What replaces the replacement windows?

This library, which houses rare books and manuscripts for an Ivy League university, is a marble neoclassical building built around 1900. Around 25 years ago the University replaced the old wood windows with new insulated glass windows, custom made from teak. But the new windows experienced warping, shrinkage and chronic leakage, which prompted the University to look for remedial options.

Water tests identified several different leakage paths, including glass perimeter leakage, leakage through mull posts and horizontals, and leakage at the sills and masonry, which had been dripping unseen into ductwork.

During this water test, water easily bypasses the glass perimeter sealant and enters the building. Options for replacing this sealant proved to be very expensive.

Leakage was causing damage to the plaster as well as rotting out the window sills.

Fluid-applied flashings with an upstanding leg were installed under the new windows, to minimize water seeping directly under the sash.

We developed options for repairing the windows in place, and for replacing them with new aluminum, custom made to match the existing profile. We recommended against using wood replacement windows, which had already failed to stand up to the sun and weather in the first replacement. Replacement turned out to be less expensive than a sealant repair with re-painting. The design was then further refined to use standard curtainwall with snap covers matching the historic profiles