration funded through the Intermodal Surface Transportation and Efficiency Act of 1991. The restoration addressed accessibility requirements and enclosed the breezeway, but for the most part returned the station to its 1905 appearance.