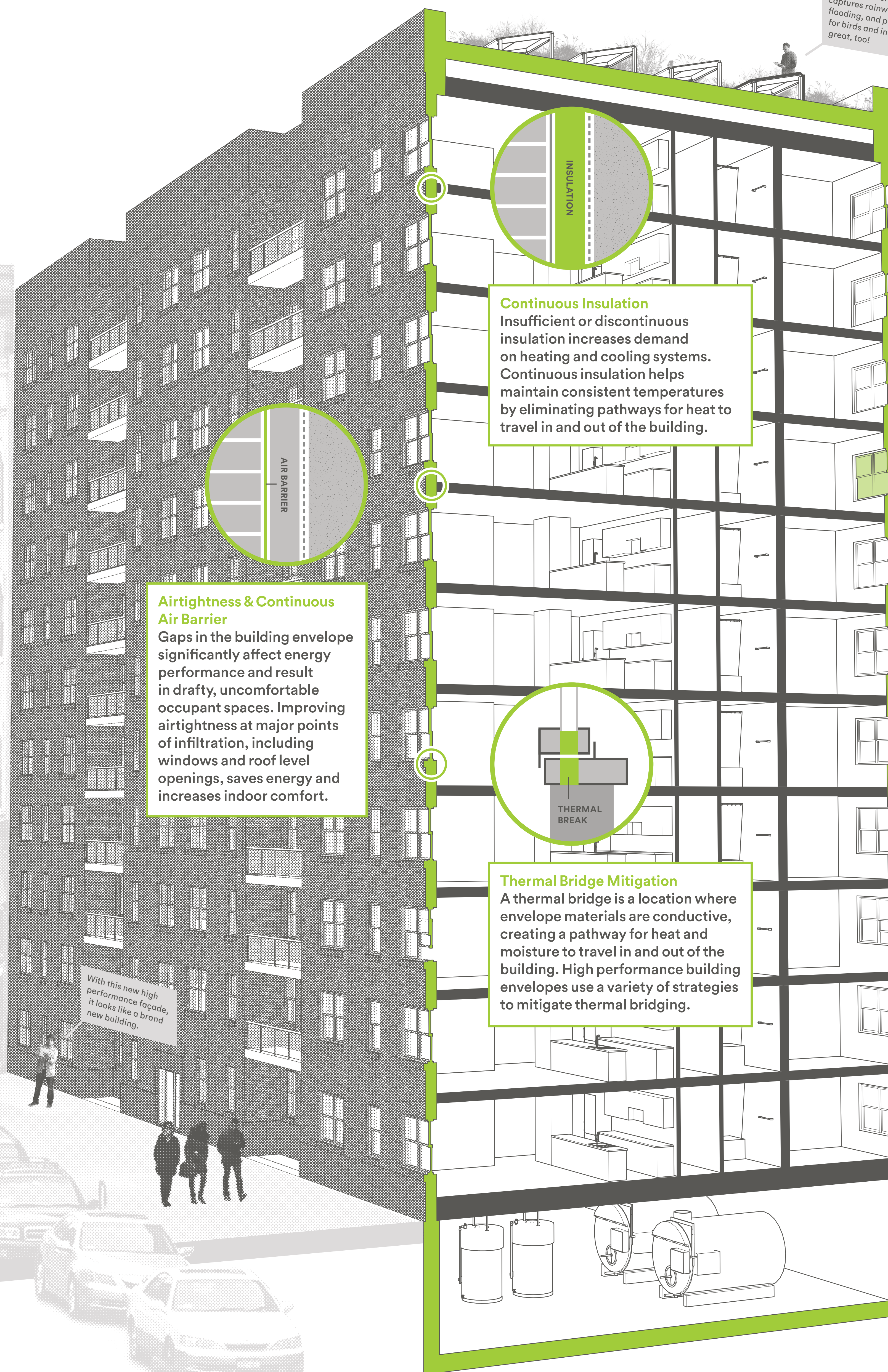


# high performance building envelopes

A building's envelope—the barrier between the inside and outside of a building—moderates the transmission of heat, air, and moisture.

When correctly installed and coordinated, a series of envelope components and materials create a protective barrier that helps maintain desired indoor temperatures.

A high performance building envelope is airtight with a continuous air barrier, sufficiently and continuously insulated, incorporates high-performing windows and doors, and mitigates thermal bridging. These components work together to minimize the demand on a building's heating and cooling system, resulting in substantial energy and cost savings.



