
Conservation of Lincrusta-Walton wall coverings at the Nickerson House

Lincrusta-Walton, the most perfect and beautiful of all wall decorations.

Advertisement for Lincrusta-Walton, FR. Beck and Co., New York, ca. 1882

Take one step inside the Nickerson Mansion and its splendor is obvious. Yet behind every architectural detail there are hidden stories. They are the stories of the craftsmen and artisans who created the carved mantles, tiled mosaics, scrolled marble capitals, and elaborately painted decorative schemes on the walls and ceilings within the house. It would be almost impossible today to find artisans capable of producing such exquisite details – the necessary skills are all but extinct.

Dr. M. Kirby Talley, Founding Director of the Driehaus Museum, lent this perspective of history and craftsmanship to everyone involved in the restoration project. Understanding these hidden stories was the guiding force behind every preservation decision he made. Any and all materials original to the house were to be strictly conserved, wherever possible. This is what made the project so special to the conservators of Parma Conservation. It was a rare project. It was an enormous privilege that we will never forget.

– Peter Schoenmann, Head Conservator of Paintings and Murals, Parma Conservation

Lincrusta-Walton was a popular 19th-century wall covering created by Englishman Frederick Walton, the inventor of linoleum. This heavily textured wall covering was first patented in 1877 in Britain where it was manufactured to simulate materials such as pressed plaster relief, tooled leather, and carved wood. In the manufacture of Lincrusta, Walton used a fabrication method similar to the one he used for his linoleum product. Lincrusta was made from a mixture of oxidized linseed oil and wood pulp that was first machine-pressed and embossed with a relief pattern and then backed with canvas. The wall covering could then be decorated either at the factory or after installation. Lincrusta was first introduced to

the U.S. market in 1879, the year construction began on the Nickerson House.

Lincrusta-Walton was used in the decorative schemes of the Dining Room and the Smoking Room of the Nickerson residence. In both cases, the material was originally applied to the walls in a colorless state before being oil painted by master artisans to simulate Spanish embossed leather. In the Dining Room, above the lavishly carved wainscoting, the Lincrusta wall fill features a Renaissance-inspired design of embossed flowers and scrolling leaves highlighted in gold against a burgundy ground. The Japanese design of the Lincrusta used in the upper frieze of the Smoking Room features a dense pattern of embossed chrysanthemums in red, black, and gold.

Condition assessment

Despite having survived in remarkable condition, the Lincrusta-Walton of the Nickerson House required extensive conservation work. While Lincrusta was originally fabricated to mimic a variety of decorative materials, it is a far more delicate material than any of those it was meant to replicate. In many ways, Lincrusta is more like papier-mâché or handmade paper than wood or leather. Over the decades the Nickerson Lincrusta had become increasingly brittle, and a century's worth of grime, silt, and nicotine staining had accumulated over its surface. While the material's brittle state had led to numerous losses throughout, additional damage had been caused by previous owners of the house: during the Nickerson period, a series of framed paintings were hung over the Lincrusta of the Dining Room, while during the Fisher period a range of stuffed animal heads had left their mark upon the delicate wall covering.

Conservation

In 2006, Parma Conservation, a Chicago-based firm that specializes in the conservation of paintings, frescoes, and murals, was engaged to work on the Lincrusta of the Nickerson House. Conservators from Parma Conservation approached the Lincrusta as they would treat an oil painting that has darkened with age.

Analysis of the Lincrusta revealed that a microscopic particulate had accumulated on its surface. The particulate was composed of particles measuring less than one micron in diameter. At this molecular level, the dirt forms hydrogen bonds with the metal salts present upon the painted surface of the Lincrusta. In effect, no amount of mechanical action or soap can clean away dirt that has bonded in this way.

Concerns regarding the treatment of the Lincrusta arose from the levels of acidity found in the grime that coated the wall covering. Grime of this nature often has some measure of acidity that can affect the cleaning process. In order to ascertain the level of the grime's acidity, the relative pH of the painted Lincrusta was tested. The surface was wetted with deionized water and left to sit momentarily. Once sufficiently moistened a test strip (pH 4-10) was firmly placed upon the wetted area. The strip indicated that the dirt was slightly acidic, with a pH level between pH 6 and pH 6.5.

To negate the acidity of the dirt and to clean the already delicate Lincrusta in a controlled manner, Parma Conservation designed a cleaning solution that included a pH buffer. A pH buffer keeps the pH level at a nearly constant value, and in this case the buffer was adjusted with 1N sodium hydroxide and 1N hydrochloric acid to exhibit a constant pH. For the treatment of the Lincrusta of the Nickerson House,

the pH of the cleaning solution was adjusted to pH 7.5, slightly above neutral.

Conservators used mild chelating agents to lift the grime without disturbing the painted surface. Chelators are used in conservation to remove superficial salts and the tiny dirt particles attached to them. In the case of the Nickerson Lincrusta, a low concentration of anhydrous citrate was included to remove the salts and dirt particles, while still maintaining a constant pH. A nonionic surfactant was also added to assist in large particulate soil removal. Finally, the cleaning solution was thickened with inert methyl cellulose, which allowed the solution to remain at a very low strength so that time would serve as the main variable during the removal of all dirt and surface grime.

The gelled solution was applied to the Lincrusta with a soft brush and allowed to sit for approximately 45 seconds. The bulk of the gel and solubilized dirt was wiped away with dry cotton, and the area was rinsed with deionized water. The Lincrusta was allowed to dry completely, after which it was rinsed with white spirits to remove all trace material or residue left behind by the gel.

To compensate for areas of loss, shallow relief molds were taken from the original intact areas of Lincrusta. The negative molds were made from modeling clay, while the positive casts were made with fiberglass epoxy resin. The resin inserts were perfectly trimmed to fill the areas of loss, before being patched into place with Beva Gel and painted to match the cleaned Lincrusta. Areas of damage, including nail holes, broken seams, and edges, were repaired with a gesso filling material and inpainted to match the original Lincrusta.

Conclusion

The results of the conservation treatment were excellent. Meticulous cleaning revealed the vibrant color and high quality of the original Lincrusta, which remained luminous more than a century after it was first installed. To complete the treatment, Golden MSA Varnish, a reversible picture varnish with a low molecular weight, was brushed on the cleaned Lincrusta to protect it and to enhance the results. The varnish included an ultraviolet light stabilizer to protect the Lincrusta from fading, and a satin finish that was chosen to accentuate the Lincrusta without competing with the beautifully restored wood paneling of the rooms.

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