

PLACE HOUSTON WASHINGTON, DC CALGARY LOS ANGELES SYDNEY DENVER OTTAWA MELBOURNE BOSTON PERTH BROOKFIELD PLACE VANCOUVER
TON WASHINGTON, DC CALGARY LOS ANGELES SYDNEY DENVER OTTAWA MELBOURNE BOSTON PERTH VANCOUVER LONDON SEATTLE NEW YORK
LOS ANGELES BROOKFIELD PLACE SYDNEY DENVER OTTAWA MELBOURNE BOSTON PERTH VANCOUVER LONDON SEATTLE NEW YORK BROOKFIELD
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2015

OCTOBER 29

PLUG Conference

Brookfield
Office
Properties

Brookfield



Agenda

- Who we are and what we do
- Brookfield's metering systems
- Why do we sub-meter?
- The Future
- Summary and Questions?



Owner, developer and manager of premier office properties globally

- Brookfield Office Properties is a subsidiary of Brookfield Property Partners, a publicly traded Bermuda-based partnership listed under the ticker symbol BPY on the New York Stock Exchange and BPY.UN on the Toronto Stock Exchange
- Portfolio comprises interests in 107 buildings totaling 86 million square feet
- Prominent, well-located assets in the top markets of the United States, Canada, Australia and the United Kingdom
- Long lease duration – average of 7.5 years
- Quality tenants – average tenant is “A” rated⁽¹⁾



Brookfield Place - Toronto

⁽¹⁾ Among tenants that are credit-rated

Our business strategy...

Own and operate premier office properties in dynamic markets around the world:

- Concentrate on vibrant 24-hour urban markets for the long-term
- Focus on transit-oriented, class A assets
- Maintain high occupancy, long-term leases, credit-rated tenants
- Foster global tenant relationships by providing best-in-class office product that affords maximum efficiency, productivity and service
- Focus in resource & energy, financial, government and professional services sectors markets
- Expand presence in technology sector markets and submarkets
- Position portfolio to address evolving workplace trends through creative capital projects and building amenities

Global Operating Platform...

107 buildings in 16 cities / 8 offices in 4 countries / 1,500 operating employees

U.S.

4 Offices
59 Properties – 56 msf
New York
Washington D.C.
Houston
Los Angeles
Seattle
San Francisco
Denver
Boston

U.K.

1 Office
4 Properties – 1 msf
London



Canada

2 Offices
26 Properties – 20 msf
Toronto
Calgary
Ottawa
Vancouver

Australia

1 Office
18 Properties – 9 msf
Sydney
Melbourne
Perth

Toronto



**Brookfield Place
Bay Wellington Tower**

1.3M leasable sq. ft.



Brookfield Place Retail/Parking

555K sq. ft.
52K retail sq. ft



Bay Adelaide Centre West

1.2M leasable sq. ft.



First Canadian Place

2.6M leasable sq. ft

Toronto



Exchange Tower

1.0M leasable sq. ft.



105 Adelaide Street

184K leasable sq. ft.



Hudson's Bay Centre

745K leasable sq. ft.



2 Queen Street East

464K leasable sq. ft.

Toronto

New Development



Queen's Quay Terminal

484K leasable sq. ft.

22 Front Street

144K leasable sq. ft.

Bay Adelaide East Tower

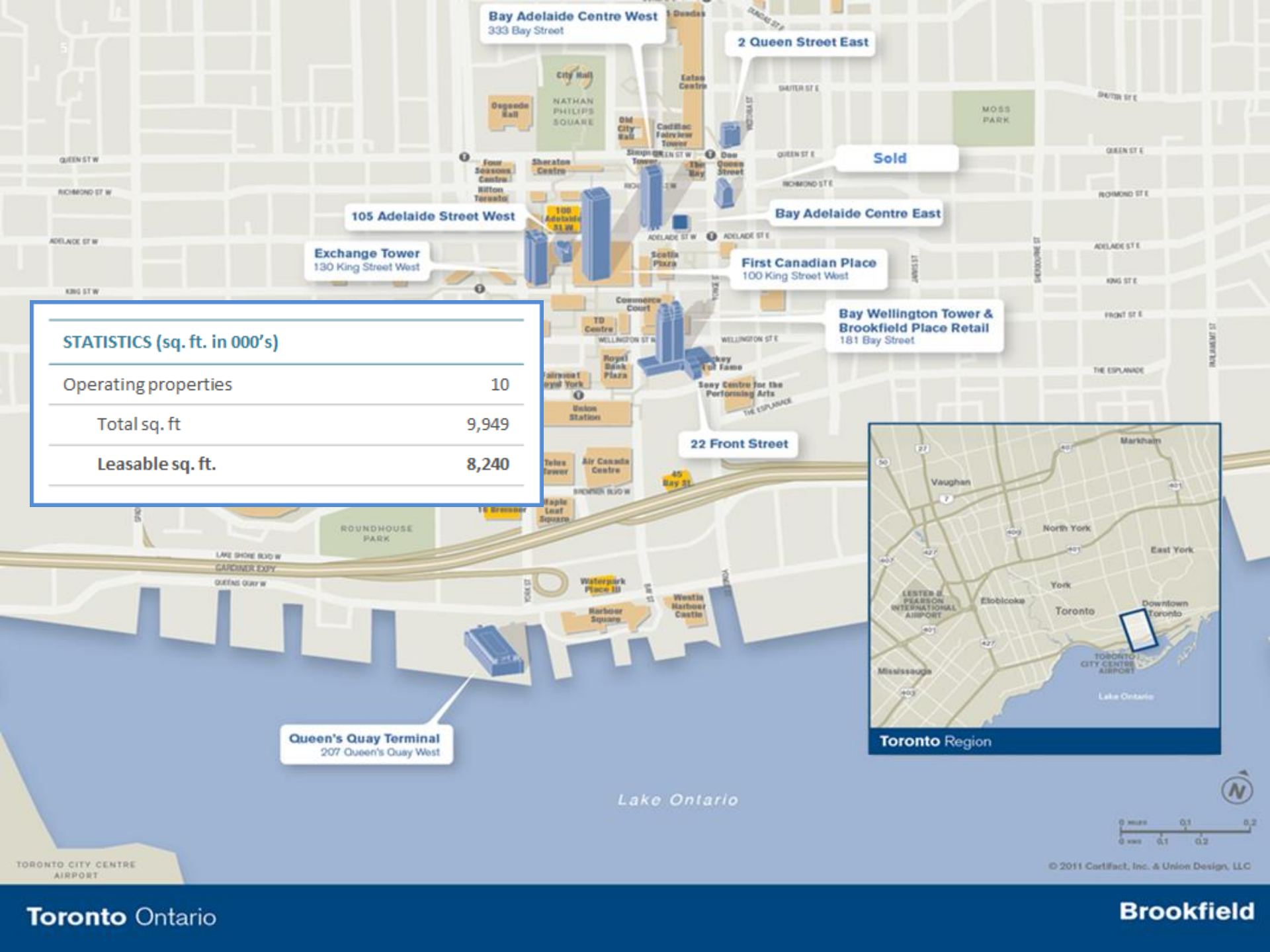
980K leasable sq. ft.

