Occupancy Enabled HVAC Optimization

How the **IBIS Smart Floor** technology saves an average of 15% of total building energy costs while maintaining occupant comfort, health and wellness.

Overview

With Corporate Real Estate operating in the new hybrid work force environment, occupancy levels have plummeted to 20% or less in some cases, yet most traditional HVAC systems still operate based on building time of day schedules. This leads to unnecessary waste of gas and electricity in areas where it's not required. The goal of this case study was to see how the IBIS Smart Floor Technology can reduce this wasted energy usage while still maintaining comfort, health and wellness for their occupants.

Approach

Systems Integration

IBIS integrated occupancy enabled lighting control systems with HVAC systems.
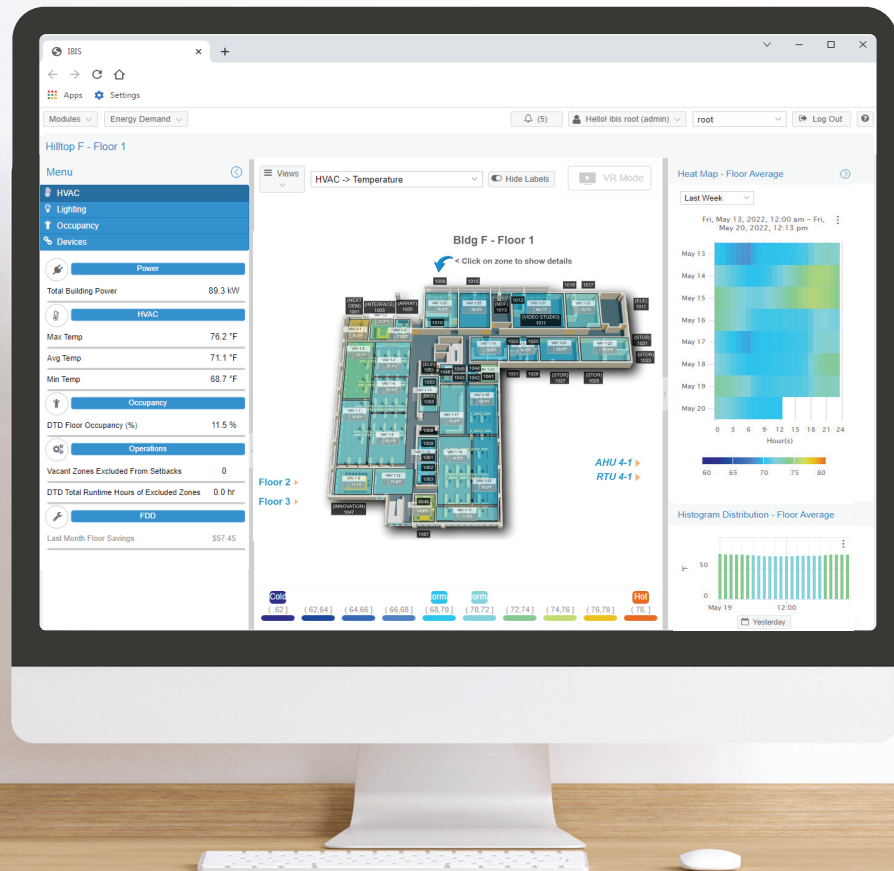
On Demand Energy Use

Through IBIS Smart Floor Integrated Smart Sequences of Operations, IBIS directed HVAC systems to use energy only when and where it was needed.

Occupant Comfort

To ensure that energy savings are not achieved at the expense of occupant comfort, IBIS implements monitoring of occupant comfort KPIs that are integrated into the Smart Floor Sequence.

IBIS Smart Floor End-To-End Commissioning

Applied IBIS Analytics to commission the IBIS Smart Floor to ensure that all smart floor sequences are working as intended.

Results

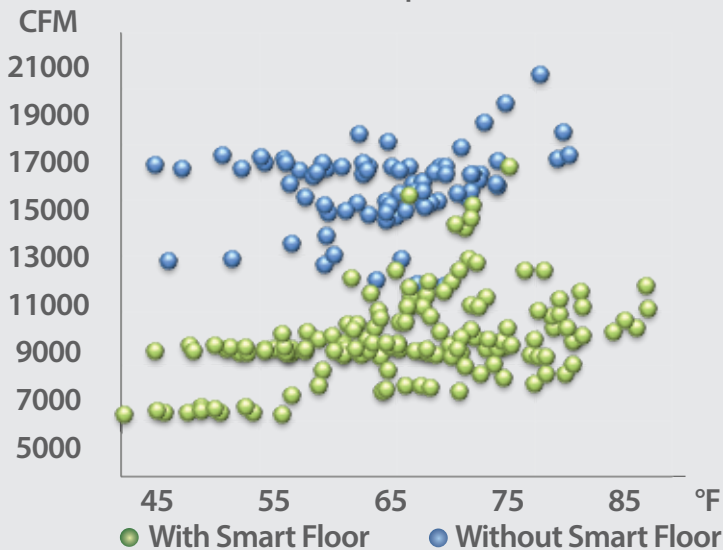| 15% SAVINGS On Building Utility Costs	30% SAVINGS On HVAC Energy Costs	2 - 3 Years ROI IBIS Smart Floor

Measurement and Verification

Air Handler Output Combined with Outside Air Temperature

CFM axis: 5000, 7000, 9000, 11000, 13000, 15000, 17000, 19000, 21000
°F axis: 45, 55, 65, 75, 85

● With Smart Floor ● Without Smart Floor

Average Zone HVAC Monthly Operating Cost

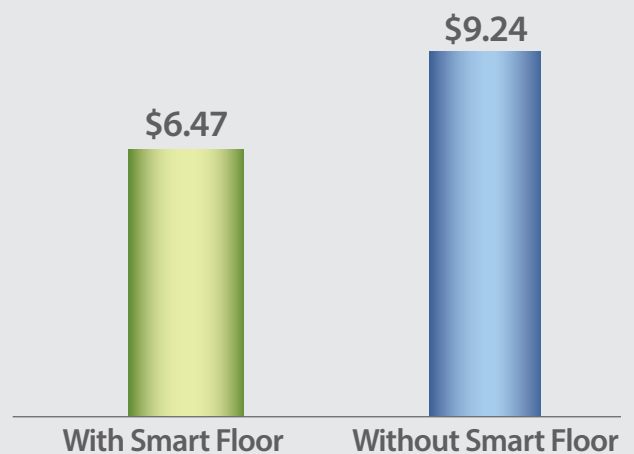$6.47 — With Smart Floor
$9.24 — Without Smart Floor

Established Baseline Data

Established baseline data set from existing HVAC system trends where the IBIS Smart Floor Sequence was not enabled.

Established Reporting Data

Established reporting period data set from existing HVAC system where the IBIS Smart Floor Sequence was enabled.

Normalized Outside Air Conditions

Measurement and Verification was performed during similar outside air conditions (< 85 °F) to avoid false positive results.

Industry Standard M&V

Applied an industry standard methodology for measurement and verification of results to ensure accuracy.

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