

Living Building

Under construction - the greenest commercial building on earth

Bullitt Center • Seattle, Washington



Bullitt Center architectural rendering courtesy of The Miller Hull Partnership, LLC.

Living Building

The Bullitt Center

Seattle's Bullitt Center seeks to be a "living building" -- one of the greenest, most energy-efficient commercial buildings on earth.

The six-story, 50,000 square foot Bullitt Center will change how buildings are designed, built and operated.

Its goal: to shift the benchmarks significantly forward for long-term environmental performance and energy efficiency, renewable energy and other green building technologies.

The Bullitt Center is being constructed to meet the ambitious goals of the Living Building Challenge, the world's most stringent criterion for sustainability.

A rooftop solar array will generate all the electricity the building uses. Its water will come from rain, and all wastewater will be treated onsite.

The Bullitt Center's design does more than meet the tough targets of Net Zero energy and water use.

It's being constructed without anything on a "red list" of commonly used construction materials; substances designated by the U.S. Environmental Protection Agency as harmful to living creatures -- including humans.

Designed to maximize fresh air and daylight, the Bullitt Center will be living proof that buildings can be environmentally friendly, energy-efficient, pleasant, healthy and sustainable.

The Bullitt Center is expected to be completed in late 2012.

Joint & Seam Filler (pink) and FastFlash (red) seal the seams and rough openings against air leakage on Seattle's Bullitt Center before being covered with Cat 5 primary air and waterproof barrier. Like Cat 5, Joint & Seam Filler and FastFlash withstand hurricane conditions, are phthalate-free and are Red List-compliant.



An installer applies Cat 5 primary air and waterproof barrier to GlasRoc sheathing on the ground floor of Seattle's Bullitt Center. Phthalate-free Cat 5 meets the environmental requirements for the Living Building Challenge. It also meets the performance requirements to stop air and water leaks in conditions from mild to category 5 hurricanes.

Net-Zero Energy Efficiency

Net-Zero energy efficiency means the building creates ALL its own energy. Energy drawn from the grid = zero. In a Net-Zero building, there is no energy to waste.

That means air leaks through the building envelope, which normally account for up to 40 percent of heating and cooling costs, cannot be tolerated.

Bullitt Center builders chose PROSOCO R-GUARD® FastFlash® Air & Waterproof Barrier system from dozens of alternatives to do that job.

The continuous, seamless, durable, vapor-permeable system contributes to energy efficiency by creating a continuous, unbroken barrier to the movement of air through the building envelope -- tested and proven in weather from mild to Category 5 hurricanes - even before the cladding is installed.



LIVING
BUILDING
CHALLENGE[™]
2.0[™]

Seattle's Bullitt Center

And PROSOCO® R-GUARD® FastFlash Air & Waterproof Barrier

Stopping air leaks through the building envelope is crucial to energy efficiency in all buildings, Net-Zero, Passive House or standard construction.

The U.S. Department of Energy estimates up to 40 percent of annual heating and cooling costs result from expensively heated or cooled air leaking out through seams, joints, and penetrations, and around windows and doors in building envelopes.

Peel and stick membranes can't stop it, because they eventually delaminate, letting air through and letting in moisture.

Fabric wraps can't stop it because they rip and tear under windloads during construction. Even the tiny staples used to fasten fabrics create air leaks.

Along with peel and stick membranes, many vapor-impermeable fluid-applied membranes trap water in the walls and around rough openings. This speeds up the very deterioration the products are supposed to prevent.

The Bullitt Center's builders chose the FastFlash system expressly to surmount these problems.

Supremely durable, yet simple to apply, the FastFlash system solves many other problems in addition to stopping air leaks at a level enabling Net-Zero energy-efficiency.

Unlike other products that must be protected from rain while curing, the FastFlash system is instantly waterproof from the moment it's applied.

Unlike other products, you don't have to wait for rain-dampened surfaces to dry out before you install the system. Moisture accelerates FastFlash curing time. Because it's vapor permeable, wet substrates underneath can dry out.

And unlike other products, FastFlash doesn't contain red-listed phthalates, classed as harmful air and water pollutants by the U.S. Environmental Protection Agency.

In a construction industry ever-more conscious of environmental concerns, the FastFlash Air & Waterproof Barrier system complies with the Living Building Challenge - the most environmentally friendly standard ever created.



A crane places the steel grid that will hold the massive photo-voltaic solar array set to power the Net-Zero energy efficiency Bullitt Center. The orange-brown coating on the building's sheathing is PROSOCO R-GUARD Cat 5 Primary Air & Waterproof barrier.

The Red List

The environmentally friendly FastFlash Air & Waterproof Barrier System complies with the Living Building Challenge Red List requirements:

The project cannot contain any of these Red List materials:

- Asbestos
- Cadmium
- Chlorinated Polyethylene and Chlorosulfonated Polyethylene⁴³
- Chlorofluorocarbons (CFCs)
- Chloroprene (Neoprene)

- Formaldehyde (added)
- Halogenated Flame Retardants⁴⁴
- Hydrochlorofluorocarbons (HCFCs)
- Lead (added)
- Mercury
- Petrochemical Fertilizers and Pesticides⁴⁵
- Phthalates
- Polyvinyl Chloride (PVC)
- Wood treatments with Creosote, Arsenic or Pentachlorophenol

With the massive photo-voltaic solar array in place, Seattle's Bullitt Center begins taking on its high-performance aluminum curtain-wall cladding. The Bullitt Center is designed for an Energy Use Intensity (EUI) less than a quarter that of typical Seattle buildings, due in large part to the building envelope.



P R O S O C O
R-GUARD[®]
 for airtight, waterproof walls



fiber reinforced fill coat and seam treatment

- Gun-grade detailing compound for open joints and seams up to 1/2-inch (13 mm).
- Bonds and cures in wet weather and on damp substrates.
- Tolerates rain immediately after application.
- Saves time – needs no joint-reinforcing tapes.
- Breathable – lets damp surfaces dry.



fluid-applied flashing membrane

- Liquid flashing membrane for rough openings allows same-day installation of windows, doors and other wall assembly, waterproofing and air barrier components.
- Easy to gun and spread in all climates.
- Bonds to most building materials without priming, even when damp and in wet weather.
- Withstands weather exposure up to 6 months.
- Breathable – lets damp surfaces dry.



EXTREME weather air- and waterproof barrier

- Fluid-applied waterproofing and air barrier membrane combines the best of silicone and polyurethane.
- Self seals fastener penetrations.
- Bonds and cures in wet weather and on damp substrates.
- Easy roller application in all climates.
- Breathable – lets damp surfaces dry.



air and weather barrier sealant for windows and doors

- Long-lasting, weather-tight seal prevents moist outside air from entering, and conditioned indoor air from escaping around window and door assemblies.
- Paintable with most paints after 2 hours. Compatible with most urethane, silicone and acrylic sealants and coatings.
- Stops penetration of air and water under normal and extreme weather conditions.
- Will not support mold growth.
- No shrinkage. No staining. Non-yellowing.