STATISTICS (sq. ft. in 000's)

Operating properties 10

Total sq. ft 9,949

Leasable sq. ft. 8,240



Bay Adelaide Centre West
333 Bay Street

2 Queen Street East

105 Adelaide Street West

Bay Adelaide Centre East

Exchange Tower
130 King Street West

First Canadian Place
100 King Street West

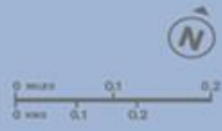
Bay Wellington Tower & Brookfield Place Retail
181 Bay Street

22 Front Street

Queen's Quay Terminal
207 Queen's Quay West



Lake Ontario



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Calgary



Bankers Hall
(three buildings)

2.2M leasable sq. ft.



Bankers Court

264K leasable sq. ft.



Fifth Avenue Place
(two buildings)

1.5M leasable sq. ft.



Suncor Energy Centre
(two buildings)

1.7M leasable sq. ft.

New Development

Brookfield Place Calgary East Tower

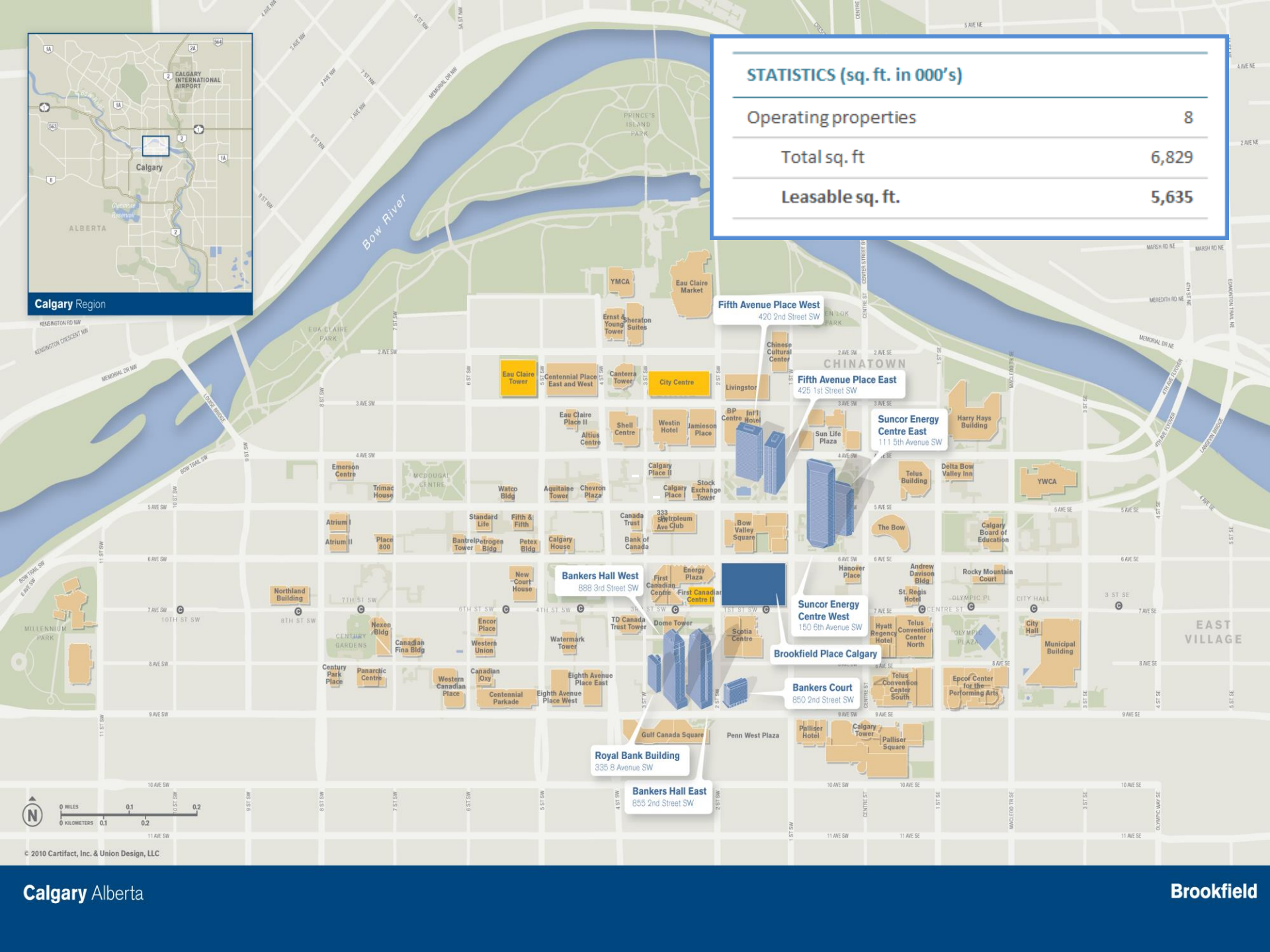
1.4M leasable sq. ft.



