



SF Environment

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A Department of the City and County of San Francisco

Can Data Accelerate Energy Efficiency in San Francisco?

July 2, 2014

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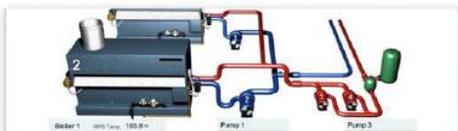




Mayor's Task Force
on
**Existing
Commercial
Buildings**

Final Report and
Recommendations For
The City and County of
San Francisco

December 2009



Scope

- Existing Commercial

Composition

- Owners' Representatives
- Property Managers
- Contractors
- Operators
- Engineers
- Architects
- Finance
- Utilities

The Task

- Cost effective energy savings
- Minimum costs
- Measureable



All commercial buildings must have:



A Benchmark

An Action Plan

Transparency



3 year phase-in: 2011-2014

Mandatory:

- Benchmarking with limited public disclosure (annual)
- Energy audits or retrocommissioning (every 5 years)

Voluntary:

- Capital improvements
- Operations and calibration
- Tenant engagement
- Financing & incentives
- Policy as Customer Relationship Management

Existing Commercial Buildings Ordinance

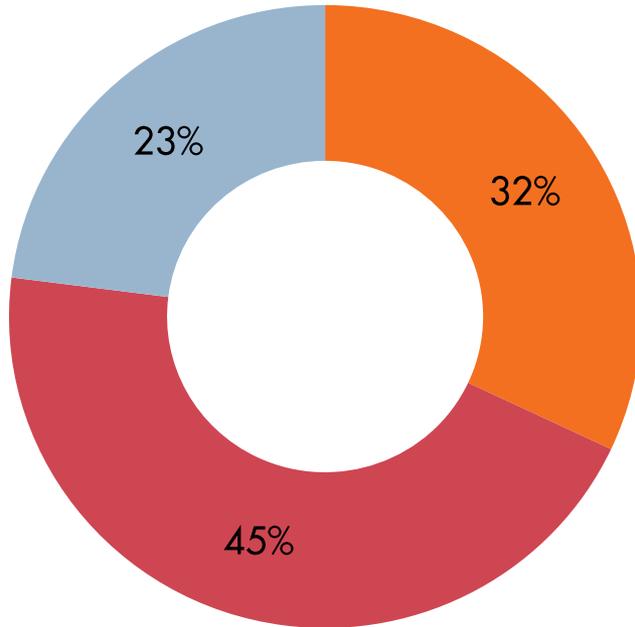


	Energy Benchmarking			Audit/Retrocommissioning
Applies to	Non-residential buildings with $\geq 10,000$ square feet of conditioned space			
Requires	All energy used by the building, and basic descriptive characteristics. May be performed in-house.			Assessment by a qualified professional identifying cost-effective opportunities to save energy.
Tool	ENERGY STAR Portfolio Manager			ASHRAE Procedures for ...Audits "Level 2" for $\geq 50k$ sq ft "Level 1" for $< 50k$ sq ft (Alternative: retrocommissioning)
Frequency	Annually, starting:			Every 5 years
	$> 50k$ sqft 2011	25k-50k sqft 2012	10k-25k sqft 2013	After binning into groups by size, due dates within a 3 year period were randomly assigned
Exemptions	New or vacant buildings, (Administrative: Whole building transaction or change of separately metered tenant in prior calendar year)			New or vacant buildings, financial distress, or excellence (LEED EB certification, or ENERGY STAR certified 3 of prior 5 years)

