

AABC Commissioning Group

AIA Provider Number: 50111116

The Hive: The Future of Smart Building Technologies

Course Number: CXENERGY1521

acg



Brandy Moore, Director of Global Field Services, Schneider Electric

April 29, 2015



///

Credit(s) earned on completion of this course will be reported to **AIA CES** for AIA members. Certificates of Completion for both AIA members and non-AIA members are available upon request.

does not include content that may be deemed or construed to be an approval or endorsement by the AIA of any material of construction or any method or manner of handling, using, distributing, or dealing in any material or product.

Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.

This course is registered with **AIA CES** for continuing professional education. As such, it





Copyright Materials

This presentation is protected by US and International Copyright laws. Reproduction, distribution, display and use of the presentation without written permission of the speaker is prohibited.



© Schneider Electric 2015





Course Description

This presentation is a case study on the “smart” technologies deployed in Schneider Electric’s North American and international headquarters buildings. The facilities are showcases of the company’s complete range of technical solutions and services for smart management of buildings and optimization of their use. The North American headquarters building, located in Andover, MA, features \$8 million in technologies that manage the facility’s heating, cooling, and lighting systems. The headquarters earned a LEED Silver certification from the US Green Building Council. The international headquarters, known as “The Hive,” a French acronym for “The Hall of Innovation and Energy Showcase,” is a 35,000 square-meter building that accommodates more than 1,800 employees in Rueil-Malmaison, France. The international headquarters was the world’s first ISO 50001-certified building and has leveraged smart technologies to attain a 47 percent reduction in energy consumption.



Learning Objectives

At the end of the this course, participants will be able to:

1. Learn how the first building in the world earned ISO 50001 certification as a result of its sophisticated technology and systems.
2. Learn how smart building technology was implemented to realize a nearly 50 percent reduction in energy consumption.
3. Learn about the latest technologies designed to manage a facility's heating, cooling, and lighting systems.
4. Understand how smart building technologies at showcase facilities can be brought into your high-performance building projects.



Schneider Electric - Who are we?

- > 170,000+ employees in 100+ countries
- > 24 billion € revenue (FY 2013)
- > 4-5% of sales dedicated to R&D

Some of Our Brands

Schneider
Electric



inven²sys



Our Customers



Commercial



Industry



Government



Healthcare



Education



Data Center



Retail



Our Record

Over
7,500

managed buildings

\$700
Million

under active
management

\$1
Billion

in total managed savings

Our Commitment

> Make energy....

- > Safe
- > Reliable
- > Efficient
- > Productive
- > Green

> Important to live by our commitments both in business transactions and in our own day-to-day operations

> Our commitment is reflected in our 2 newest headquarter facilities

> The Hive (Paris)



> BostonOne



The Hive at a glance...

350,000 ft²
And 7 floors

1,850
Schneider Electric
employees

2,424
electric shades

3,000
Chilled beams
(heating/cooling distribution)

4,510
lighting points

World's First Triple Certification!