Calgary Region

STATISTICS (sq. ft. in 000's)

Operating properties	8
Total sq. ft.	6,829
Leasable sq. ft.	5,635



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Ottawa



Place de Ville I
(two buildings)

582K leasable sq. ft.



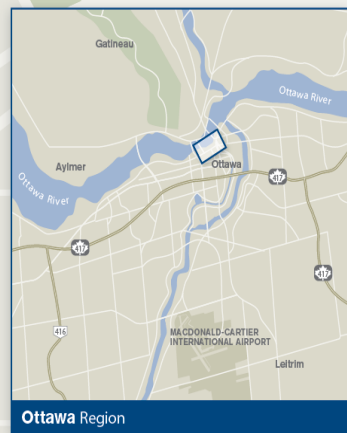
Place de Ville II
(two buildings)

610K leasable sq. ft.



Jean Edmonds Towers
(two buildings)

552K leasable sq. ft.



STATISTICS (sq. ft. in 000's)	
Operating properties	6
Total sq. ft.	2,532
Leasable sq. ft.	1,730

Place de Ville II
Tower C
330 Sparks Street

Place de Ville I
Tower A
320 Queen Street

Place de Ville I
Tower B
112 Kent Street

Jean Edmonds Towers
300 Slater Street

Vancouver

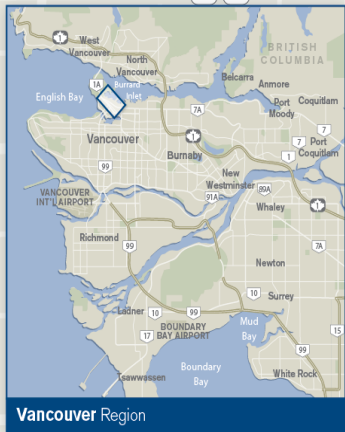


Royal Centre

582K leasable sq. ft.

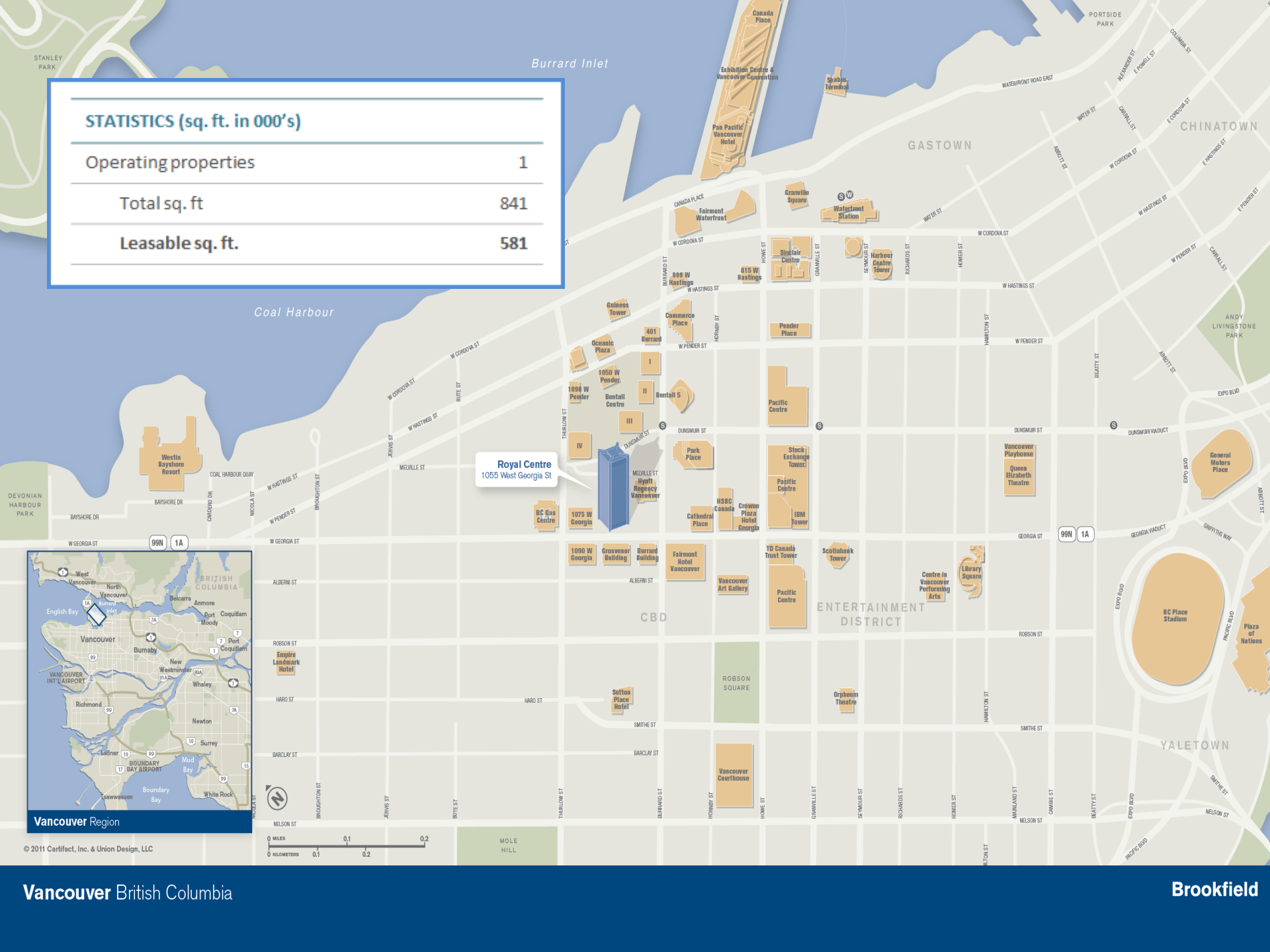
STATISTICS (sq. ft. in 000's)

