

OVERVIEW

The Bullitt Center has a single goal: to demonstrate the current state-of-the-art in sustainable design in order to influence the development and operation of other buildings around the world.

For example, the building was designed to generate at least as much electricity in a year from solar panels on its roof as it uses. In 2014, the Bullitt Center generated 60% more energy than it used, due largely to efficiencies that exceeded expectations. Simply put, it is the most energy efficient office building in the country.

The Bullitt Center is also the only office building in the United States to use rainwater for all purposes, including drinking, and the only one in the heart of a city to infiltrate all grey water into the ground on site. The Bullitt Center is the only commercial office building in the world to screen out toxic chemicals in all building materials and the only one in the US to achieve certification for use of 100 percent Forest Stewardship Council certified wood. It is the only six-story office building in the world to use solely composting toilets.



www.BullittCenter.org

PHOTO BY NIC LEHOUX

Given this list of exemplary characteristics, the Bullitt Center has received extensive media coverage, including *The New York Times* (link), *CNN* (link), *The Guardian* (link), and *Architectural Record* (link). The spotlight on the building has brought people from around the world to visit, including code officials from China, the Mayor of Copenhagen, the President of Bulgaria, the Administrator of the US Environmental Protection Agency, and officials of many Fortune 500 companies, colleges and universities.

Across hundreds of tours with people from all walks of life, one question comes up repeatedly: *What did it cost?*

Total project costs (hard costs, soft costs and land) for the 52,000 square-foot Bullitt Center were \$32.5 million. As the first of its kind, the building cost more than conventional construction. With the benefit of hindsight, the project team is now confident that subsequent buildings – even those that seek equally ambitious performance goals – will cost significantly less.

A careful analysis of the Bullitt Center’s finances demonstrates that for many developers and owners who plan to own and operate a building for a long time – including governments, academic institutions, museums, foundations and health care organizations – a compelling case can be made today that very-high-performance, deep green buildings can pass financial tests while also delivering a valuable stream of mission-oriented “external” public benefits.

PROJECT AT A GLANCE

THE BULLITT CENTER | 1501 EAST MADISON STREET | SEATTLE, WASHINGTON 98122

52,000 Gross square feet

\$32,500,000 Total project cost

250 YEARS Designed lifespan for the building

60 Energy Use Intensity (EUI) of a typical office building in Seattle

32 EUI of LEED Platinum office building securing all energy credits

16 Bullitt Center designed EUI

12 Bullitt Center EUI when fully tenanted (estimated)

9.4 Bullitt Center actual EUI in year one

26 Number of 400-foot deep geothermal wells

575 Number of solar panels on the roof

244 Kilowatts of installed generating capacity

243,671 Kilowatt-hours generated in 2014

152,878 Kilowatt-hours used in 2014

362 Toxic chemicals avoided in building materials

52,000 GALLONS
Size of rainwater storage cistern

98 OUT OF 100 WalkScore

TENANTS INCLUDE Bullitt Foundation, Hammer & Hand, Intentional Futures, International Living Future Institute, PAE Consulting Engineers, Point32, Seattle University Center for Environmental Justice and Sustainability, University of Washington Center for Integrated Design.



PHOTOS BY NIC LEHOUX

PROJECT COSTS

LAND **\$3,380,000**

HARD COSTS **\$23,360,000**

Pre-Construction	\$450,000
Construction	\$18,160,000
Owners Direct	\$2,940,000
Sales Tax	\$1,810,000

SOFT COSTS **\$5,290,000**

Architecture & Engineering	\$2,550,000
Permits & Municipal Fees	\$320,000
Utility Expenses	\$600,000
Testing & Inspection	\$140,000
Other*	\$1,680,000

* Sales, Leasing, Legal, Administration,
Property Management, Taxes, Insurance,
Bonds, Development Services

FINANCE COSTS **\$470,000**

TOTAL **\$32,500,000**

DISCUSSION

Although the total project cost for the Bullitt Center was \$32.5 million, the team is confident that – with what we know now, and in the revised regulatory environment – the project could be developed today for a significantly lower cost.

For example, in the first full year of operation, the Bullitt Center generated 60 percent more electricity from the photovoltaic panels on its roof than it used. While that surplus is expected to decline (since the building was not at full occupancy in the first year), even a fully occupied Bullitt Center will generate significantly more electricity than it uses. This is due to energy efficiency that has exceeded expectations. If we built the Center today, we would use fewer solar panels and a much smaller steel superstructure at a significant cost savings.

A large impact came from the dense, urban site on which the Bullitt Center is located. Because it was such a difficult site (chosen for reasons including walkability, transit, and solar access) we faced significantly increased costs for staging, drilling geothermal wells, hoisting the PV array, and other aspects of the project. For developers on a typical site with normal dimensions, the additional space surrounding the construction operations would significantly lower the overall and per-square-foot costs.