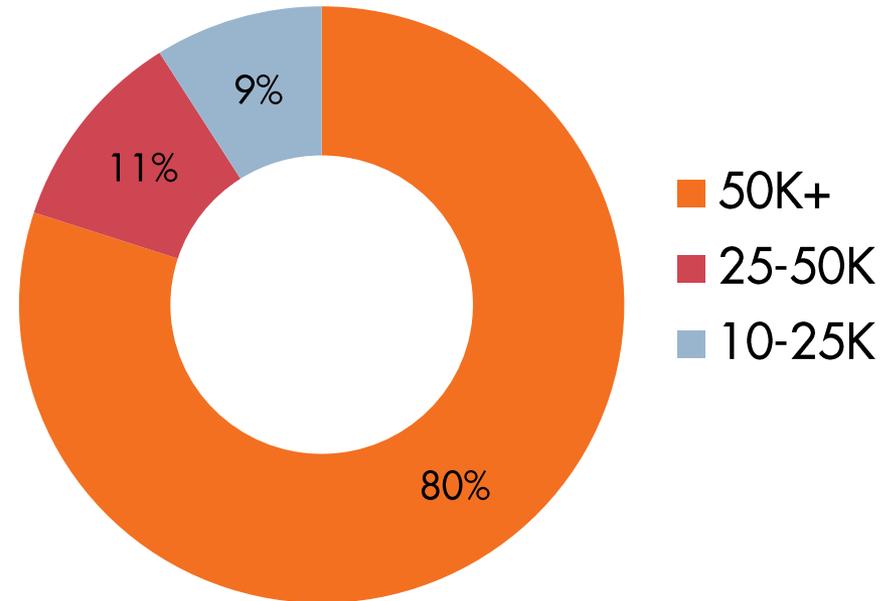
Affected Building Stock



Private Sector Buildings



Proportion of Floor Area



Building Size	Number of "Buildings"		Commercial Floor area (sq ft)	
	Private Sector	Municipal	Private Sector	Municipal
≥50K sq ft	679	74	121M	39.7M
≥25K-49K	517	22	17M	0.7M
≥10-25K	897	91	14M	1.5M
TOTAL	2,093	187	152M	42M

Municipal Facilities



2011 ENERGY BENCHMARKING REPORT

San Francisco Municipal Buildings



2012 ENERGY BENCHMARKING REPORT

San Francisco Municipal Buildings

September 2013



SFPUC Report:

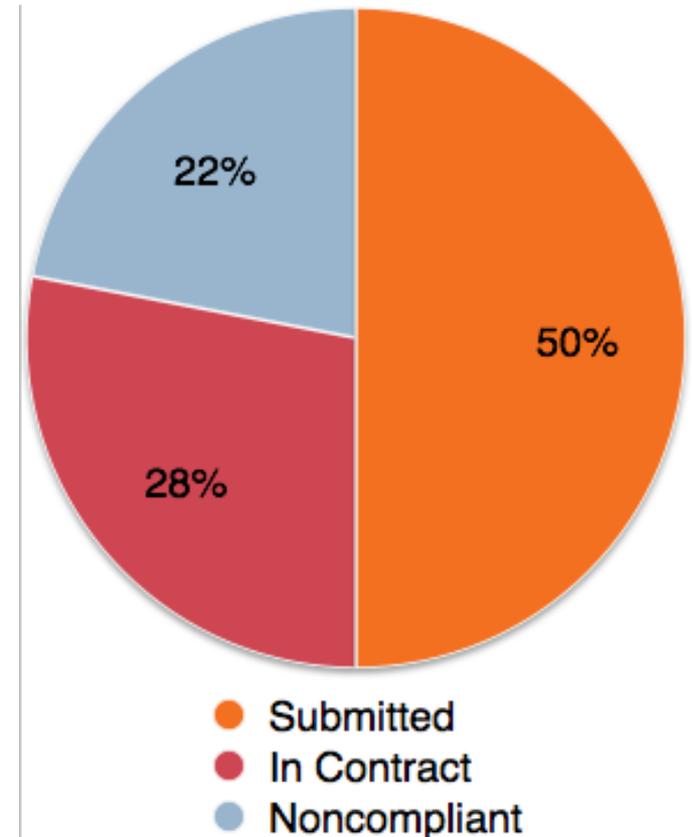
- 446 buildings, 46M square feet
- 79% perform above national median
- Carbon reduction:
 - 5% since 2011
 - 7% since 2009



