MODERNIZING THE 1958-73 MANHATTAN OFFICE BUILDING

THE COSTLY DECLINE OF NYC CURTAIN WALL BUILDINGS — AND WHAT YOU CAN DO ABOUT IT

During the late 50s through the early 70s, millions of square feet of commercial office buildings were built in Manhattan – many with single-glazed curtain wall facades. This type of architecture was popular at the time, dominating the Class A office space market. Today, however, single pane curtain wall buildings are among the most energy inefficient buildings in NYC. Rising energy costs, aging HVAC systems and advancements in window glass technology have sharply diminished the value of these buildings.

With the growing concern over sustainability, GHG emissions, energy efficiency and environmental impact, building owners are under increasing pressure to modernize buildings in order to maintain their commercial value and appeal to prospective tenants. Owners of first generation curtain wall buildings can not only significantly decrease annual energy costs, but also improve comfort for tenants by addressing the building envelope.

This brief report analyzes the three basic options that commercial building owners in NYC have when it comes to modernizing their depreciating office buildings for the 20th century.

20%
Utility Savings On Average

35% Heating

8% Cooling

UNDERSTANDING YOUR OPTIONS

OPTION 1: MAINTAIN

Maintaining day-to-day operations of your building is choosing to live with the problem of energy inefficiency regardless of the costs. Since this essentially equates to doing nothing, most building owners default to this option. In turn, they absorb the high costs of aging boilers and chillers and low-performing single pane glass windows. These buildings account for tens of millions of square feet of commercial office space in New York City.

PROS
No disruption to tenants
No upfront cost

CONS
High energy costs
Environmentally unfriendly

OPTION 2: RETROFIT

Retrofitting the facades of older buildings - especially when combined with HVAC system improvements - is by far the most convenient and cost effective solution. Interior window systems, which can be installed without tenant disruption, reduce annual energy use and are LL85 2016 NYCECC Energy Conservation Code compliant. The Javits Center (pictured right) underwent a complete window retrofit that saved the owners $1.5M a year in energy costs and is projected to yield a 5-year ROI.

PROS
No disruption to tenants
Environmentally friendly
Quick ROI

CONS
Moderate upfront cost

OPTION 3: REPLACE

Gutting and completely replacing the building facade is also an option, although not a very convenient one. In addition to the astronomical material and labor costs, replacing a building facade requires the removal of tenants which further adds to the total expense of a deep renovation. The building located at 1271 Avenue of the Americas (pictured right) is currently undergoing a curtain wall replacement that will cost an estimated $90M.

PROS
Essentially a new building
Environmentally friendly

CONS
Astronomical costs
Major tenant disruption
Intensive renovation

HOW IT WORKS

With 40 years of experience leading the window retrofit industry, Thermolite has developed a seamless and comprehensive process for helping owners modernize their building, improve tenant comfort and cut energy costs.

1

SITE VISIT

A Thermolite representative visits your building and examines the existing facade and window system to determine if a window retrofit is a viable energy solution.

2

COMPLIMENTARY ENERGY MODELING

Thermolite performs an energy model on the existing frame to calculate exactly how a window retrofit will improve the energy performance - including U value, air infiltration and solar heat gain coefficient.

3

DETAILED ENERGY SAVINGS ASSESSMENT

Thermolite provides a detailed report estimating the expected overall energy savings in actual dollars, as well as specific energy and energy cost savings for heating and cooling.

4

RETURN-ON-INVESTMENT CALCULATIONS

Thermolite provides a detailed return-on-investment analysis that calculates the implementation costs and expected economic payback for each viable window retrofit option.

5

COMPLIMENTARY WINDOW MOCKUP

Thermolite fabricates and installs a full scale window mockup in the building to serve as a test sample for performance and design evaluation.

6

INDEPENDENT ENERGY ANALYSIS

Thermolite works with a 3rd party energy consultant to analyze the performance of the mockup and compare it with the data previously provided with the energy model report.

7

TURNKEY INSTALLATION

Thermolite provides a turnkey window retrofit installation with local labor, modernizing the curtain wall building, improving tenant comfort and reducing annual energy costs.

THERMOLITE WINDOW OVERVIEW

Thermolite interior windows are an affordable and effective solution for upgrading the curtain wall of single pane systems. Widely used by older buildings in need of total window replacement, Thermolite windows improve thermal performance, reduce air infiltration, require no maintenance, and can be installed for a fraction of the cost of traditional replacement windows. Thermolite windows are also available for security applications including blast mitigation, hurricane protection and signal defense.

Existing Curtain Wall

The existing windows stay in place, preserving the original appearance and design integrity in accordance with federal preservation guidelines

Insulating Air Cavity

An insulating dead-air space between the existing window and the Thermolite window provides an extra layer of insulation that improves the thermal performance

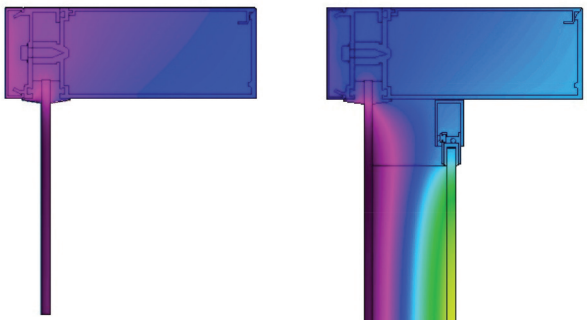
Low-E Glass Panel

Thermolite high-performance window panes use laminated, tempered or insulating glass with a low-e coating to keep your building warm during winter months and cool during summer months

Aluminum Frame

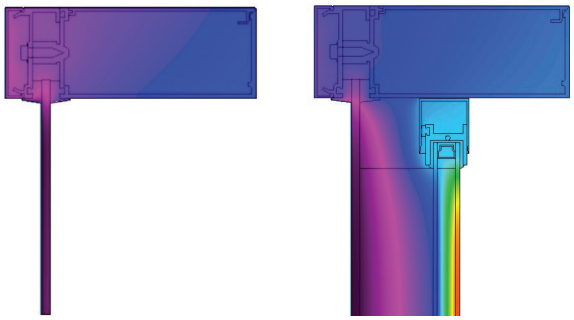
Thermolite frames attach easily to your window opening, forming an air-tight seal that reduces air infiltration by 50-90%.

RetroWAL™ Silver Series (single to double)
Color Infrared Frame Head

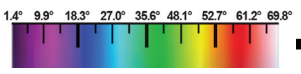


w/o Thermolite | with Thermolite

RetroWAL™ Gold Series (single to triple)
Color Infrared Frame Head



w/o Thermolite | with Thermolite



Thermolite, LLC
3502 West Sample Street
South Bend, IN 4661
574-234-4004
ThermoliteWindows.com

THERMOLITE™