Operating properties	1
Total sq. ft.	841
Leasable sq. ft.	581



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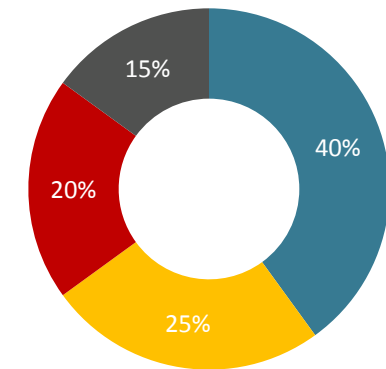
Royal Centre
1055 West Georgia St



High quality & diversified tenant base

Are attracted to a premier portfolio and provide a long-term, high-quality cash flow

Tenant	Location	Sq. Ft.	Credit ⁽¹⁾
Government & agencies	All markets	5,269	AAA/AA+
CIBC World Markets	New York, Toronto, Calgary , Houston	1,429	A+
Suncor Energy Inc.	Calgary	1,295	BBB+
Morgan Stanley	New York , Denver, Toronto	1,196	A-
Bank of Montreal	Toronto, Calgary	1,143	A+
BofA/Merrill Lynch	New York, Toronto, Denver, Los Angeles, DC	1,084	A-
Royal Bank of Canada	New York, Vancouver, Toronto, Calgary, Washington DC, Boston, Los Angeles	984	AA-
PricewaterhouseCoopers	Sydney, Houston, Calgary, Los Angeles, Perth	896	NR
JPMorgan Chase & Co.	New York, Denver, Houston, Los Angeles	889	A
KPMG	Sydney, Toronto, Perth, Los Angeles	853	NR
Imperial Oil	Calgary	718	AAA
EnCana Corporation	Denver, Calgary	709	BBB
BHP Billiton	Perth	661	A+
Latham & Watkins LLP	London, Los Angeles	657	NR
Devon Energy	Houston	641	BBB+

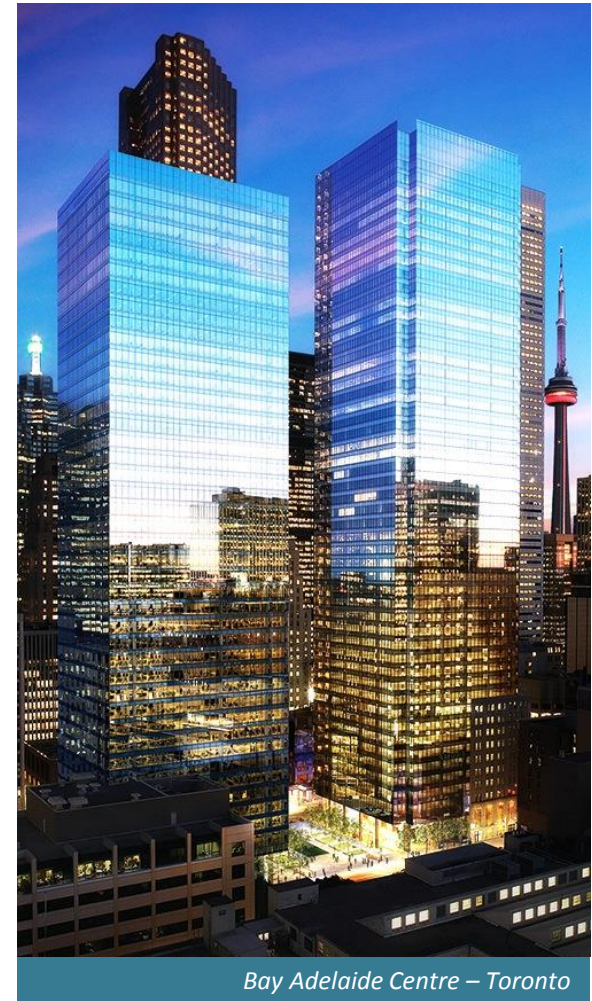


- Financial
- Resource & Energy
- Government
- Technology & Services

⁽¹⁾ From S&P, Moody's or DBRS

Existing development-ready pipeline

- Active Canadian developments:
 - » Bay Adelaide Centre East Tower, Toronto – 980,000 sf
 - Designed to achieve LEED Platinum certification
 - Opening 2015/16
 - » Brookfield Place Calgary East Tower – 1.4M sf
 - Best-located underdeveloped block in Calgary
 - Opening 2017



Bay Adelaide Centre – Toronto

Opportunity to create value through redevelopment

- 2012, completed a \$100-million rejuvenation of First Canadian Place, Toronto
 - » New façade on 72-story tower
 - » Upgraded lobby and common areas
 - » LEED Gold certification
 - » Energy Star Score – 32 to 79
 - » Integrated metering systems



Before & After: First Canadian Place – Toronto

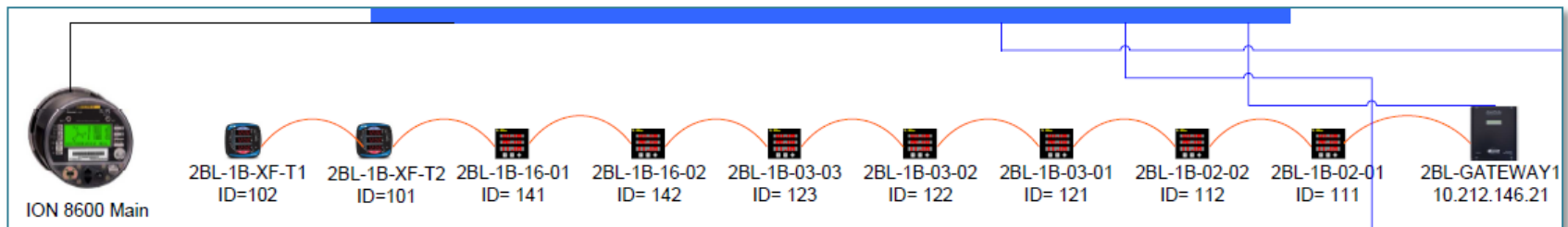
A Typical Brookfield Office Building...