Benchmarking

Year	Compliance
2011	81%
2012	79%

Audits – 2013



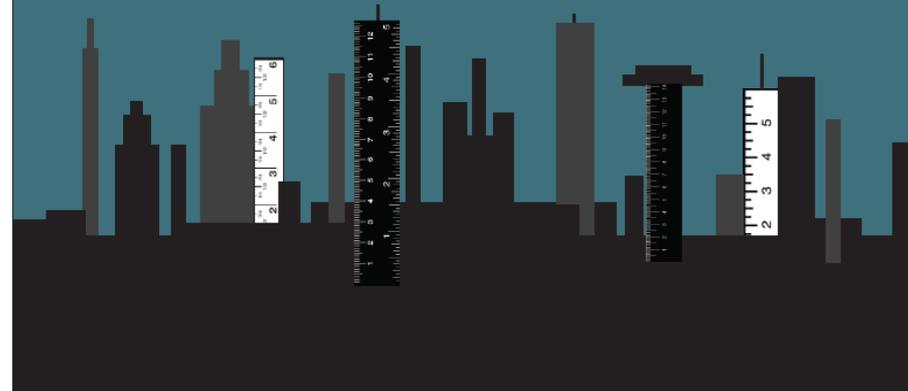


Critical Elements

- Patience
- Inventory of building stock
- Utility support
- Straightforward data access
- Efficient administration
- Market segmentation
- Stakeholder engagement
- Peer collaborations

OFFICE BUILDING BENCHMARKING GUIDE

engaging the hard-to-reach





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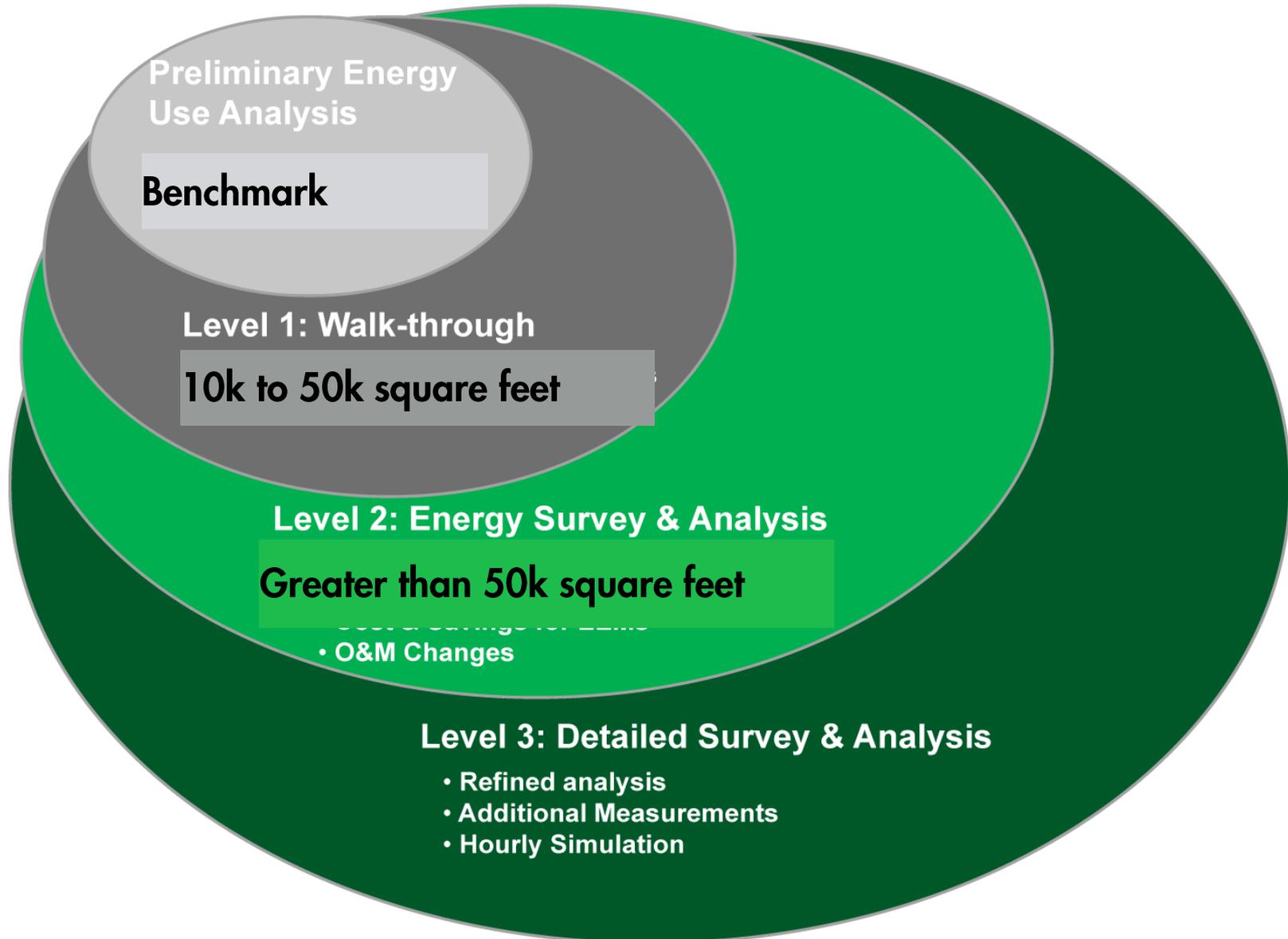
San Francisco and PG&E commit to:

- Engaging stakeholders on energy data access for whole-building benchmarking
- Piloting whole-building data aggregation for commercial and/or multifamily within 24 months of October 2013
- Sharing results

Status:

- Stakeholders engaged – and motivated
 - Whole-building data aggregation supports energy management and compliance
- Explicit support and direction from regulators (and perhaps the legislature) is necessary
- CPUC called upon CEC to resolve data access for benchmarking

Audit or Retrocommissioning Requirement



Incentives: San Francisco Energy Watch



- Installed over **8,500** efficiency projects
- Paid over **\$37 million** in incentives since 2006
- Cut annual carbon emissions by over **91,000 tons**
- Annual savings equivalent to powering **25,000** homes in San Francisco



GreenFinanceSF



Saving You Money, Energy and Water

Pier 1: Prologis Headquarters

- \$1.4 million investment
- Positive cash flow
- 32% energy cost reduction
- 30 jobs
- \$3.7M in economic activity

Projects Completed:

- Retrocommissioning
- Lighting
- 200kW photovoltaic array

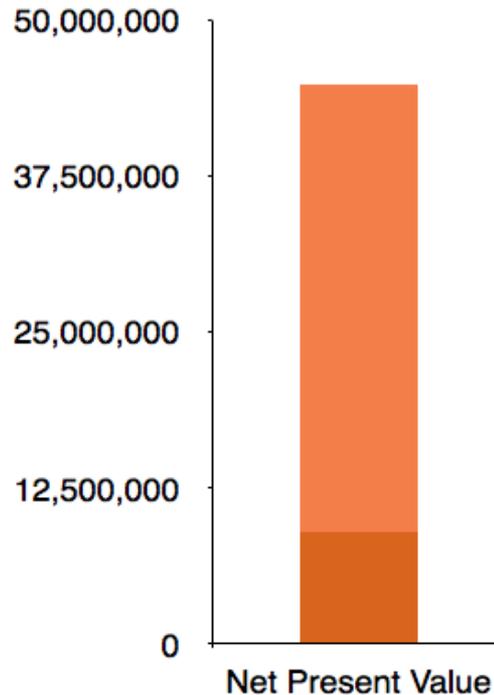
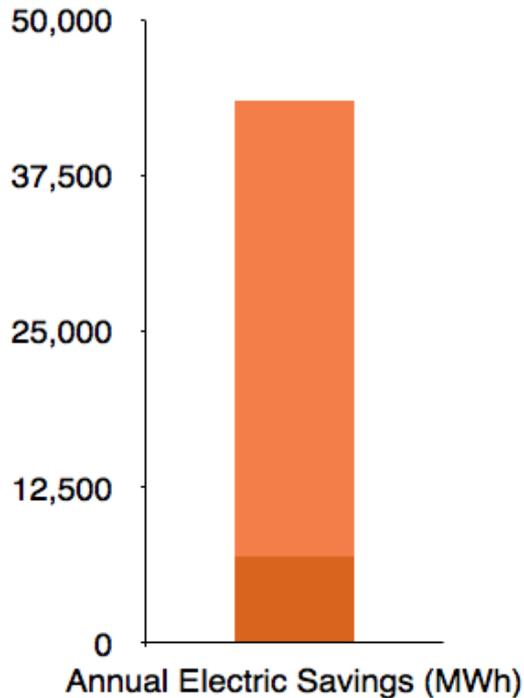


