



CASE STUDY

MARKET APPLICATION FOCUS

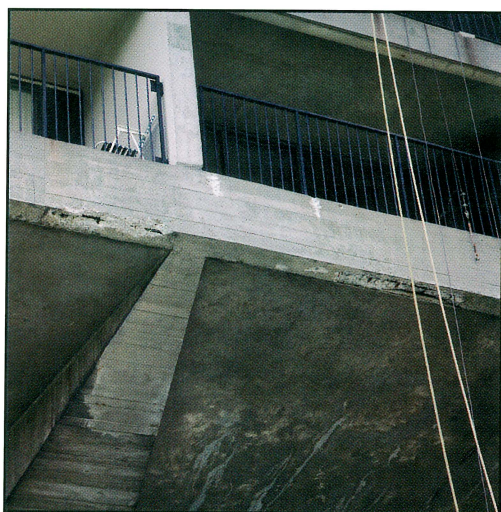
High Rise Buildings

Concrete Repair/Protection

Carbonation Induced Corrosion

The Project: Horizon House
Fort Lee, NJ
The Owner: Horizon House Apartment Corporation
The Specifier: Feld, Kaminetzky & Cohen
The Year: 1995-1997

THE PROBLEM



Constructed of cast in-place concrete 30 years ago, this 1200-unit high-rise apartment complex in Fort Lee, New Jersey showed extensive cracking and spalling on the concrete cover of each of its six buildings. Although patch repairs had been carried out periodically, there were continued signs of deterioration.

With its impressive view of the Manhattan skyline, Horizon House demanded a long-lasting face lift to maintain its luxury image.

THE SIKA SOLUTION

Following their condition survey, consulting engineers Feld, Kaminetzky and Cohen reported that the damage was being caused by extensive carbonation of the concrete, leading to corrosion of its steel rebar and spalling of the concrete cover.

In light of the extent of deterioration and the need for both immediate restoration and longer-term stability, it was decided to implement a "repair and protect" system that would not only provide for local patch repair, but would also guard against further carbonation. It was also important that while preventing the ingress of carbon dioxide, the system would also allow the concrete to "breathe" so that water vapor could escape and fine cracks could move with changes in humidity and temperature without causing further problems.



The Sika system specified by Feld, Kaminetzky and Cohen called for the use of SikaTop® repair mortars with Sikagard® Elastocolor, an anti-carbonation, protective coating. With a documented record of long-life protection, this customized combination of Sika products will keep Horizon House healthy for many years to come.



For Concrete Building Facades... Sika's System Approach to Concrete Repair and Protection

Anti-Corrosion Primer and Bonding Bridge

Sika Armatec® 110 EpoCem® - protects the steel from corrosion in areas of inadequate cover. Improves bond of repair mortar to both the substrate and steel.

High-Performance Repair Mortars

SikaTop® PLUS mortars - two-component, polymer-modified materials containing Sika FerroGard 901 corrosion-inhibiting admixture.

Corrosion-Inhibiting Impregnation

Sika FerroGard® 903 - spray-applied to protect areas outside the repair zone against future damage. Proven to penetrate and reduce corrosion effects of carbonation and salt exposure.

Surface Levelling/Pore-Filling Mortars

SikaTop levelling mortars - achieve a level surface by filling pores, bugholes, or other irregularities in the surrounding substrate. Also provides additional effective concrete cover.

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.

Crack-Bridging Deck Coatings

Sikafloor® Traffic Systems - protect decks, ramps, grandstands, and walkways with a durable wearing surface which waterproofs and prevents chloride ingress.

Joint Sealing/Waterproofing

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

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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