**Continuous Insulation**  
Insufficient or discontinuous insulation increases demand on heating and cooling systems. Continuous insulation helps maintain consistent temperatures by eliminating pathways for heat to travel in and out of the building.

**Airtightness & Continuous Air Barrier**  
Gaps in the building envelope significantly affect energy performance and result in drafty, uncomfortable occupant spaces. Improving airtightness at major points of infiltration, including windows and roof level openings, saves energy and increases indoor comfort.

**Thermal Bridge Mitigation**  
A thermal bridge is a location where envelope materials are conductive, creating a pathway for heat and moisture to travel in and out of the building. High performance building envelopes use a variety of strategies to mitigate thermal bridging.

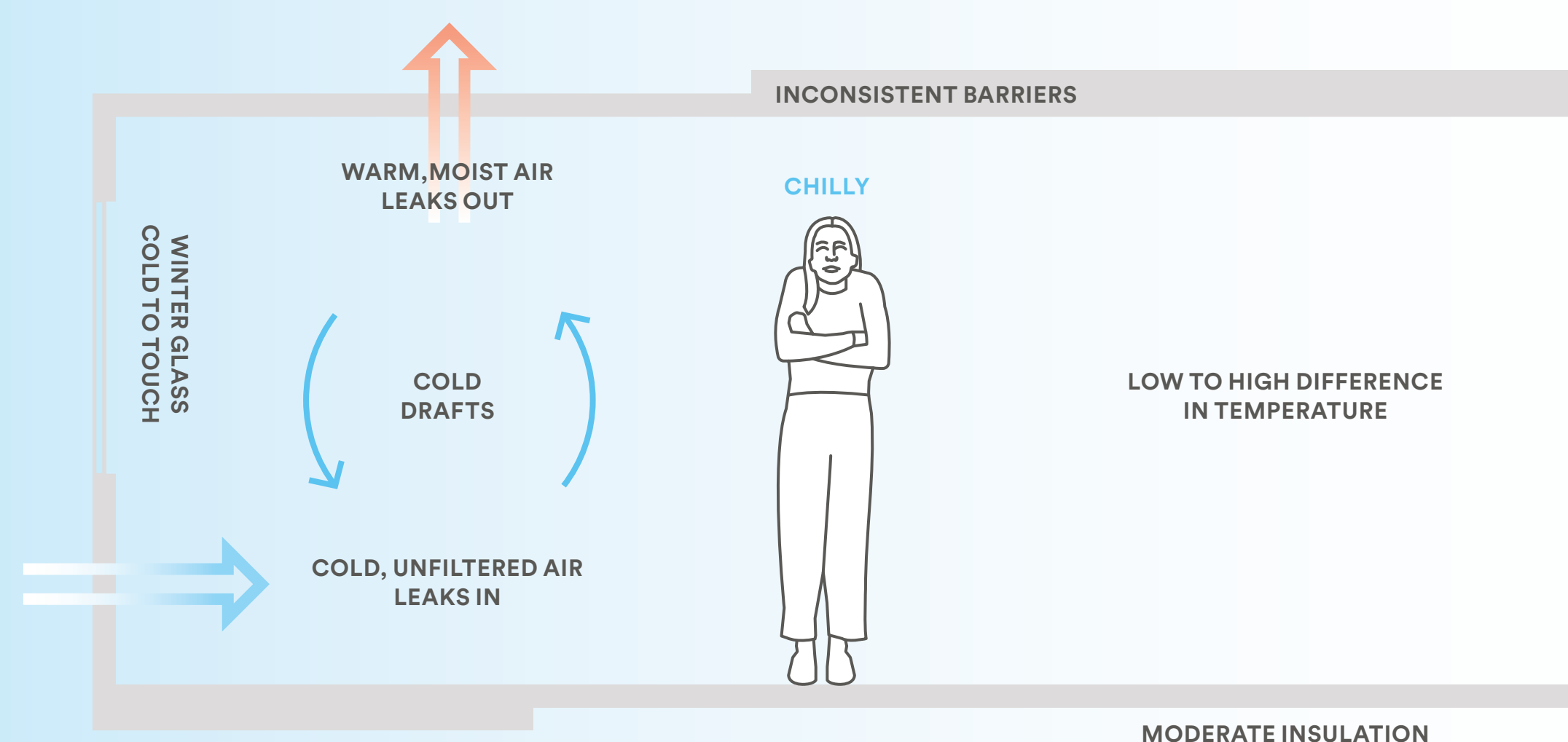
**Biosolar Roof**  
Combining solar photovoltaic panels with green roofs can enhance the performance of both systems, providing shade that helps plants grow and lowering ambient temperatures which can increase the efficiency of solar panels.