Pier 1 Upgrade Project
Existing Energy Consumption vs. Post-Retrofit
Projection (month of July)



Audits Are Uncovering Value

Of the first 26M sq feet audited:



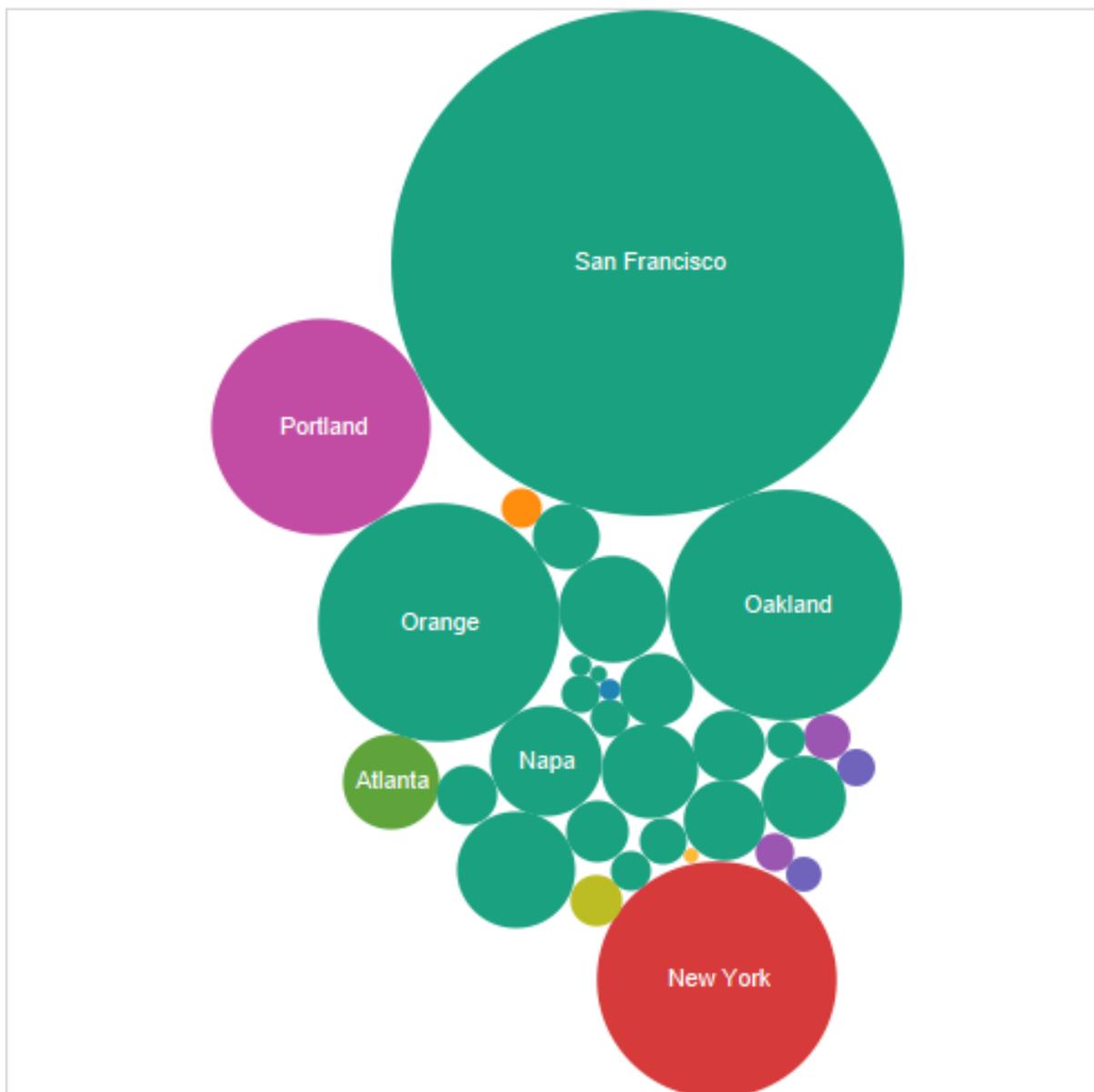
Ingredients for Action:

- Engineering talent
- Owner attention
- Actionable data
- Incentives
- Financing

Assumptions:

- 6% discount rate
- 0% utility cost escalation
- Period = DEER Expected Useful Life

Energy Benchmark & Audit Workforce



For more information



Existing Commercial Buildings ordinance
Municipal Benchmarking Reports

www.sfenvironment.org/ecb
www.sfwater.org

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USDN Small/Hard to Reach Office Building Benchmarking Guide
<http://tinyurl.com/officebenchmarking>

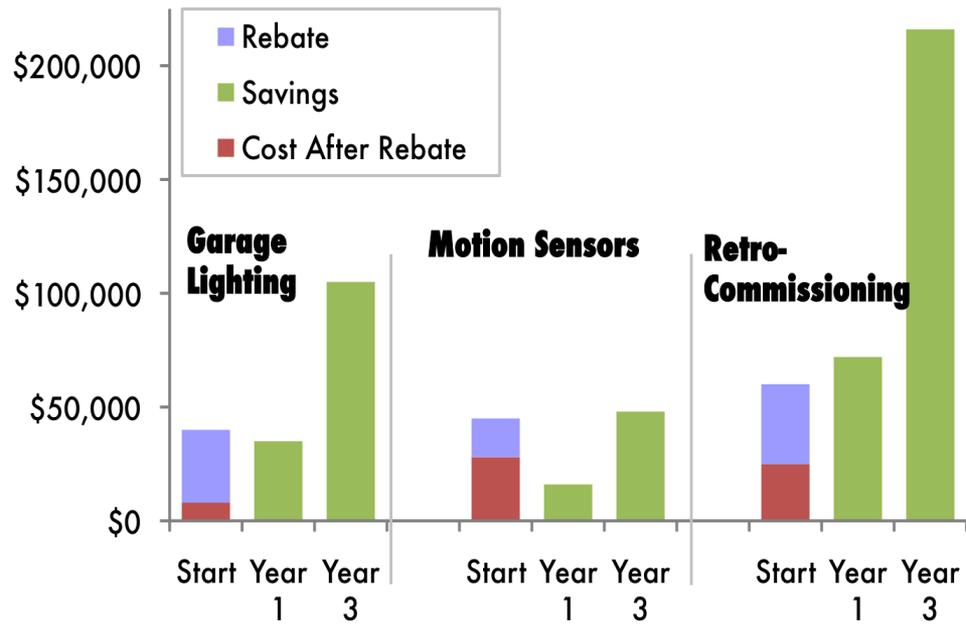
Better Buildings Data Accelerator
<http://www1.eere.energy.gov/buildings/betterbuildings/accelerators/energy.html>



New Buildings

“Through benchmarking and an audit, we maximized savings without sacrificing our customers’ experience.”

Peter Koehler
General Manager
InterContinental San Francisco



Historic Buildings



- 290,000 sq ft historic landmark
- Audit found \$1.2M in savings
- Updated lighting and HVAC controls

