

STANDARD BEARERS:

Astoria, Oregon

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PRESERVING ASTORIA'S HISTORIC BUILDINGS THROUGH ENERGY CODE COMPLIANCE

Just a few miles from the Pacific Ocean sits Astoria, Oregon—the oldest U.S. settlement west of the Rocky Mountains and home to hundreds of historic commercial and residential properties. This history, however, is at risk. Compliance with modern building codes for alterations and repairs to historic buildings can be complicated and confusing to building owners and designers, and as a result, several of Astoria's historic buildings have deteriorated over the past few decades. This deterioration

hurts both the individual buildings and the community as a whole, as neglected and abandoned buildings lead to dead spaces that reduce foot traffic to local businesses. Seeking to repair and preserve Astoria's history, the City looked to an often-overlooked tool: Energy code compliance.

Astoria's Building Department hired Building Official and Code Enforcement Officer Jack Applegate in 2008, and tasked him with dispersing

the myth that older buildings cannot be upgraded or remodeled without incurring hefty costs. Local stakeholders needed to learn how preservation and efficiency could not only be accomplished while meeting modern energy

code requirements, but also that cost-effective and innovative solutions existed, and that these efforts could potentially improve life safety and comfort.

A FOUNDATION FOR IMPROVEMENT

Facing a limited budget, City Planner Rosemary Johnson and Applegate took a diligent approach to stakeholder engagement. By forming a partnership with the Astoria Downtown Historic District Association, dispatching staff to participate in local organizational meetings, designing education programs, and providing multiple in-depth code trainings, a strong foundation was laid for improvement. Applegate joined the North Coast Building Industry Association, a local nonprofit contractors organization and helped implement new training programs and free energy code educational offerings to help people understand critical exemptions and alternate methods for historic building renovation.

The City adopted an internal policy for plan review that educates permit applicants in the design phase and maximizes the building code and energy code exceptions permitted for historic buildings. To do this, the City referred to Chapter 34 section 3409 and the alternate method provisions in Chapter One of the Oregon Structural Specialty Code. This



proactive approach to building and energy code plan review and inspection enforcement has been a key element for the revitalization Astoria's built environment is experiencing today.

AN ALTERNATIVE PATHWAY TO BETTER PERFORMANCE

When allowed to function as originally intended and given simple upgrades, historic buildings can be nearly as energy efficient as newly-constructed buildings. As a result, property owners and building permit applicants are often encouraged by the City to bring their buildings up to historic standards and to register them with local, state, or national historic preservation designations. In addition, some of the more stringent and costly upgrade requirements in Astoria are waived when performance standards of the original construction are restored in conjunction with the addition of efficient lighting and heating, and limited waste of new materials.

This policy has led to increased occupancy of once-abandoned commercial spaces, reuse of materials, saved energy, and ultimately an increase in life safety for the occupants of buildings—overly restrictive requirements no longer impede the common sense application of historically proven methods of conservation.

THE ALLEN BUILDING

The Allen Building in Astoria recently received the Harvey Award, which is presented each year to property owners who have completed exterior restoration or beautification of a building that exemplifies the historical attributes of the building or the architectural heritage of Astoria for Historic Restoration. The Allen building permit application was approved by Applegate as an

alternate to current IBC and IECC requirements. The building owner and architect Ted Osborn took an environmentally conscious approach, combining restoration and new technology to ensure significant improvements in building energy use, while avoiding much costlier measures that may have otherwise been required and which may have deterred the customer from making improvements. In upgrading the Allen Building, the team:

- Added R-12 and R-18 insulation on exterior walls and R-33 insulation underneath the roof where none existed before.
- Upgraded the heating system from a large-capacity gas furnace to a ductless heat pump HVAC unit.
- Demolished poorly planned interior spaces and restored the building's original floor plan and volume, allowing the building to better function through passive energy.
- Installed ceiling fans to help circulate natural ventilation.
- Restored original skylight openings, adding natural light during typical business hours.
- Used compact fluorescent lights wherever possible, reducing energy use while the space is occupied.
- Painted ceilings white to aid light reflectivity.