**High Performance Doors and Windows**  
Conventional windows and doors have poor thermal performance and also cause substantial air infiltration if not properly installed. These problems can be solved by installing high-performance windows and doors that are well insulated, thermally broken, and airtight.

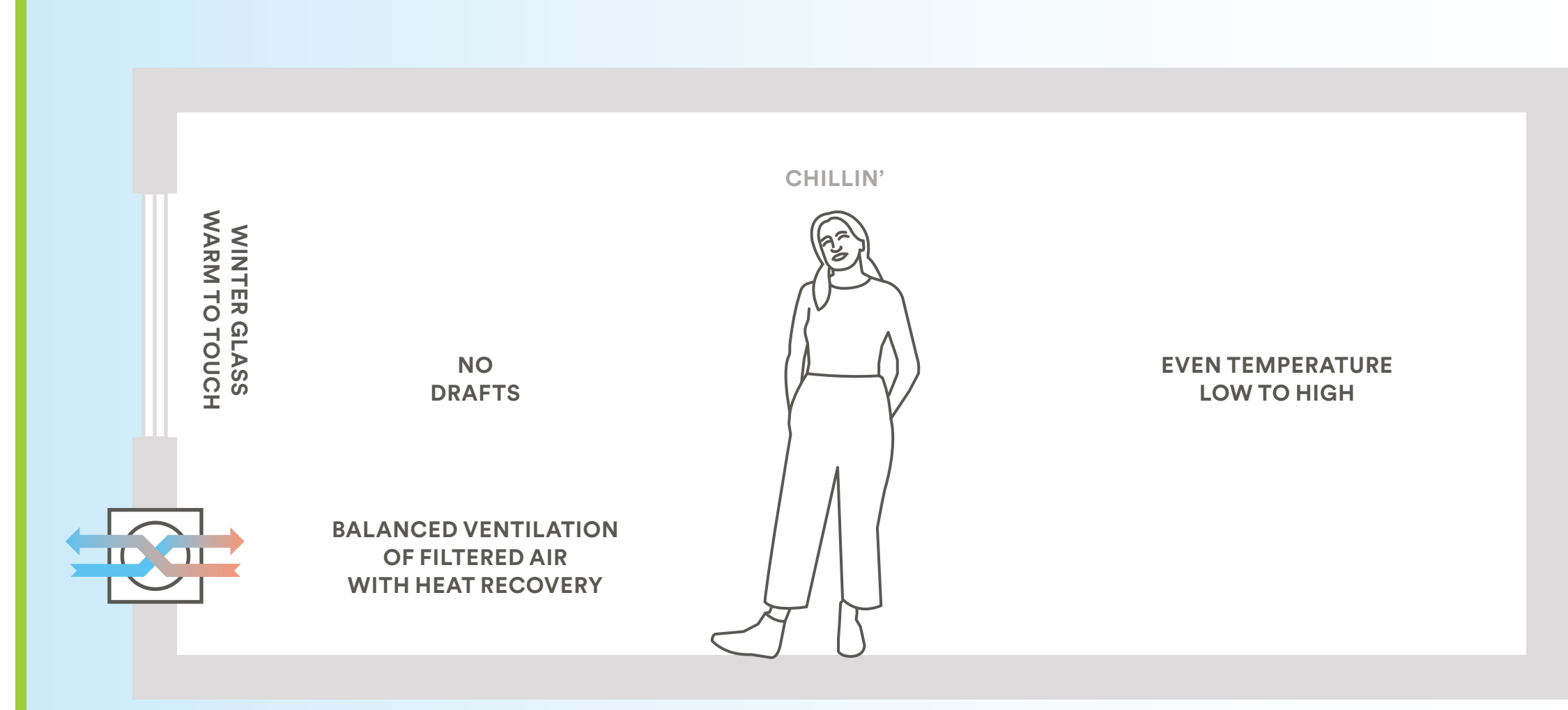
With this new high performance facade, it looks like a brand new building.

## indoor comfort

A typical building, even if it meets code requirements, may not do enough to support indoor comfort. Inconsistencies in insulation and airtightness create drafts and hot or cold spots in rooms, making it difficult for occupants to maintain comfortable body temperatures. High performance building envelopes go above and beyond code requirements to eliminate drafts and minimize temperature variation, resulting in superior thermal comfort and enjoyable indoor spaces.



code built building



high performance building