Pre-construction costs, including difficult design problems and regulatory hurdles, were high for the Bullitt Center due to the innovative nature of the project. Built today, the Center would have a shorter pre-construction period with corresponding lower costs.



Delivering Turn-Key Space

To assure that it achieved its performance goals, the Bullitt Center developed its core and shell far beyond the “cold dark shell” that is typical of commercial developments. The developer delivered a nearly “turn-key” warm shell, including in-floor radiant heating, painted drywall, finished ceilings, full kitchen with lighting and appliances, bathrooms and other features that are typically left to be constructed as “tenant improvements”.

COMPARISON WITH OTHER PROJECTS

Visitors commonly ask about the “premium” that the Bullitt Foundation paid. To answer that question requires some context.

To calculate a premium, one must have a baseline, or comparable project to measure it against. But the innovations in the Bullitt Center make it challenging to find a true comparison, which was why the project was developed in the first place! In addition, few other projects are willing to release detailed financial information, so apples-to-apples comparisons require assumptions about what is included in the limited cost data available. For example, the Bill and Melinda Gates Foundation states in broad terms that its headquarters cost \$500 million, but it is not clear if this includes all costs (such as land) or not. For the sake of the comparison below, we assumed all costs were included.

With these caveats in mind, the Bullitt Center can be compared to three other recent real estate projects – the Gates Foundation’s headquarters and Stone34 in Seattle, and the David and Lucile Packard Foundation’s 343 Second Avenue offices in California. All three projects are on track to be certified LEED Platinum, with the Packard Foundation also earning Net Zero Energy certification from the International Living Future Institute, the same organization that manages the Living Building Challenge.

Based on the costs for these three projects, which are as comparable as any for which we have access to financial information, the Bullitt Center did not

require a premium. Differences were noise, not signal. The Bullitt Center cost \$625 per square foot; the comparable projects averaged \$633.

That said, there is little transparency when it comes to financial information about real estate projects, so direct comparisons are more art than math. Many buildings cost significantly less than the Bullitt Center, but without greater disclosure of the costs involved and the quality of the space delivered, it is impossible to calculate a “premium.” We are confident that any premium is justified by the superior performance of the Bullitt Center, the exceptional comfort it offers tenants, and the public benefits it confers.

<p>Bullitt Center SEATTLE, WA</p> <p>52,000 square feet Cost: \$32,500,000 Cost per square foot: \$625</p>	<p>Bill & Melinda Gates Foundation Headquarters SEATTLE, WA</p> <p>900,000 square feet Cost: \$500,000,000 Cost per square foot: \$556</p>
<p>David & Lucile Packard Foundation Headquarters LOS ALTOS, CA</p> <p>49,000 square feet Cost: \$37,200,000 Cost per square foot: \$759</p>	<p>Stone34 SEATTLE, WA</p> <p>120,000 square feet Cost: \$70,100,000* Cost per square foot: \$584</p>

**This value comes from publicly available information when the building sold in December 2014.*

BENEFITS TO THE PUBLIC

While the analysis above focuses solely on costs of the project, there are many benefits from the project that accrue broadly to the public and are not captured by the current financial system.

In a recent report, *Optimizing Urban Ecosystem Services: The Bullitt Center Case Study* ([link](#)), a team of researchers found that just six of the building's green features could produce more than \$18 million in benefits to society over the life of the building. The features analyzed by the research team include: energy efficiency, solar energy, walkability, rainwater capture and reuse, composting toilets and enhanced carbon storage in the forest from Forest Stewardship Council wood.

Although many public benefits, such as affordable housing, pollution reduction, and sanitation are subsidized, most investments in sustainability (e.g. using wood from responsibly managed FSC-certified forests, building materials that don't harm construction workers or tenants, and beyond-code energy efficiency) are treated as voluntary charitable acts by developers. Most real estate developers don't see themselves as running "charities" to produce

"public benefits." They are running businesses to maximize profits. In this context, resilient, sustainable buildings are at a commercial disadvantage to conventional buildings that do no more than is required by building codes.

Yet public benefits from green building and external costs from traditional development are very real. For example, stormwater mitigation, which is directly related to rainwater capture and reuse, can be extremely expensive for cities to address. Seattle recently spent more than \$1 billion to address a part of the stormwater challenge it faces. The Bullitt Center produces no stormwater runoff, but it received no compensation for reducing the burden that the city would otherwise have to address.