	Average	Range
• Leasable Square Feet:	679K	(145K – 2.7M)
• Number of Floors:	29	(8-72)
• Number of Office Tenants:	14	(1-49)
• Number of Retail Tenants:	18	(1-84)
• Number of Meters:	139	(22-785)
• kWh of electricity annually:	16M	(3M-67M)

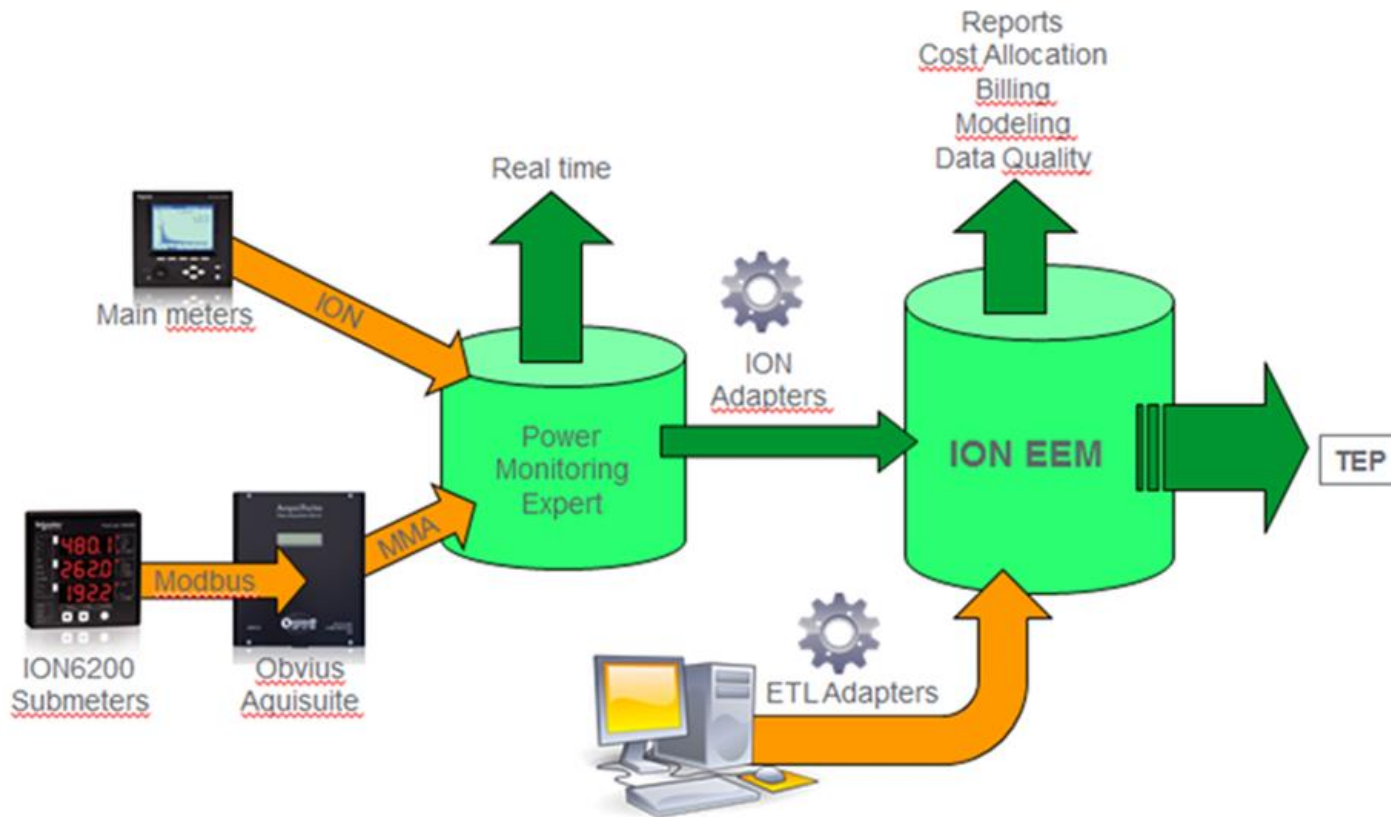


Metering at Brookfield

- Our metering system – BEMS, TEP
- Why do we sub-meter?
 - » Tenant billing
 - » Operations and energy management
 - » Energy performance and sustainability
 - » Tenant vs. Landlord energy/carbon boundaries



Building Energy Management System (BEMS)



Legend:



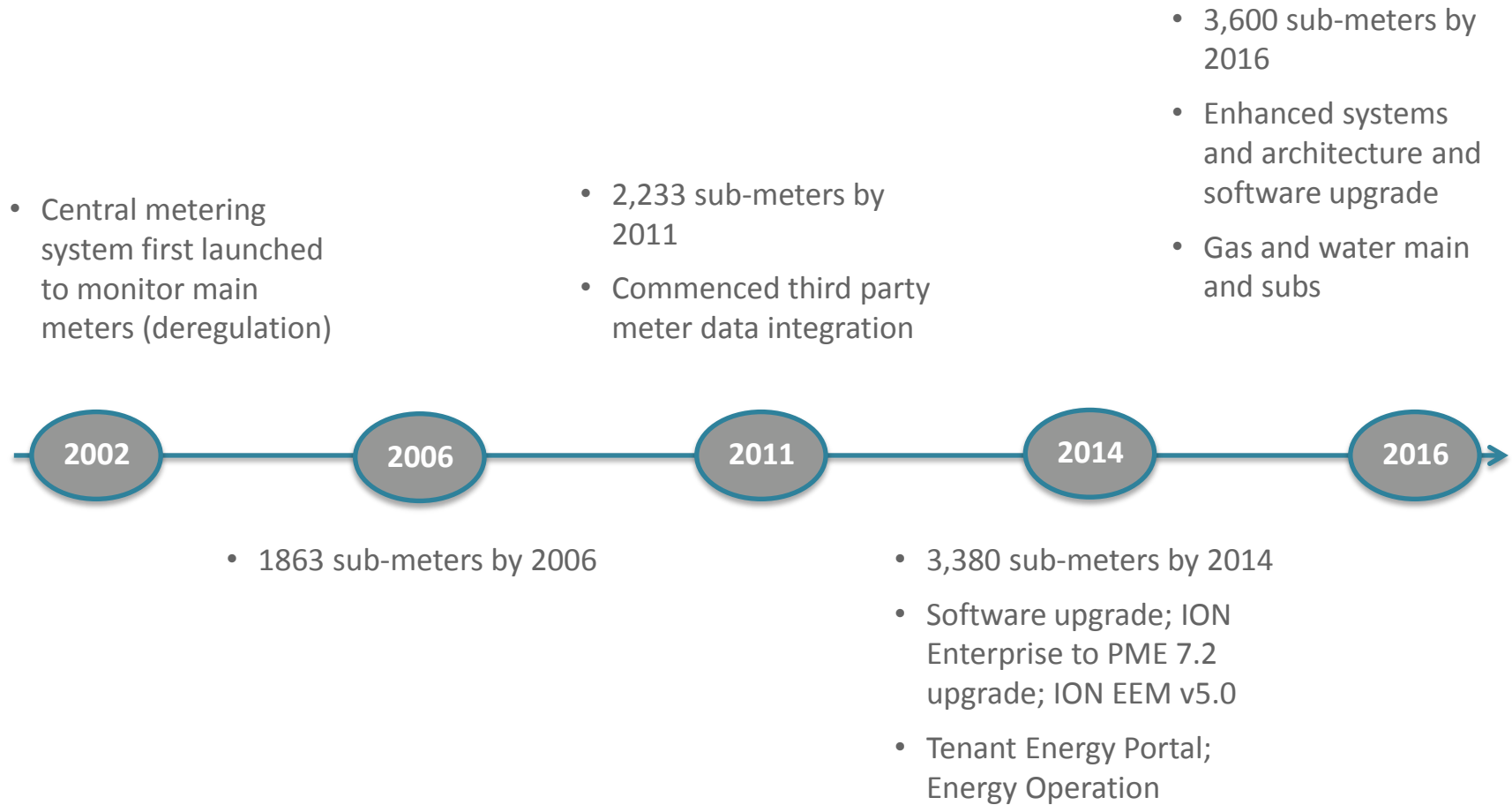
Raw Data flow



Information/
Processed Data

ETL = Extract, Transform, Load
 MMA = Meter Mail Archiver
 TEP = Tenant Energy Portal

BEMS Metering History



Building Energy Management System (BEMS)

- Custom Reporting
- Categorizes Metering Data:
 - » Area Types
 - » Load Types
 - » Leasing Details
 - » Tenant vs. Base Building
 - » 15 min interval to Annual data
 - » Measurements: kWh, \$ (also kW, KVA, PF, etc. depending on meter type)



Building Energy Management System (BEMS)

- Quality Control

- Tenant Billing

Brookfield										
Meter-Tenant Allocation Anomaly Summary Report										
2015										
Node Name	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
Building										
QQ-05-13-01	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
QQ-05-13-02	0.60	0.60	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
QQ-06-508-01	0.75	0.75	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07

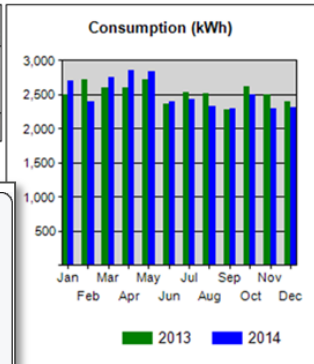
Brookfield Tenant Electricity Report

Jan 01, 2014 to Jan 01, 2015

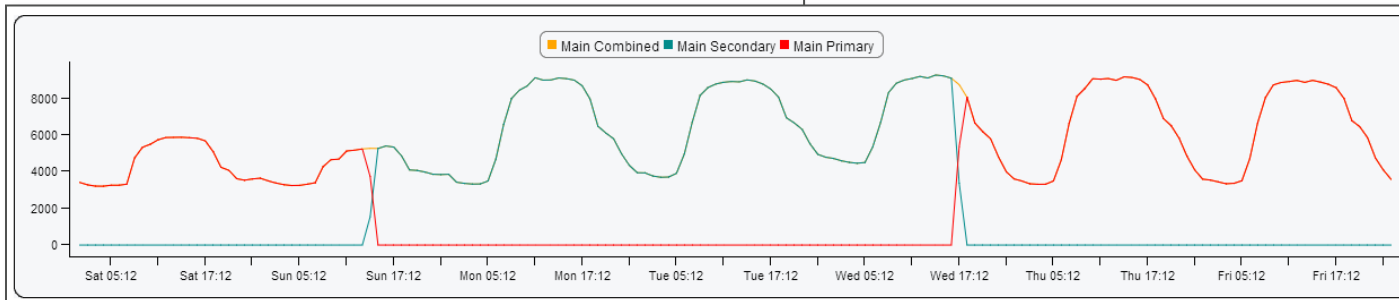
Tenant	Summary of period
Brookfield Properties Ltd. (BP) BP - Bay Wellington Tower 181 Bay Street Toronto, ON M5J 2T3	Consumption: 28,079 kWh Cost: \$3,731.89
Lease Code: 1190200-LBROOM	

