

Description of Project

The owners of 1830 N 2nd Street are seeking permission to have the home painted by RhinoShield of Wisconsin.

Based on the current state of the paint, which was originally put on in 2014 and reapplied in 2016, as well as statements from the previous owner and both long-time neighbors, we feel standard paint does not offer the level of protection necessary for this historic home based on its location and elements it is subjected to.

The east face and south face of the home receive constant sun from early in the morning until evening with no shade whatsoever (pictures attached). There is also no structure directly across 2nd Street to the West of the home and 20 feet of clearance on both sides of the home, resulting in high velocity wind gusts during storms all year round (pictures attached). Compared to other homes in Brewers Hill that have neighboring homes very close to one or both sides or heavy foliage, no protection from sun, rain, sleet or snow are afforded the home. The result of that combination of elements and forces is that, on those faces of the home especially, standard paint doesn't last very long and opens the surfaces to the effects of penetrative and destructive moisture.

From James Conlon, previous owner and the one who personally saved and renovated the property after it was condemned by the city in 1989:

“The siding on the east and south facing sides was installed in the 1990’s. So that material is not historic material. The north side of the house is about 100% original siding (but in excellent condition by being in shade 100% of the time). I continually had to be proactive repairing/repainting peeling and failed paint. Most of that work occurred on the east and south sides of the house where the sun is very intense. I think the sun is hard on the paint and the siding material which is cedar clapboard.

Bottom line is I believe the sun and weather do more damage to historic materials then pressure washing. It is my view that a better coating applied to the house will only improve the longevity of the material on the exterior. Whether that material is 25 years old or 125 years old.”

Background on Rhino Shield

Rhino Shield is an advanced water-based (latex) paint that has eliminated all the non-functional fillers common in less expensive, less effective paints, thus extending its lifespan far past traditional house coatings.

This formulation uses only the highest quality additives - 100% acrylic resin, titanium dioxide and 3M ceramic microspheres. The product is 80% solids by weight vs. 40% for standard paint. A material specification of the product (included in attachment) shows that it contains many of the same components of other high-end paints and primers. It is by definition “an acrylic-urethane-elastomeric primer and paint” that has been improved to eliminate the flaws inherent in standard paint.

Rhino Shield is FULLY vapor permeable (study results attached) yet is highly resistant to water penetration, making it perfect for historic structures. Houses are allowed to fully breathe, reducing moisture buildup and mold/rot issues. Its elastomeric properties allow it to flex and stretch with the expansion and contraction of wood-framed structures (which can cause the detachment of standard

paint which is inflexible). It also exceeds federal wind-driven rain specifications and reflects UV rays. All of which standard paint DOES NOT. Rhino Shield's unique features have been independently tested and verified by BASF and other labs (included in attachment).

Despite marketing statements to the effect, Rhino Shield is not actually a “permanent” coating. Rhino Shield of Wisconsin confirms that the product can be removed without damage to the substrate but admits that the process is much more difficult than regular paint. The reason it is difficult is the same reason the product is so good at protecting historic materials, its adhesion qualities. Easily removable paint does not protect in adverse conditions, which is the reason for the project in the first place. If it looks great and is working to protect the structure, there really is no reason to remove it. Rhino Shield can be repainted with traditional paint or another coat of Rhino Shield if color changes are desired later, with no reduction in protection.

Rhino Shield is applied with a fully professional 12-step process:

1. Thorough Inspection - this is done to determine that all surfaces and conditions are appropriate for the process (This has been completed and the trim and siding of the home is in excellent condition, also, no lead was detected on any part of the structure)
2. Trenching - If necessary, a trench is dug and the foundation waterproofed to prevent moisture wicking from the ground that might damage wood. (The home in this project has a raised foundation and siding is several feet off the ground making this step unnecessary)
3. Cleaning and Washing - the entire surface of the home will be cleaned using the most appropriate process for the material in place. This will include scraping and washing only as applicable and allowed by state statutes (max of 1,000 PSI according to the State Historical Office). Historical foundations will be fully protected when washing is performed at the bottom of the clapboard.
4. Patch and Repair - All cracks, holes, chips and breaks on the home are filled and sealed. (The inspection indicated only a few areas where small repair was needed and would be done with duplicate materials as to those in place).
5. Sanding and scraping - All loose pain on wood surfaces is removed by scraping and remaining paint is sanded by hand or machine, if allowed, to leave a smooth surface to coat.
6. Caulking - Once wood surfaces have been scraped and sanded, cracks and small holes around all windows and door casings are filled with long-lasting, flexible sealant to prevent moisture from invading the paint through these areas.
7. Masking - All areas which are not to be coated are carefully masked and covered.
8. Priming - A solid coat of Rhino Shield Adhesive Primer Sealer is applied to make the finish coat stay on the house without cracking or peeling.
9. Apply the finish Coat - One or two coats of ceramic infused top-coat paint is applied as necessary and applicable to the project. The top-coat is sprayed at a rate of 100 square feet per gallon or greater to achieve the optimal mil-thickness. Brushing or rolling is then used on wood siding to ensure all detail and grain are clearly visible and leaves a finish indistinguishable from homes painted with multiple coats of standard paint. (Depending on the level of detail of the area of the home being painted, one coat,

hand applied will ensure no dulling of architectural features. One coat of Rhino Shield is similar in thickness to two coats of standard latex paint).

10. Detail touch up - After the finish coat is applied, the exterior is hand detailed around windows, awnings, etc.

11. Clean up job site - complete cleanup of the job site is performed to ensure no paint chips or residue are left behind.

12. Final inspection - the job is not considered complete nor is payment transferred until the customer is fully satisfied in the quality and completeness of the work performed.

Color Plan

A professionally designed color plan was produced for the painting project by HistoricHouseColors.com which is run by Robert Schweitzer, who is a Professor of Historic Architecture at the University of Michigan – Ann Arbor. The reason for this is we want the most attractive paint job possible because of the longevity of the Rhino Shield product. Those designs are also attached.

Summary

1830 N 2nd St is a renovated historic home that occupies a prominent spot on the 1800 block of 2nd Street amongst many other historic homes. Its unique location and situation present unique challenges to traditional house paints, causing them to fail faster than is typically expected. To combat the damaging effects of sun and weather on the historic and replaced portions of the home, the owners would like approval to paint with Rhino Shield, an advanced elastomeric paint with ceramic compounds.

Attachments

Application for Certificate of Appropriateness

Material data sheets for Rhino Shield primer and paints

Infographic on differences between Rhino Shield and other paints

Photos of home, surroundings and current paint failure of 2 year-old paint

Color map of home created by HistoricHouseColors .com