Sources: Carbon Lighthouse, Management of the Flood Building

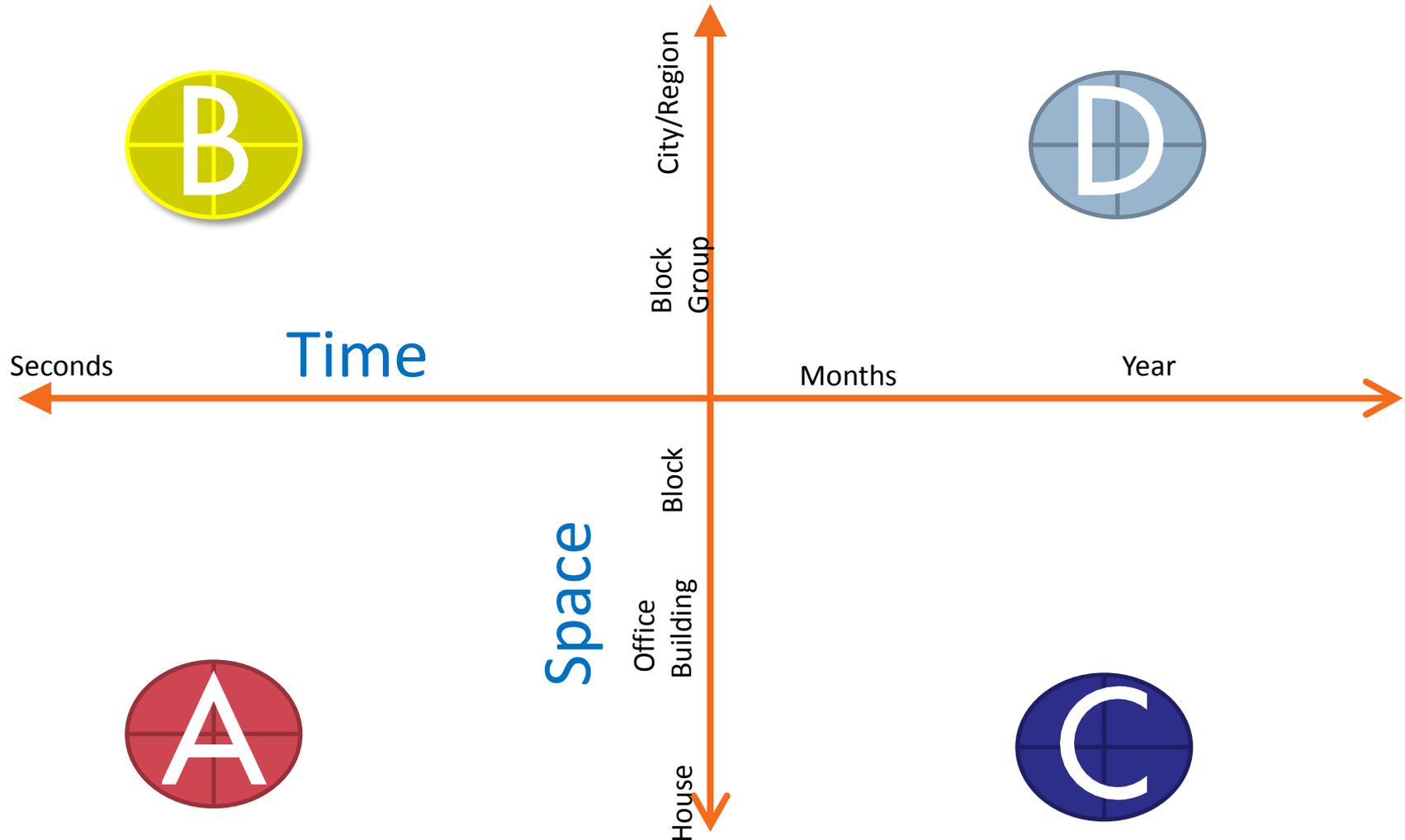


Image : Joe Mabel

Challenge: Access to Data



- The sensitivity of energy data varies with resolution – in time and space
- Balance between sensitivity and public interest





HOME

GREEN LEASE

STAKEHOLDER
ENGAGEMENT

CHECK-LISTS

RESOURCES

green lease



A lease is a legally binding agreement between the tenant and the landlord for a specified term and governs the relationship with the leased premises.

There are many steps leading up to the signing of a green lease; there are also important considerations during occupancy and at the time of lease renewal. **At each stage of the leasing process**, there are opportunities for the parties to collaborate in an effort to achieve the goals of energy efficiency and more sustainable building operations.

Click [here](#) for information about the leasing process.

Helpful Links

- Introduction to Green Leasing
- Green Policy Statement