



## CASE STUDY

# USF Juniper Poplar Building

## Research & Development

**Project:** University of South Florida, Juniper Poplar Residential Building – 2019

**The Challenge:** As part of a residence hall renovation, the University of South Florida needed to repaint the building exterior while addressing growing concerns. The existing coating showed significant color fading and areas of delamination, highlighting the need for a more durable, fade-resistant solution in a high sun exposure environment. Additionally, heat buildup on the exterior contributed to increased cooling demand in a hot, humid climate.

With the building already scheduled for repainting, the university recognized an opportunity to support broader energy efficiency goals by reducing heat gain at the building envelope, helping lower cooling demand and improve overall energy performance without significantly increasing project cost.

**The Solution** The team selected a fade-resistant, heat-reflective coating system (**COOLWALL**<sup>®</sup> with Kynar<sup>®</sup>) to enhance performance beyond a standard repaint.

This solution addressed durability and long-term color retention while aligning with the university's goal of reducing heat absorption at the building envelope, supporting potential reductions in energy use.

Surface preparation included:

- Repairing delaminated areas with primer
- Priming remaining surfaces with re-cote primer
- Applying the **COOLWALL**<sup>®</sup> system on the exterior

**Why COOLWALL**<sup>®</sup> The decision came down to two key factors: fade-resistance and heat-reflectivity. Unlike conventional paint, **COOLWALL**<sup>®</sup> helps maintain color over time while reducing heat absorption, supporting improved comfort and potential cooling cost savings.

Key advantages included:

- Reduced heat absorption
- Improved occupant comfort potential
- Long-term color retention

Without this upgrade, the building would have:

- Continued absorbing heat
- Experienced faster fading
- Missed potential energy savings

## Results

Expected Impact:

- Lower cooling demand
- Extended color life with minimal fading and uniform finish

Performance Observations:

After 5 years, the **COOLWALL**<sup>®</sup> system continues to show strong color retention and improved cooling costs over time.

## Key Takeaway

A basic repaint became a performance upgrade, demonstrating how heat-reflective coatings can deliver long-term value in hot, humid climates.



## Supporting Materials & Performance Data

Testing was conducted to evaluate color stability under high sun exposure conditions on the south-facing elevation, representing the most demanding environment for long-term color performance. Energy use is based on actual utility data. Pre- and post-installation years were compared, excluding periods of reduced occupancy to ensure a fair comparison.

dE (Color Change Reference):  
 < 2 = Barely visible  
 2–5 = Slight Change  
 > 5 = Noticeable Change

### 5-Year Exposure Color Comparison

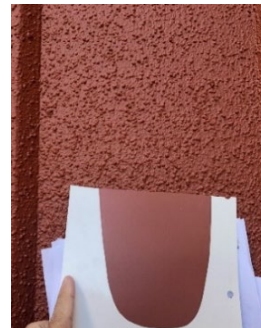
Color	Avg dE	Performance
SW 0008 Cajun Red	4.4	Maintained color integrity - Good
SW 6440 Courtyard	1.8	Maintained color integrity - Excellent
SW 6087 Trust Tan	1.5	Maintained color integrity - Excellent

### Cooling Cost Savings (kWh/month)

Period	Avg. Annual Energy (kWh x 1,000)	Change
Pre-Installation (2018–2019)	5,102	-
Post-Installation (2022–2023)	4,323	Approx. -15%



University of South Florida – Juniper Poplar Hall



Five years after the **COOLWALL®** with Kynar® coating application, the deep, bold hues remain true and fade-free, as seen when compared against color swatches from the original application.

## Technical Insight:

After five years of high-UV exposure, coatings maintained consistent color with minimal variation across all shades. Building energy use decreased by approximately 15% following application, indicating reduced heat absorption and improved cooling efficiency.