**THE FULL REPORT CAN BE
DOWNLOADED HERE.** ([link](#))

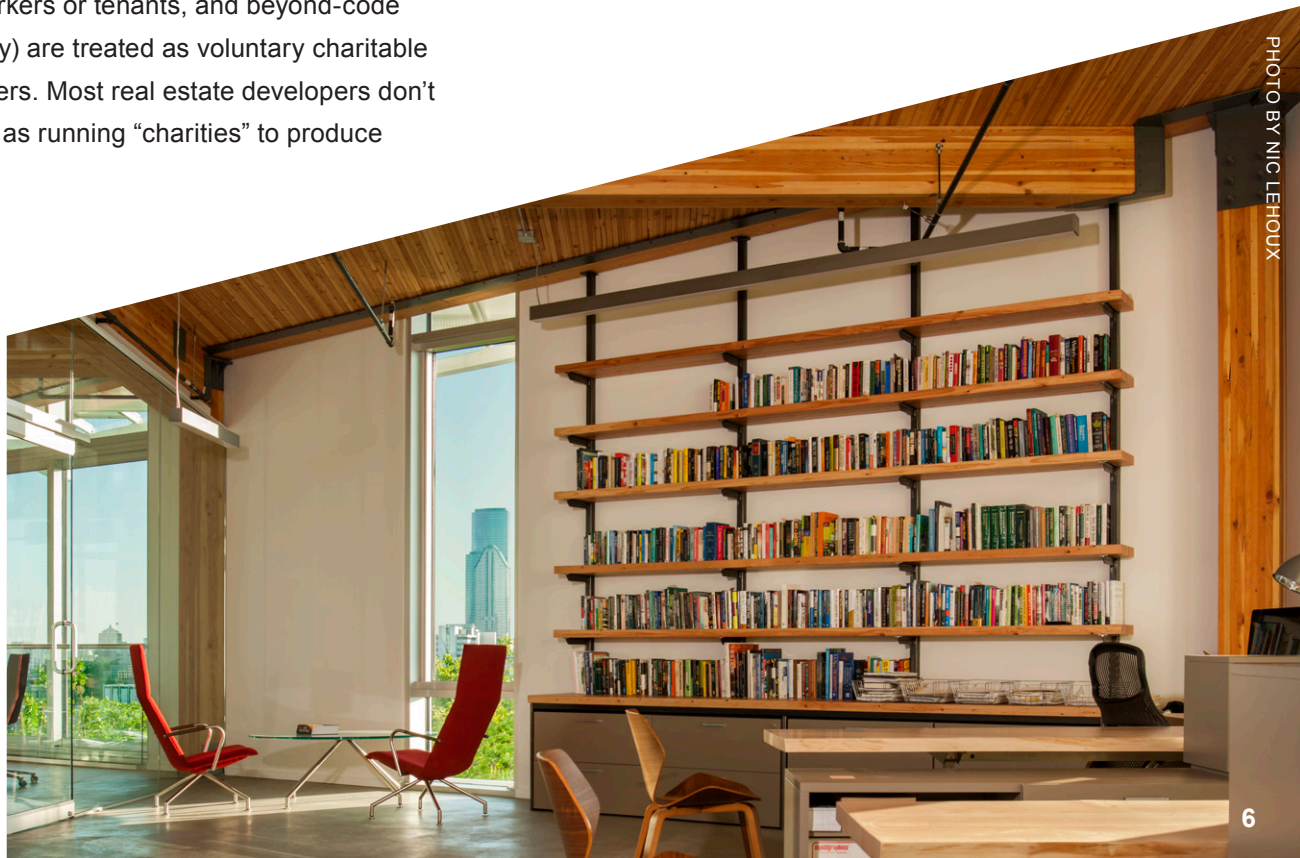




PHOTO BY NIC LEHOUX

CONCLUSION

As the first urban office building to pursue the Living Building Challenge, the Bullitt Center cost more than an average building. How much more depends on what you choose to compare it with. The range is from zero (compared to a high-quality peer) to perhaps 30 percent (when compared to a standard code building with no green amenities).

The purpose of the Bullitt Center was to help shape future projects by overcoming obstacles and breaking down barriers. There is little doubt that the identical project today would cost significantly less. For example, identifying building products that do not include toxic chemicals required more than two years of research. Yet today, **this product list is available for download** (Link) on the Bullitt Center website. While future project teams may choose different products, the Bullitt Center list represents a starting point and an opportunity to save time and resources.

The potential savings from the solar array have already been mentioned, and a similar dynamic is true for many parts of the project.

Today society does not incorporate values related to public benefits into financial analyses, but that may change soon. Even so, a strong case can be made for high performance green building, especially to organizations that are balancing a range of interests

in their real estate decisions. Universities and academic institutions have educational missions. Health care organizations focus on health for patients and workers. Governments develop with equity and sustainability in mind. None of these organizations commonly sell their real estate holdings, so they can apply a more patient, long-term view.

The Bullitt Foundation considers the Bullitt Center to be an important long-term investment, with moderate returns expected in the near term and very substantial returns over its 250-year life. Yet the Bullitt Foundation's organizational mission is what drove development of the Bullitt Center, just as health, education and public sector missions can drive development of other new green buildings.

The Bullitt Center demonstrates that – even as the first of its kind – it is possible to push the envelope on environmental performance for a reasonable premium, while also delivering a steady stream of benefits to the owner, occupants and society for many years to come.

For more information about the Bullitt Center, please visit www.bullittcenter.org.