ISO 50001
Energy Management System

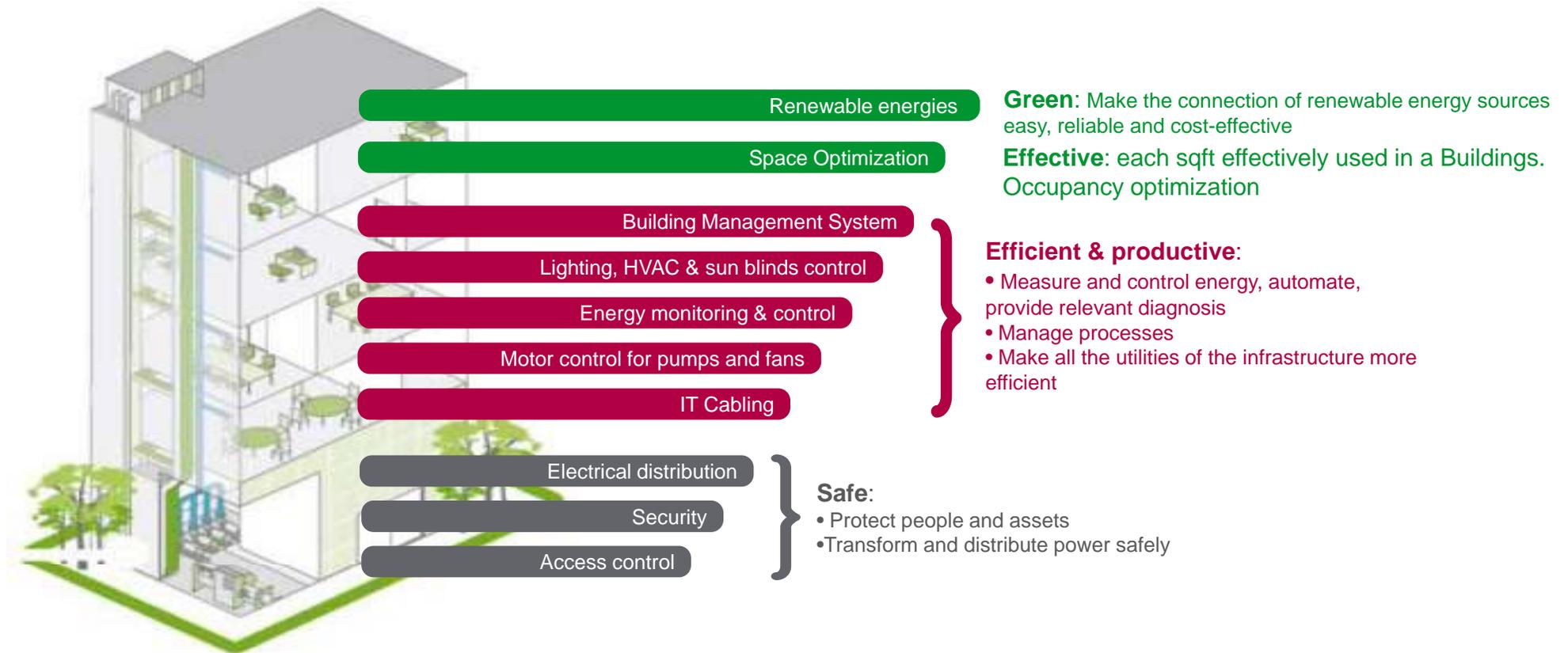
ISO 14001
Environmental Recognition

HQE
Recognition of the Building Sustainability

