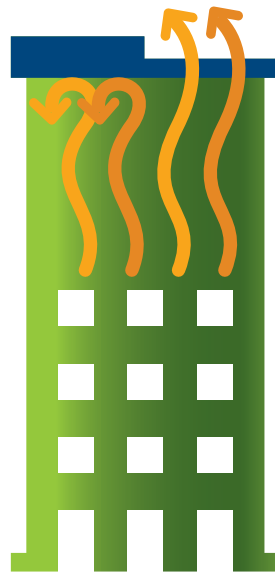


OPPORTUNITY

How much energy is used for heating, ventilation and air conditioning (HVAC) in U.S. office buildings?

37%
OF ENERGY
GOES TO HVAC¹



A LARGE PERCENTAGE ROUTINELY ESCAPES THROUGH THE BUILDING ENVELOPE

TECHNOLOGY

How do VIPs save energy?

R-50 INSULATION VALUE

WITHIN A THIN PROFILE, 1" COMPARED TO 15" FOR CONVENTIONAL

M&V

Where did Measurement and Verification occur?

OAK RIDGE NATIONAL LABORATORY evaluated the performance of a VIP retrofit provided by Thermal Visions, Inc. at the US Post Office and Courthouse in Camden, New Jersey

RESULTS

How did VIPs perform in M&V?

8-10%
ENERGY SAVINGS
WHEN COMPARED TO CODE-COMPLIANT ROOFS²

ROBUST PERFORMANCE
WITH PROPER PLANNING³

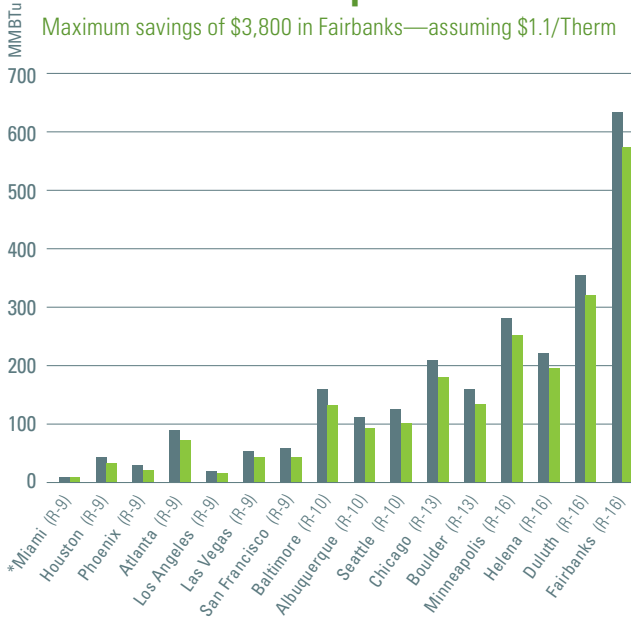
SAVINGS FOR R-50
GREATEST IN SINGLE-STORY BUILDINGS IN EXTREME CLIMATES⁴

Modeled Energy Use in a Single-Story Office Building

Largest savings in extreme climate zones, such as Fairbanks and Phoenix

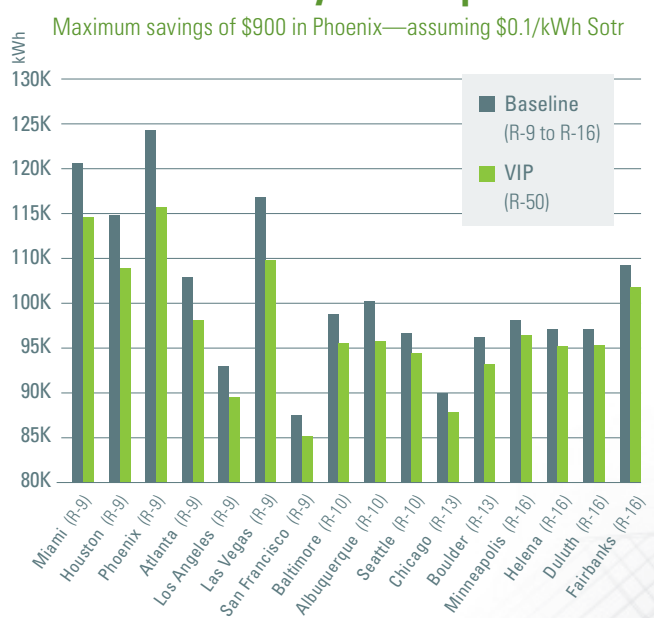
Annual Gas Consumption

Maximum savings of \$3,800 in Fairbanks—assuming \$1.1/Therm



Annual Electricity Consumption

Maximum savings of \$900 in Phoenix—assuming \$0.1/kWh Sotr



*Cities listed by climate zone from Hot-Humid (1A) to Subarctic (8A)¹

DEPLOYMENT

Where does M&V recommend deploying VIPs?

RETROFITS

WHERE R-50 IS REQUIRED AND INSTALLING CONVENTIONAL INSULATION NECESSITATES COSTLY ALTERATIONS

¹Vacuum Insulated Panels in a Roofing Application Camden U.S. Post Office and Courthouse Camden, New Jersey. Dan Howett, Therese Stovall, Mahabir Bhandari, Kaushik Biswas (ORNL), March 2014, p.1 ²ibid, p.15 ³ibid, p.2 ⁴ibid, p.2