Details of period: Jan 01, 2014 to Jan 01, 2015

Floor	Meter	Load Type	Consumption (kWh)	Rate (\$/kWh)	Cost
02	BW-02-16-01	HVAC	9,856		\$1,309.93
02	BW-02-17-04	Plug	13,536		\$1,799.03
02	BW-02-523-01	Plug	4,687		\$622.93
Totals:			28,079	.132906793	\$3,731.89



- Operations and Analysis



Tenant Energy Portal (TEP)

- Software – Energy Operation
- Tenants can view kWh in real-time



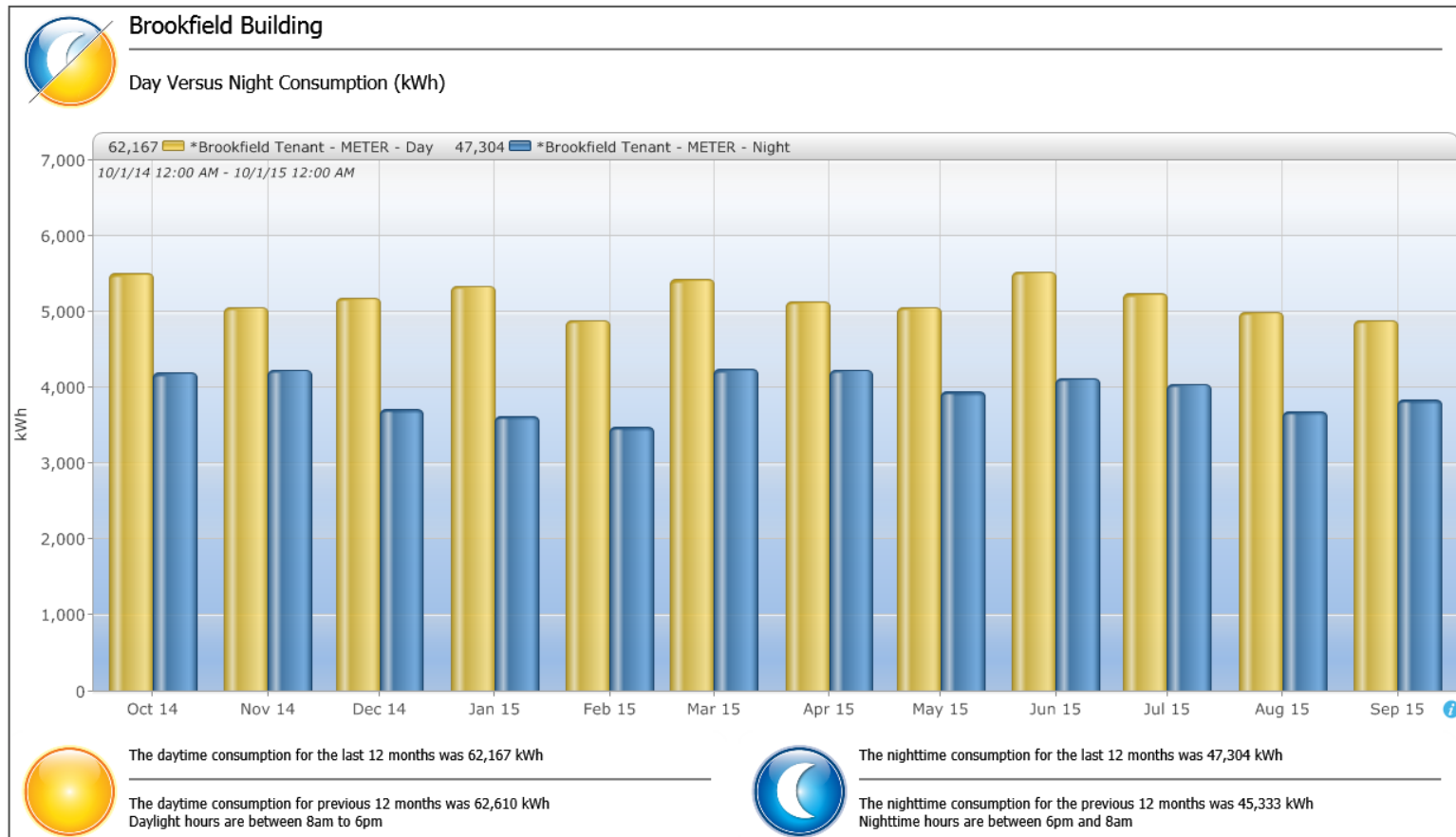
How it works

1. Power usage is recorded in each tenant's electricity meter
2. The recorded data is sent automatically to the Tenant Energy Portal for storage and analysis
3. Trending reports and data can be viewed in or exported from the Tenant Energy Portal



