INDIANA HIGH-PERFORMANCE BUILDING COST EFFECTIVENESS STUDY

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November 13, 2019 2019 Midwest Building Energy Codes Conference Midwest Energy Efficiency Alliance



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2010 Indiana Energy Conservation Code

- Updated due to 2009 ARRA.
- Based on ASHRAE 90.1-2007.
- Includes State amendments.
- Performance path removed by State.
- COMcheck allowed (thanks to AIA-IN).
- Set to expire in 2017.
- Given a one-year extender by Gov. Pence.
- Re-adopted until 2024.
- Every neighboring state has a more stringent energy code.

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Thrive Indianapolis

- City's first sustainability and resiliency action plan.
- February 2019: Adopted as an element of the City's Comprehensive Plan.
- Community task force included AIA and USGBC.
- Two overarching goals:
 - 1. Increase community resilience by prioritizing equity in policy, planning and project implementation.
 - 2. Achieve net zero greenhouse gas (GHG) emissions by 2050.
- All new buildings meet basic green building standards, and programs to increase energy and water efficiency are actively pursued in existing buildings.



INDY 3.0 Initiative

- Launched April 2018.
- All newly constructed municipal buildings built after 2018 must be LEED certified or equivalent.
- Municipal buildings will start tracking performance data.
- Looking for ways to incentivize certified green buildings – considering LEED as the vehicle.

Indy Best Practice: INDY.3.0

Mayor Joe Hogsett initiative to deal with Indianapolis' government buildings; technology, innovation and accessibility to city services; public safety; street maintenance; and infrastructure.

"With the launch of Indy 3.0, we acknowledge that the future of serving Indianapolis residents looks a lot more like an iPhone than it does a 25 story office building," said Mayor Hogsett. "And rather than ignore this reality, it's time to embrace the challenge and make a pledge to taxpayers that we will no longer penalize the present and fight the future by subsidizing the past."



Is using LEED good policy for Indianapolis?



Project Bumblebee Team

Indianapolis High-Performance Building Cost Effectiveness Study

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INDY-HPB

Precedent: City of Santa Monica High Performance Building Cost Effectiveness Study.

- By Integral and Skanska.
- Focused on multifamily.
- Based on real project costs for one project.
- Provide a starting point for policy basis.
- Examined LEED and LBC.
- Needs to be expanded upon.

Indy HPB Study:

- Examined LEED v4 (not v4.1 due to beta).
- Considered strategies for all four levels of certification.
- Based on real project costs for one project.
- Also a starting point for policy.





City of Santa Monica High Performance Building Cost Effectiveness Study

July 13, 2015

Prepared by

INTEGRAL

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LEEDv4 prompted project cost increases.

The combination of hard and soft project cost increased with higher certification levels.





LEEDv4 Certified and Silver had simple paybacks under 5 years.

Gold and Platinum require a long-range perspective on investment returns.

Certified 2.9 Years

Silver 4.4 Years Gold 11.2 Years

Platinum 26.6 Years

"LEED Equivalent" is a ruse.

Combined LEED registration and review fees varied between 1.85% and 3.93% of total LEED soft costs.

Fundamental Commissioning
and Verification

LEED Combined Review Fee •

LEED Registration Fee

Significantly Reduced GWP

Indy wants to achieve net zero greenhouse gas emissions by 2050.

Buildings account for 66% of Indianapolis' community-wide GHG emissions (but 17% drop by this sector in the past six years).



23.5% Potential reduction in operational carbon



An ominous divide on the horizon?

Lax / lagging energy codes are creating a strain.







Points by LEED Credit Category

LEED favors dense, urban envrionments.



Energy Savings By Category

Conservation measures have limitations.



On-Site Solar Pencils Out.

But incentives are critical to short-term return.



Installed:



Recommendations

- 1. This study is limited. It should be expanded to a greater sample size.
- 2. Energy conservation measures and highefficiency mechanical systems in new construction and major renovation should calculate the economic rate of return based on forecasted energy costs.
- Indiana should update its building codes because the State's current regulatory environment is straining the prospect of certified green building.
- 4. Project teams should implement an integrative design process.

- Project teams should prioritize on-site renewable energy as part of a comprehensive certified green building strategy.
- Municipalities and project teams should establish and become conversant in carbon impact metrics so that embodied and lifecycle carbon emissions can be more readily understood and addressed through building projects.
- Walkable communities should be prioritized due to potential environmental and human health benefits.

Bottom Line:

The study suggests that the value proposition for certified green building is becoming increasingly strained by stagnant and lapsing energy regulation compounded by moderate or low energy costs.

THANK YOU!

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