Case Study #2

The Residences at Radian Boston

Boston, MA

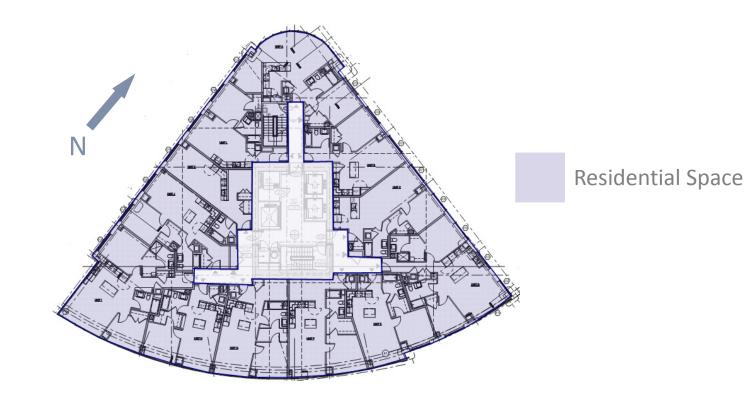


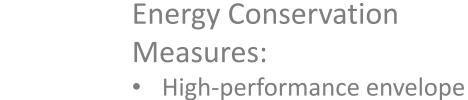
300,000 ft², 26-story mixed-use residential high-rise





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- Energy Star appliances
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- High-efficiency air distribution
- Energy recovery ventilation
- Condensing boiler plant





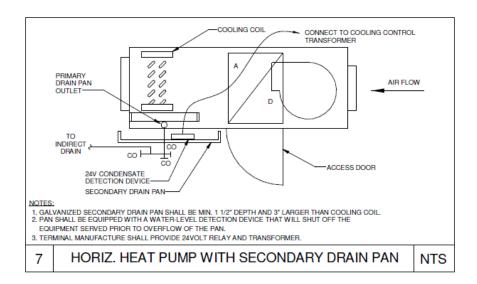
Case Study #2 Radian Boston





Mechanical Highlights:

- Ventilation provided via ERU in combination with operable windows in residences
- Local space conditioning via water-source heat pumps (WSHPs) supplemented by a condensing boiler plant and cooling tower







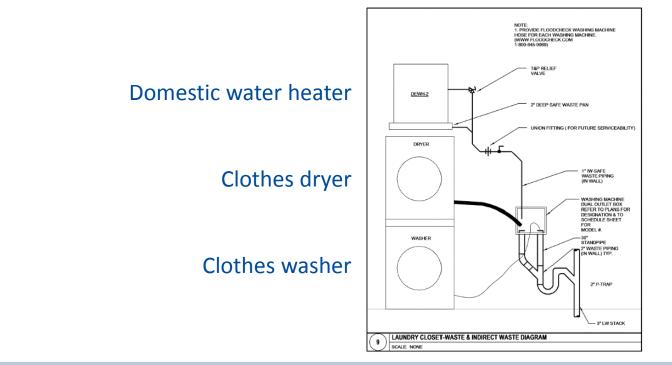
- Electrical Highlights:
 - Mixed CFL and LED lighting scheme beat code-maximum lighting power by 10%
 - Energy Star appliances specified in residences allowed credit against plug loads in Baseline energy model.







- Plumbing Highlights:
 - Electric water heaters local to each dwelling unit; space constraints within the residences required suspension over washer/dryer setups





- 32.2% energy savings compared to ASHRAE 90.1-2004
- 25.8% energy cost savings compared to ASHRAE 90.1-2004





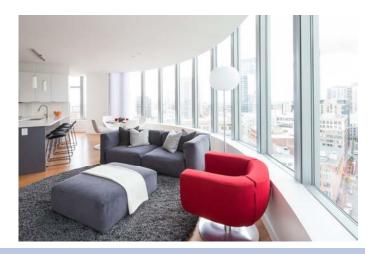






POE Highlights:

- Residence experience: overall thermal comfort, lighting, and layout.
- Maintenance clearance in mechanical penthouse
- Decentralized heating and cooling







Issues raised:

- Electric water heater serviceability
- Energy recovery unit controls
- Thermostat placement in studio apartments
- Sound and vibration traveling from mechanical penthouse
- Window frames



Lessons learned

- Importance of off-season commissioning
- Necessity of a thorough punchlist
- Impact of value engineering



Foam panel vibration isolation inside the Radian penthouse.



