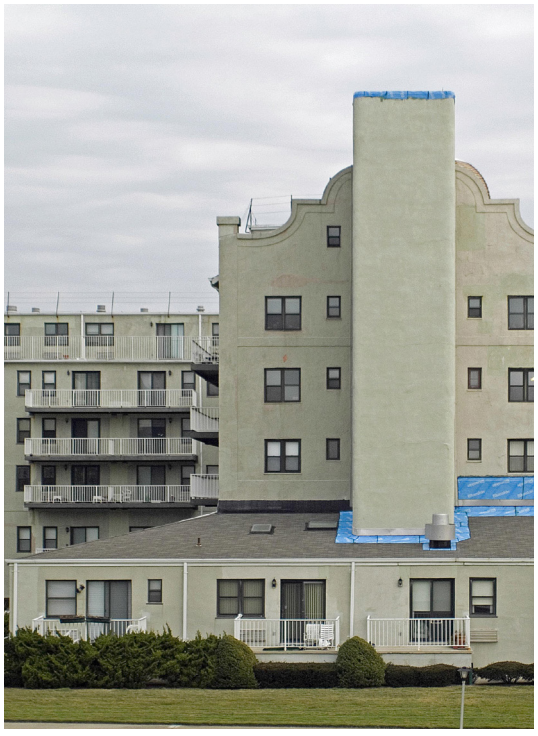
Lido Beach Towers

The Pink Lady Gets an "Energizing" Facelift

The Lido Beach Towers condominium community on Long Island, New York, had seen better, more glamorous and more colorful days. Yet, over the next five years, "The Pink Lady" would be restored to her former glory and serve as a dramatic case study of the promise and potential of EIFS as a retrofit strategy for aging and deteriorating buildings. And thanks to the non-intrusive nature of the EIFS "second-skin" approach, it's an ideal game plan for inhabited, operational buildings.

Plus, in an unexpected twist, it would showcase the phenomenal energy-efficiency-boosting "green" qualities of Exterior Insulation and Finish System (EIFS), which in the case of Lido Beach Towers, yielded energy savings hovering around an eye-popping 33 percent.



Sto Products: - StoTherm™ Premier NExT®
- StoGuard

Engineer:	P.E. Consulting Engineers
Contractor:	Flag Waterproofing & Restoration
Contact information:	www.stocorp.com

Built in 1929, the bright bubble-gum colored landmark began life as the Lido Beach Hotel – a 300-room seaside retreat complete with twin Moorish-style cupolas, indoor and outdoor pools, golf course, beach cabanas and restaurant with retractable roof, and a night club. In time, the magic faded, and the hotel changed hands several times until 1981, when it succumbed to the fate of so many other former hot spots: condominium conversion.

Soon, the pink was gone, replaced by drab coatings (applied over stucco on terracotta block walls). The building, already showing its half-century age, started on another 25-year slide. For years the condo board continued the strategy of applying various surface treatments, but after setting a budget to repair all the stucco, and promptly using it up in just one wing of the building, they quickly realized ongoing "band-aid" fixes wouldn't work. Indeed the proposed cosmetic fixes to just the stucco would have cost nearly $3 million. The eventual EIFS retrofit of the entire structure – giving the building a whole new "green" skin – came in at $5 million. New balconies, doors, windows, roof and replacement of both cupolas – a given in either repair or retrofit scenarios – boosted the eventual price tag to over $15 million.

Ultimately, the board hired Huntington, NY engineering firm, P.E. Consulting Engineers, retaining its principal, Jordan Ruzz to do a peer-review of the various recom-mendations up to that point, and make his own. In his initial engineering report, Ruzz condemned two stair towers, after one had already collapsed due to structural deterioration. Sto Corp building scientist John Edgar recalls, "This was clearly a build-ing in distress."

Water leaks were endemic – well over 100. The original heat-pump sleeves – ordinary steel – were rusted, and condensation, produced by exterior air conditioning units, had leaked into the exterior walls, wreaking havoc in the units below. Air leaks were just as pervasive.

After securing commitments from Sto – with whom Ruzz had a 15-year relationship – that his firm would receive their full engineering and logistical support, Ruzz agreed to take on the project. His recommendation? A StoTherm TM Premier NExT® EIFS, which would essentially thermally "wrap" the building in 3"-4" of insulation.

He based his decision on the building's climatically exposed location, its age (nearly 80), Sto's dew point analysis, and the poor alternatives of doing nothing: continual maintenance – with no ROI – and steady deterioration; or demolition/replacement. Plus, as Ruzz recalls, "We were working on an occupied, operational building, so we needed to accomplish all this with minimal disruption to normal life."

Knowing that EIFS would address the myriad hygrothermal leaks in the structure, the immediate challenge, as Ruzz recalls, was "how to best attach the EIFS since much of the existing surface of the building was cracked, disbonded and loose." Ruzz and contractor Anthony Colao of Flag Waterproofing & Restoration (Elmont, NY) were concerned that while fasteners might hold, the material between them would loosen. And thanks to the many surface treatments applied over the years, the walls weren't plumb and square, making it difficult to attach anything and have it come out straight.

It was at this point that Ruzz and Colao devised a clever solution to address the inherent unevenness of the surface: a Z-channel arrangement composed of two attached L-angles. The angles were 10-foot sections of 18-guage galvanized steel placed verti-cally on the building at 16" intervals.

Ruzz explains: "We took the first angle and conformed it to the uneven surface by cutting the perpendicular leg of the angle where necessary, so the angle bent into the unevenness." Once they had the first angle firmly affixed (using ZEMAC nail-in fasteners or screws) to the building, they attached the second angle – fabricated to be perfectly straight – to the perpendicular of the first.

The beauty of the Z-channel arrangement was that, whether or not the perpendicular portion of the first angle needed to be "cut-and-gathered" (roughly two-thirds of the building's walls required it), it offered a flat surface to which the second angle could be affixed. The other half of that second angle, a surface now parallel to the plane of the wall, offered the requisite flat and plumb surface on which to then mount the DensGlass Gold sheathing.

Sto then did a dew point analysis on the system and concluded they needed to mini-mize airflow behind the DensGlass (in the space created by the two angles), recom-mending two insulating strategies. First, they prescribed affixing 15¾" wide pieces of 1" EPS board directly to the building wall in the 16" interval between each set of angles.

Secondly, since the walls' irregularities created varying gaps between the DensGlass and the EPS, they proposed spraying expandable foam between the two – every eight feet vertically as you moved across the wall – to fill that cavity, and ensure a firm, plumb surface on which to affix the EIFS. The DensGlass was then coated with Sto-Guard® waterproof air barrier as the final layer before the application of the EIFS.

Lido Beach offered an opportunity for Sto to employ their innovative variation on the normal StoTherm™ Premier NExT® EIFS, known, informally, as "EIFS-with-Drainage" (a.k.a. "Water-management EIFS"). Because it's vapor-permeable, EIFS can handle small amounts of incidental moisture, but if a poor-quality window leaks gallons of water into a wall assembly, it can't get out.

What Sto designed – and what the codes now require – is a process by which rough window openings are protected with flashing before the window goes in to deflect water away from the wall. EIFS-with-Drainage specifies that waterproof StoGuard® (last step before the EIFS) be installed with vertical ribbons of adhesive, so any incidental water that penetrates the EIFS can drain between those ribbons and drain to the exterior.

As Edgar notes, "The beauty of this approach is simplicity. A contractor doesn't have to deviate from the usual EIFS model except to add StoGuard®, and apply the adhesive in a different way; they'll be using materials they've used many times before. It's extremely technically sophisticated, but extremely simple to install."