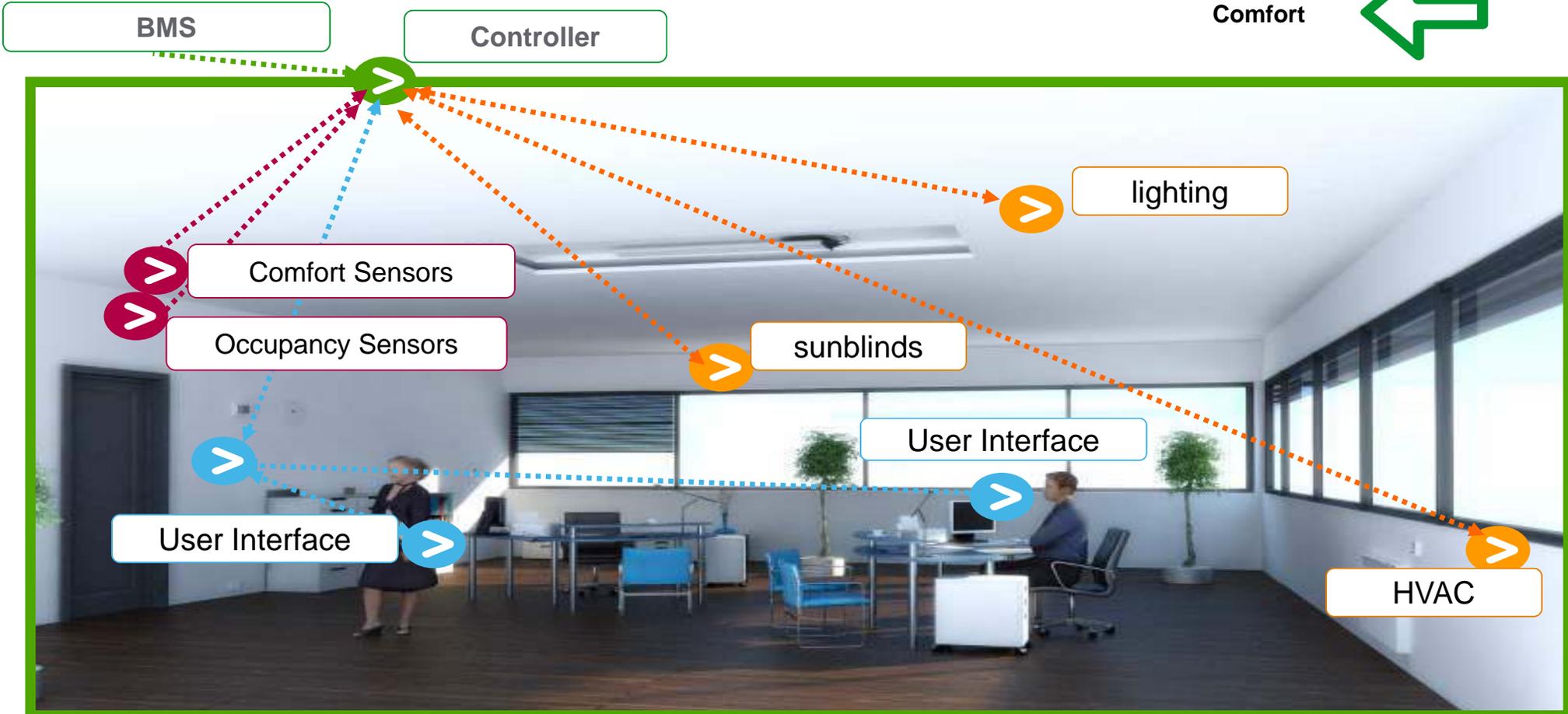
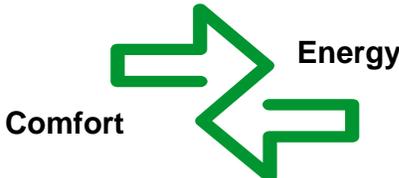
Energy Consumption
Cut by 4% annually since 2008

