

PYROTEK PROTECTS NATURAL HISTORY AT AUCKLAND MUSEUM

THE CHALLENGES

Tāmaki Paenga Hira Auckland War Memorial Museum recently completed major heritage restoration work.

In order to protect the fragile collections, specialised protection measures were required. Minimising any negative effect from vibration during construction work was of utmost importance for each fragile, irreplaceable piece.

Typically, vibrations occur where hard surfaces are involved and rigid connections between these can often lead to vibration spreading through the structure and into delicate specimens and sensitive areas, with damaging effect.

The negative impact of the construction only manifested once restoration was underway. Structure-borne vibrations began to be seen and have an effect on nearby cabinets and storage areas in the museum. It was to a level so critical that construction work ceased and could not continue until a Pyrotek team of specialists were consulted and a solution could be identified. Considering their importance to future generations, if left unaddressed this large collection of delicate pieces would be exposed to potential damage. Over 4.5 million treasures could be compromised. In order to address the unwanted transfer of vibration, a quick and effective solution was required.

THE SOLUTION

After thorough analysis, Pyrotek experts concluded a high performance material for isolation and mitigation of vibration was needed. An interlayer between tables, floors and display cabinets and pedestals would break the rigid connections between these to protect each fragile, irreplaceable piece from vibration.

To solve the issue, Pyrotek supplied Sylomer, an engineered visco-elastic foam in continuous rolls for install on-site below the storage cabinetry and underneath individual artifacts. Sylomer is a lightweight, polyurethane foam exhibiting properties of a damped spring. Used as an elastic interlayer between surfaces, it deforms under compression, always returning to its original form. With excellent vibration absorption and isolation properties Sylomer effectively isolates vibration energy, preventing transfer.

Pyrotek engineers calculated elasticity bearing for the load and chose Sylomer SR-55 as the best solution to reduce transmitted mechanical vibrations from the large selection of grades available.

Working together with museum staff the final system included the installation of a series of isolating pads to address the spread of vibration. An additional, yet fundamental benefit in this application was the ease of installation and effectiveness of the material with minimum impact to displays.



A large volume of artifacts are kept in archival systems of drawers.

RESULTS

Sylomer SR-55, did exactly what was required. It reduced transfer of vibration. Staff mentioned they “could no longer see the glass on the cabinets vibrating” and were especially thrilled to continue with restoration construction. After an extensive study, no damage could be found to the displays confirming Sylomer successfully protected the rare subjects in the collection.

With excellent vibration absorption properties and versatile ability to dissipate energy, Sylomer reduces transfer of energy through rigid storage materials to save damaging delicate artifacts.



Fragile taxidermy displays, and particularly delicate entomology specimens were critically at risk of damage without protection from vibration.