Allen
Building:
Astoria,
Oregon

THE OWENS-ADAIR BUILDING



An excellent example of an alternate method of energy code compliance approval in Astoria is the Historic 1931 Owens-Adair Senior Housing facility. A highly visible historic building in the Downtown National Register Historic District, the four-story building has over 250 windows. The project manager consulted with Applegate and Johnson because the bids for the desired window replacement were far beyond the owner's budget. The windows were in poor shape, leaked air, were hard to maintain due to the building height, and were a safety hazard—one tenant broke her arm when she opened a window and it fell on her.

Something had to be done within budget. Applegate allowed them to restore and upgrade the windows in place instead of a full replacement, using permitted code exceptions so as to not prevent the project from moving forward. The cost for the total window replacement was originally estimated to be \$680,000 and was going to be abandoned due to cost. However, Johnson and Applegate encouraged the building owner to collaborate on the alternate method for the restoration project and repair the in-place windows.

By doing so successfully, the savings were significant and the project cost was reduced by over \$450,000 so the owners moved forward with the project and benefited with energy savings of over \$1,000 per month starting the first month after the project was completed. The restoration project earned the Oregon Heritage Excellence Award for preservation.

- Restored and painted exterior window frames and replaced seals.
- Replaced existing glazing with double pain glass in original frames.
- Restored all working components for safe opening and improved egress.

STAKEHOLDER ENGAGEMENT

- Published Oregon Coast Green Building Newsletter and Facebook page. The audience is just over 1,200 and growing. The newsletter is published quarterly in digital format and the Facebook page is updated on a weekly basis with tips on energy conservation, legislation activity, potential code changes, and news on all things historic preservation and energy conservation related.
- Developed brochures to provide a clearer understanding of permit and licensing requirements and the importance of building codes. Brochures are available at the City Hall front counter and through information on a web site titled permitsprotect.com.
- Developed course approved by the Oregon Construction Contractors Board as a continuing education developer and provided continuing education classes for licensed contractors in Oregon in the fields of structural, mechanical, energy, and plumbing codes as well as job safety.
- Volunteered ICC Green Building Code Exam Committee member

- Volunteered on the ICC Building Codes Action Committee helping to write the next generation of building and energy codes with the inclusion of provisions for restoration of historic buildings.
- Building codes instructor and education provider for Clatsop Community College, (building codes program for historic restoration degree program).
- North Coast Building Industry Association (Local Home Builders Association) Vice President, provided energy code education, code development updates, and community service project management.
- Member of the Oregon Construction Contractors Board, Home Inspector Exam Committee

STUDENTS LEARN HISTORIC PRESERVATION AND RESTORATION AT CLASTOP COMMUNITY COLLEGE



Jack Applegate,
Building
Official

Applegate is an instructor on energy codes for students at Clatsop Community College. The college offers a degree in Historic Preservation and Restoration that integrates green building practices. With funding and support from Pacific Power, the Oregon Main Street Program, and the Energy Trust of Oregon, his students compiled information for the resource *Historic Preservation & Energy Efficiency: A Guide for Historic Commercial Buildings*.

Applegate served on the Advisory Committee for Clatsop Community College Historic Preservation degree program who developed this comprehensive 44-page guide. The guide offers details on how to retain existing energy-efficient features and implement new technologies while maintaining the building's character. Several examples from

restoration projects in Astoria are featured in this guide.

<https://www.pacificpower.net/preservation>

STANDARD BEARERS AWARD

The annual Standard Bearers Award is presented by the Institute for Market Transformation and the International Code Council to recognize leadership in raising energy code compliance. For more information visit <https://www.imt.org/standardbearers>.

PUBLIC OUTREACH BUILDING SAFETY MONTH DISPLAY



Historic
Preservation
Energy Guide



Pictured: Mayor Willis VanDusen,
Sherri Willams and Vicky Schiele,
City Planning Dept and Jack
Applegate, Building Official