2014 Energy Consumption
6.8 kWh/sq ft

Schneider Electric Headquarters Application of EcoStruxure Vision



Fully Integrated Room Control



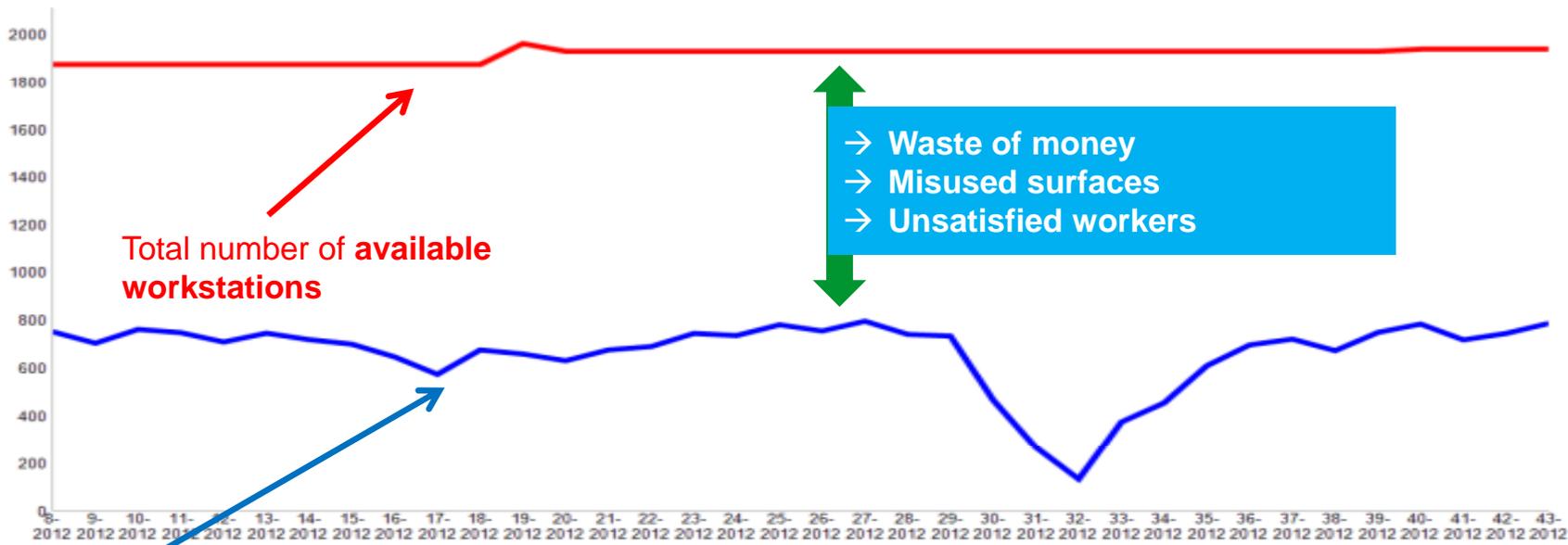
20 actions in 2011-2012

Priority given to active energy efficiency



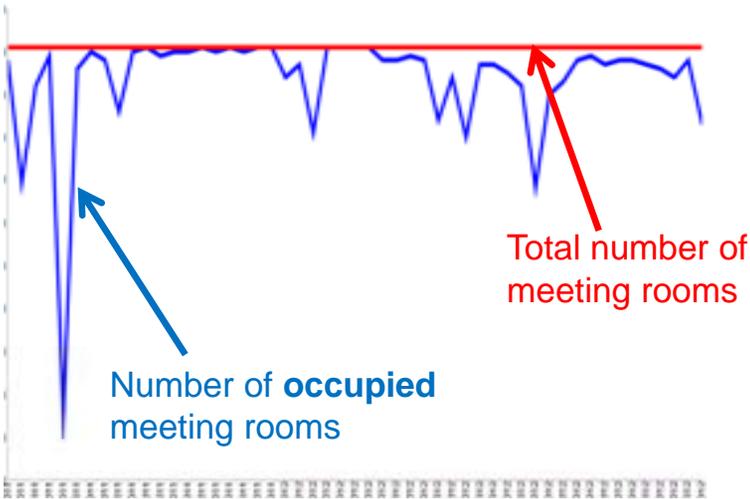
*including costs of internal resources

Space occupancy measurement reduces the number of unused workstations



Space occupancy measurement improves meeting rooms efficiency

Occupancy in number of meeting rooms



Occupancy in number of seats in meeting rooms



Number of **occupied** seats in meeting rooms

Boston ONE at a glance

247k ft²

Building space

53k ft²

Lab space

40 Labs

Development, testing and support

Large Technical presence

Large number of R&D and 20% of the Edison Experts are resident at BOC

27%

Targeted
Operating cost
reduction

700+

Employees

with growth capacity
up to 900

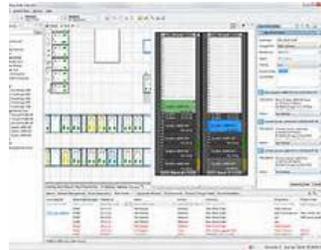
4 Sites

3 Consolidated from Mass and
relocation from Rhode Island

Technology in Boston ONE



SmartStruxure



StruxureWare Data Center Operations



Energy Operations



Resource Advisor



EV chargers



EcoBreeze

LED Lighting and Occupancy Sensors



Chilled Beams



HVAC Controls

Data Center Facts

> Cooling: EcoBreeze

- Modular, Indirect Air Economizer with adiabatic assist and proportional DX backup
- 20 ft. frame with 4 modules – 200 kW capacity
- Supply Temperature 74°F summer, 68°F winter
- Typical power draw 3kW (all modes except DX)

