MCORABILITIES™

CASE STUDY

SERIES

PROJECT: Pump Impeller – Restore & Coat

OWNER: Coral Gables, FL TP

DATE: 2012

PRODUCTS: MCOR™ 3310 | mClad™ Metal
MCOR™ 2101 | mPlait™ MP

Even the Most Deteriorated Mechanical Parts Can Be Rehabilitated

George Merrick designed one of the nation's first fully planned communities - Coral Gables, located in South Florida in 1925. The city's design incorporated every amenity for its residents while preserving natural environments and maintaining international flavor. Today, the Public Works Department of

Coral Gables strives to provide quality customer service to residents, the business community, and other city departments through its various divisions, including the Utilities Division.

Saving its citizens money, while preserving the integrity of its water/wastewater structures, is a priority for the Public Works Department, where they strive for excellence for their citizens.

The city frequently inspects its sewer systems in an effort to be proactive and prevent problems or issues from occurring. During one of its routine pump impeller inspections, city employees found an impeller in seriously deteriorated condition, completely rusted out and eroding.

The initial reaction was to replace the impeller due to its poor condition. However, after careful consideration, realizing the

impeller could still function if the metal loss was restored, the Utilities Division decided to rehabilitate rather than replace. MCOR™, manufacturer of high-performance coatings and cold-weld repair polymers out of Hollywood, Florida, offered the solution the city was looking for. MCOR™'s 3310 | mClad Metal in combination with MCOR™'s 2101 | mPlait™ MP would be used to not only restore the pump, but also protect it from future erosion.

Proper surface preparation is key.

Prior to the application of these products, proper surface preparation was necessary, as in all rehabilitative coating jobs. The success of any coating application is directly proportional to the completeness of the steel preparation. The surface must be completely clean and sound. In this case, the pump was blasted down to its near-white metal finish to remove rust. This process made the holes caused by corrosion visible and easy to address.

Fabric reinforcement was placed over the holes to provide support and bridge the holes. MCOR™ 3310 | mClad™ Metal**,** an engineering-grade, steel-alloy-reinforced epoxy, was then used to resurface and fill. This paste grade polymer restores, repairs and reclaims metal and is often utilized as a high strength structural epoxy filler for load-bearing correction, tooling, and machining. Once cured, the material replaces worn or lost metal and restores the metallic profile with poly-mechanical bonding and reinforcing as a cold-weld alternative. It exhibits good heat tolerance and advanced wear resistance cladding as a solution for a wide range of industrial applications.

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MCOR™ 3310 was then used to reclaim

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MCOR™ 3310 | mClad™ Metal cured in approximately 24 hours for return-to-service. As a topcoat, MCOR™ 2101 | mPlait™ MP, a two-component low-to-medium- build ceramic epoxy coating, was used. Ceramics are proven technologies for combating the effects of wear and abrasion. MCOR™ 2101 | mPlait™ MP is combined with advanced curing agents and fluoroceramics. The cured ceramic material provides incredible resistance to chemical attack. It works well for most industrial applications requiring chemical resistance and abrasion protection, with a leveling-grade, controlled build-up for precise fitting and thickness.

The rehabilitation of Coral Gables' impeller pump ultimately saved its citizens money by not having to replace this costly piece. Due to the fact that MCOR™ products are easy to use and because the Utilities Division in Coral Gables has a crew capable of completing in-house projects, the city also saved money by not having to hire contractors. With MCOR™'s dual coating system using MCOR™ 3310 | mClad™ Metal, reinforced fabric fiber, and MCOR™ 2101 | mPlait™ MP as a topcoat, this 10-year-old pump was left better than new when it was put back into service. When initially installed 10 years ago, this pump was not coated or protected. MCOR's products extended the lifespan of this pump by returning it to its original state and also protecting it from future erosion due to the harsh Florida climate, as well as the corrosive wastewater environment. Additionally, this process was repeated with other pumps in similar situations. Jobs like this demonstrate how cities like Coral Gables can support its residents by saving them money while also providing excellent city services at the highest possible standards.

For more information on MCOR™ products, visit mcor.net.

For more information, please contact your local MCOR™ consultant

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