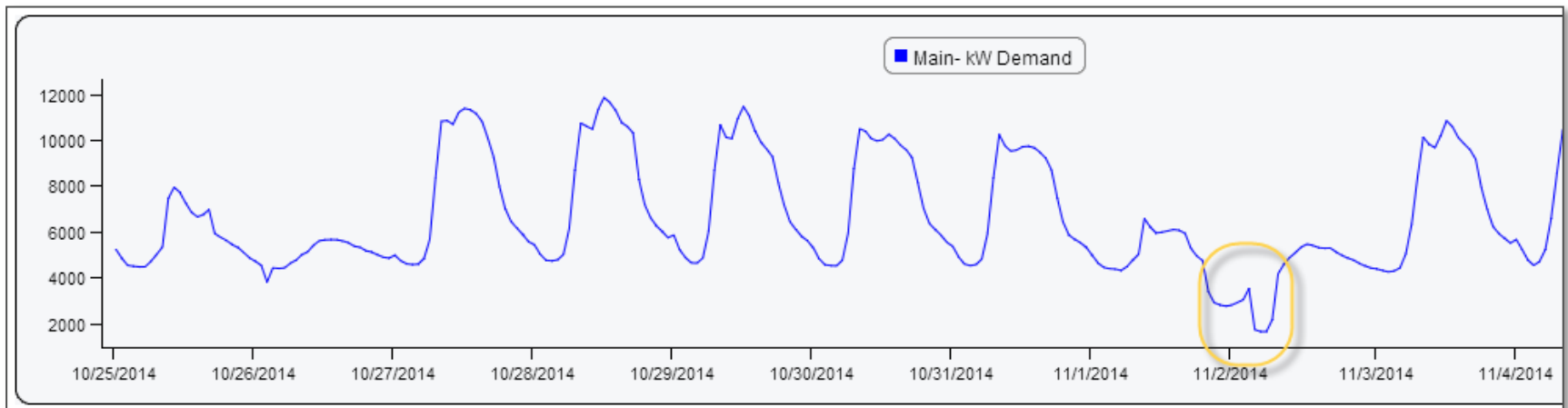
Tenant Energy Portal (TEP)

- Graphs – by historical consumption, by load type, day vs. night
- Ability to export and adjust time range and interval



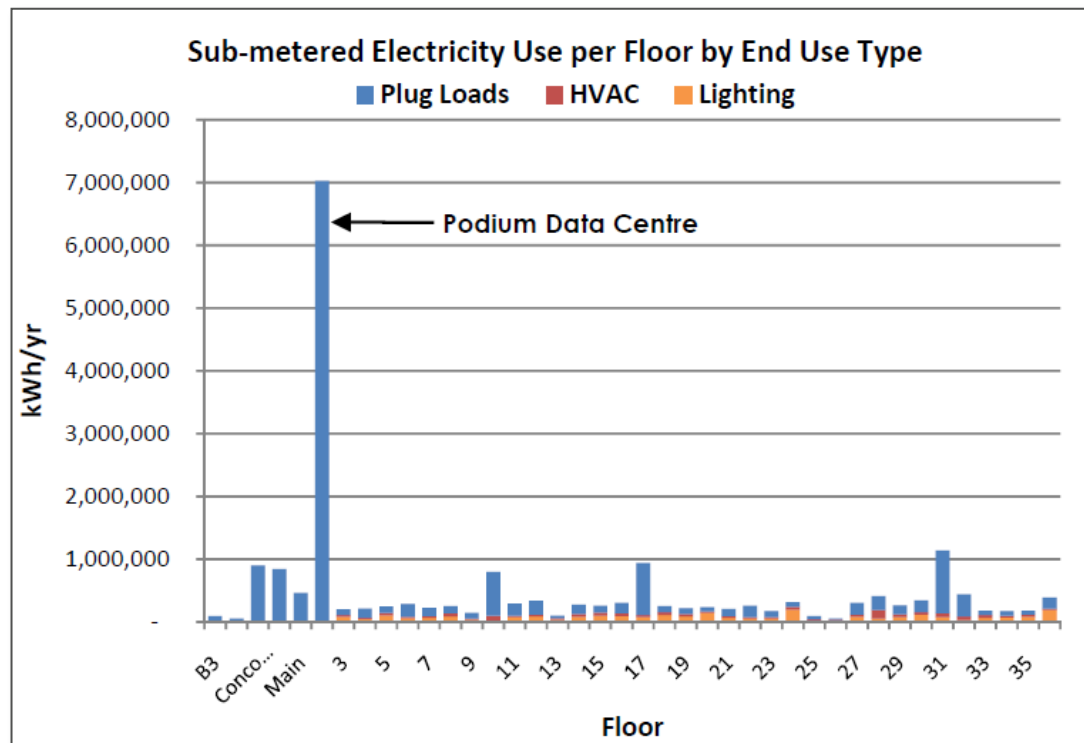
Billing, Operations and Energy Management

- Tenant billing
 - » Triple Net Lease
 - » Our tenants directly consume 50-60% of total building electricity
- Budgets, capital and operational decisions, ECMs
- Operation performance, monitor plant, KW outage events, power quality



Energy Performance and Sustainability

- Sub-metering allows us to establish boundaries
- Sub-metering allows us to normalize our energy performance



Energy Performance and Sustainability


- 10 LEED Gold certifications, 78% of our Canadian Portfolio

- 100% BOMA 360 certified



- Energy Star – 81 Portfolio average score, up from 57 in 2010




ENERGY STAR® Data Verification Checklist

81

ENERGY STAR®
Score¹

Suncor Energy Centre

Registry Name: Suncor Energy Centre
Primary Function: Office
Gross Floor Area (ft²): 2,007,116
Built: 1983

For Year Ending: 07/31/2015
Date Generated: 10/16/2015

The Future

- Legislation and government regulations
 - » Energy performance disclosure
 - » Carbon emissions and carbon ownership
- Enhance gas, water and other energy metering
- Enhance tenant engagement
- Streamline reporting and data integration



Summary

- BEMS allows us to centrally monitor main meter and sub-meter electricity use and demand
- Sub-metering allows us to bill tenants directly for their consumption and separate from general operations cost
- Sub-metering allows us to normalize energy use and better understand our building's energy performance and how they operate within
- Sub-metering empowers us to make capital and operational decisions
- Sub-metering helps us future-proof our assets for new legislation and regulations

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Brookfield Office Properties
2015