> Containment: EcoAisle

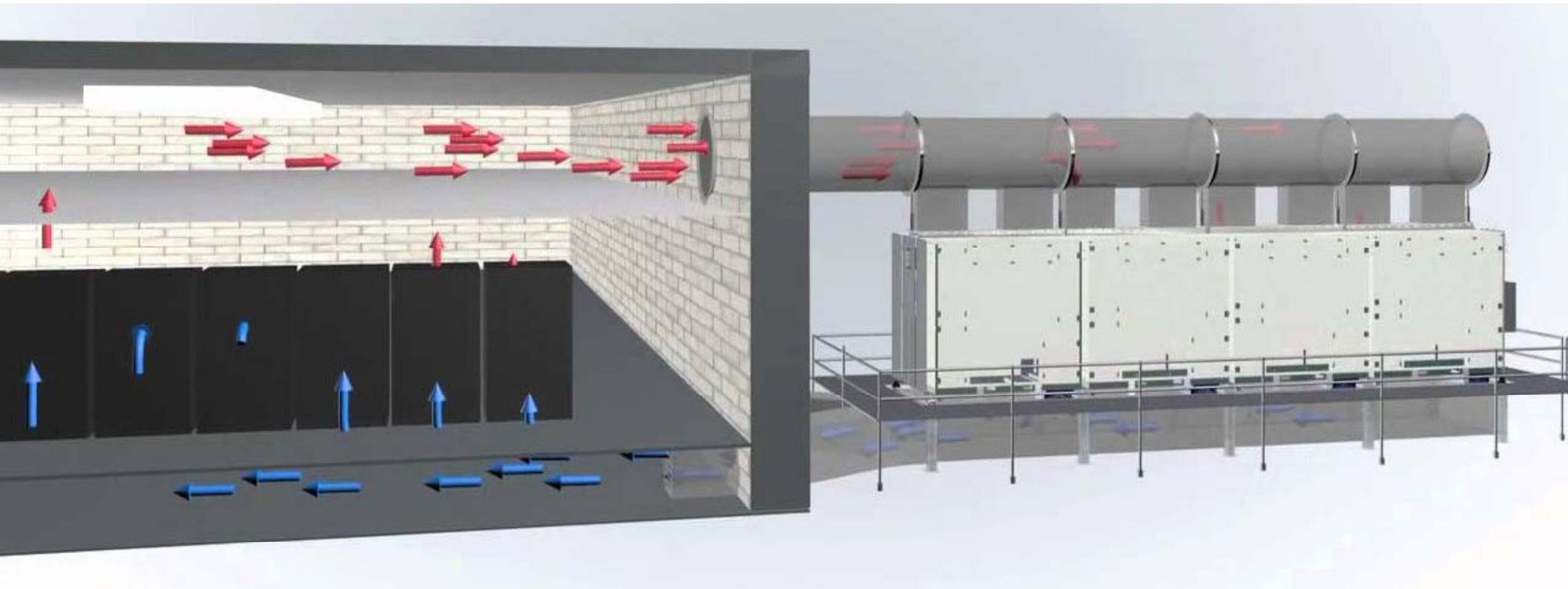
- Hot Aisle Containment (flooded supply with drop ceiling return)

> UPS: Symmetra PX 100

- Modular UPS configured as 80kW N+2
- ENERGY STAR® Qualified, weighted efficiency of 94.4%
- 480V input, 208V output
- Powers: Data Center, Server Lab, Demarc and all IDFs



EcoBreeze Airflow



EcoBreeze at BOC



Living Labs

- > Both facilities act as living labs
- > New technologies constantly implemented and tested
- > Continual improvement is focus
- > Showcase and testing ground for customers with unique needs
- > We live our commitments



///

This concludes The American Institute of Architects Continuing
Education Systems Course

Merci • Gracias • Danke • Спасибо • 谢谢 • شكرا • Dziękuję • Paldies • Баярлалаа
Dhanybhad • Aguyje • Salamat • Mulțumesc • Murakoze Dankje • Obrigado • Aitäh
Vinaka • Grazie • 감사합니다 • Дзякую вам • Ďakujem Hvala • Tack • 多謝 • Дякую
Asante • تشكراً • Благодаря • ありがとう • Ευχαριστώ • Köszönöm • Х
вала • Takk • Merci • Gracias • Danke • Спасибо • 谢谢 • شكرا • Dziękuję • Paldies •
Баярлалаа • Aguyje • Salamat • Mulțumesc • Murakoze Dankje • Obrigado • Aitäh
Vinaka • Grazie • 감사합니다 • Дзякую вам • Ďakujem Hvala • Tack • 多謝 • Дякую

Thank you!

Contact Info:

Brandy Moore

Twitter: [@GreenNRGlady](https://twitter.com/GreenNRGlady)

LinkedIn: www.linkedin.com/in/brandysmoore/

©2015 Schneider Electric. All Rights Reserved.

All trademarks are owned by Schneider Electric Industries SAS or its affiliated companies or their respective owners.

