



# CASE STUDY

## MARKET APPLICATION FOCUS

High Rise Buildings

Concrete Repair & Protection

Carbonation Induced Corrosion

Project: Rochdale Village, Jamaica, NY  
Owner: Rochdale Village, Incorporated  
Architect: Castro-Blanco Pisoneri & Associates, New York, NY  
Domonic Picinich AIA - Fort Lee, NJ  
Contractor: Jimco Restoration Corporation, LI City, NY  
Year: 1997/98

### THE PROBLEM



Rochdale Village, home to over 20,000 people, is comprised of twenty 14-story buildings constructed in the late 1960's. A combination of carbonation and inadequate cover to the reinforced concrete balconies had caused extensive cracking and spalling of concrete cover, resulting in loss of concrete and a clear potential safety issue.

The concrete repair problem together with window sealant replacement and balcony waterproofing requirements were addressed by the Architects and the \$3.5 million contract awarded to Jimco Restoration Corporation.

### THE SIKA SOLUTION

Inspection by the Architect indicated carbonation up to 3/4" in some of the cast-in-place concrete and it was agreed that carbonation protection following repair was an important investment in order that concrete areas not being repaired would be protected against latent damage.

**Repair** - All loose and spalling concrete was removed from the balconies by Jimco Restoration Corporation back to sound concrete. Exposed rebar was primed with Sika Armatec 110, an epoxy modified cementitious slurry primer, which also acts as the bonding bridge for all repairs. Concrete cover was replaced to restore line and level using SikaTop 123 Plus polymer modified repair mortar.



**Protection** - All balcony waterproofing was carried out using Sikadur 22 Lo-Mod, a two-component, solvent free epoxy resin, which when broadcast with a blended, colored aggregate, provides an attractive, highly durable, slip resistant, waterproof wearing course.

All balcony edges and soffits were protected with Sikagard 670W – a water based acrylic surface coating with a track record of more than 20 years of proven anticarbonation case history.

All window sealant was replaced with Sikaflex 1A, a single component polyurethane high grade sealant.



# Sika's System Approach to Concrete Repair and Protection

## Anti-Corrosion Primer and Bonding Bridge

**Sika Armatec® 110 EpoCem®** - protects rebar in areas of inadequate cover.

## High-Performance Repair Mortars

**SikaTop® PLUS** - two-component, polymer modified mortar containing Sika FerroGard 901 corrosion-inhibitor.

Sikacem mortars are machine-applied by dry-spray equipment for large scale repairs.

## Problem Joints/Cracks Sealing System

**Sikadur® Combiflex®** - a unique strip and seal system used to seal problem joints and cracks, even those undergoing extreme movement.

## Crackbridging Deck Membrane

**Sikafloor® 450/455** is a single-component polyurethane system used to provide a durable, abrasion resistant, waterproofing layer for balconies, parking and plaza decks.

## Hard Wearing Epoxy Overlay

**Sikadur® 22 Lo-Mod** epoxy resin will provide decorative hard wearing, slip resistant, overlay systems for balconies not requiring a crack bridge membrane.

## Joint Sealing

**Sikaflex®, High Performance Sealants** - are premium-grade polyurethane joint sealants that are fully compatible with Sika's concrete repair systems.

## Anti-Carbonation Coatings

**Sikagard® 550W and 670W** - protect concrete facades from the damaging effects of carbon dioxide (carbonation), water and pollutants. Either crack-bridging (550W) or rigid (670W), both are high-performance protection coatings, available in a variety of decorative colors.

## Epoxy Injection and Bonding

**Sikadur®** - epoxy resins help restore structural integrity by injection into cracks and voids. The most comprehensive range of epoxy products for structural bonding and grouting.

## Structural Strengthening Systems CFRP

**Sika CarboDur®** - a proven system of external strengthening using epoxy-bonded Carbon Fiber Reinforced Plastic (CFRP) laminate strips. Stronger than steel, yet lightweight and non-corrosive, this system can solve unique strengthening problems in a variety of concrete structures.



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