Agenda

Introduction

What is Post-Occupancy Evaluation?

- Value Proposition
- Process

Case Studies

- Non-Profit Office: Parks & People
- Multifamily Residential: Radian

Wrap-Up / Recap

Keeps the design team engaged beyond the warranty period.

• 3.5 years after the building was initially occupied, the design team remains engaged in helping the owner.



Owner gains better understanding of their building and why it was designed a certain way.

- Parks and People: DHW circulation pump Relatively small (and low-power) pump causes wait for HW in bathrooms but was designed to meet project's energy efficiency goals and limit the DHW loop's first cost.
- Radian: DHW heaters

The need to maximize rentable square footage forced the DHW heaters into a tight space.

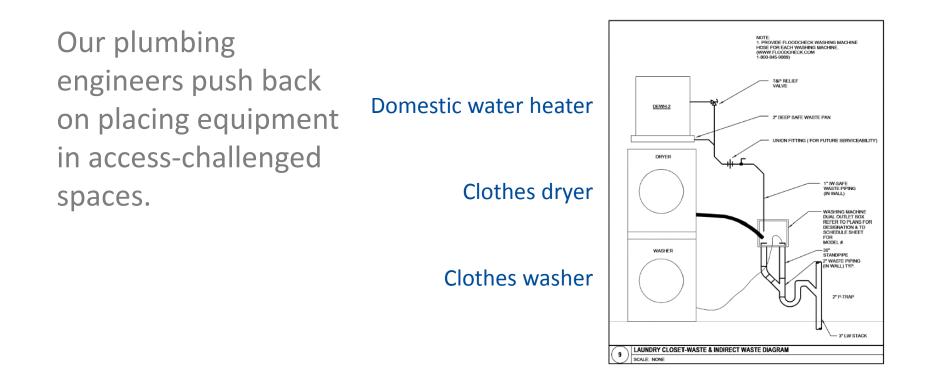
Provides recommendations and corrective actions

Examples:

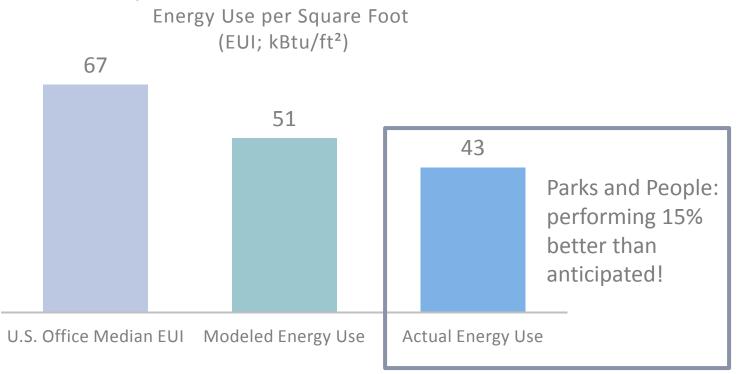
- Controls sequence modifications
- Upgrade lighting from CFL to LED
- Install vibration isolation hangers

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Incorporates lessons learned into future designs



- Analyzes real-life performance data to evaluate design decisions
- Follows up on commitments made by the project (EUI, IEQ metrics, etc.)



Deepens client relationship

As part of our POE of Parks & People, we were able to engage the architect and the greater Baltimore sustainable design community in a celebration of the project's LEED Platinum achievement.

We continue to work with that client and receive referrals due to this work.



Is POE Worth It?

- Yes! ... Assuming that:
 - The project team desires the data
 - The project team needs to follow up with and impress a good client
 - The project team believes there will be good lessons learned from the project

