GPG FINDINGS

The GPG program enables GSA to make sound investment decisions in next-generation building technologies based on their real-world performance.

www.gsa.gov/gpg

DUAL-ZONE INDOOR SHADES

O P P O R T U N I T Y

How much energy can window technologies save in U.S. commercial buildings?

TECHNOLOGY

How do dual-zone indoor shades work?

11% REDUCTION IN PRIMARY ENERGY USE

WITH SOLAR CONTROL & DAYLIGHTING TECHNOLOGIES

UPPER ZONE FOR DAYLIGHT

WITH AUTOMATICALLY- OR MANUALLY-CONTROLLED LOUVERS

LOWER ZONE CONTROLS GLARE & PRESERVES VIEWS

M & V

Where did Measurement and Verification occur?

RESULTS

How did the dual-zone indoor shades perform in M&V?

DECREASE IN ENERGY USE

Compared to fabric roller shades (25% to 51% for lighting; -4% to 15% for cooling), increase compared to venetian blinds (150% to 300% for lighting, 5% to 36% for cooling)²

ROI NEGATIVE

Compared to both fabric roller shades and venetian blinds³

80% OCCUPANT PREFERENCE

Over baseline vertical blinds⁴

LAWRENCE BERKELEY NATIONAL LABORATORY measured performance of a dual-zone indoor shade provided by LouverShade at the Advanced Windows Testbed in Berkeley, CA against roller shades and venetian blinds. LBNL assessed facility manager and occupant satisfaction at the Ronald V. Dellums Federal Building in Oakland, CA, where the dual-zone shades replaced vertical blinds.

Where did Measurement and Verification occur?

Measured Energy Use at the Advanced Windows Testbed

Compared to venetian blinds; points above diagonal line indicate that energy use is greater than venetian blinds

DEPLOYMENT

Where does M & V recommend deploying dual-zone indoor shades?

CONSIDER FOR REPLACEMENT OF ROLLERSHADES

Manual upper shades provided the best balance between financial performance and occupant response. Not broadly recommended to replace venetian blinds from a cost-savings standpoint.

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