

White Stag Block Adaptive Re-Use Portland, Oregon

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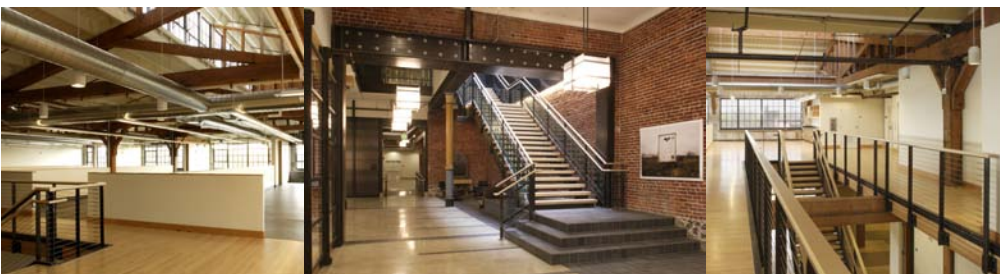
White Stag Block;
Adaptive Re-use



White Stag Block at street level
Source: Fletcher Farr Ayotte Architects

The White Stag Block is composed of three buildings, the White Stag Building, the Skidmore building, and the Bickel building. The White Stag Block is an adaptive re-use project located in downtown Portland, Oregon, just west of the Burnside Bridge and adjacent to the Portland Saturday Market. More importantly, the location of the block is within Portland's Skidmore/Old Town Historic District, which is a district that is listed on the National Register of Historic Places "for its historical associations with the early development and economic growth of the Pacific Northwest's most important urban center of the last half of the nineteenth century." (National Register of Historic Places, 1977). The strict preservation guidelines set forth for this historic district created a challenging architecture and preservation project, which resulted in the reinvigoration and reintegration of a historic building into central Portland's urban fabric.

The White Stag Block buildings exhibit Gothic, Italianate, and Utilitarian architectural styles. The three buildings had been nearly forgotten and left vacant until the effort, beginning in 2006, to restore the block and create one unified space (Portland Spaces, 2009). Since completion of the renovation in 2008, the University of Oregon has occupied approximately 54% of the building with their School of Allied Arts and Architecture, Journalism, and other university uses (Interface Engineering, 2008).



Interior photos of White Stag Block

Source: Portland Spaces



"The 2008 renovation of the White Stag Block ties green building innovations to the heart of the historic Old-Town of Portland." - University of Oregon

Portland City Statistics

Population: 557,706

City Area: 145.4 Sq. Miles

**Density: 3,835.7 People
per Square Mile**

Total Park Acreage: 12,591

**Park acreage per 1,000
residents: 22.57 acres**

Governing bodies:

- Metro
- Portland Parks and Recreation

Source: http://depts.washington.edu/open2100/Resources/1_OpenSpaceSystems/Open_Space_Systems/portland.pdf

Context

The Skidmore/Old Town Historic District of Portland was once the most important part of the City, but over time it lost its allure, resulting in many vacant buildings contributing to the development of a place that was undesirable to live in or conduct business in. However, in recent years, Portland has recognized the importance of this district and encouraged revitalization efforts (through tax incentives) to make it the true center of the City once again. Within this context, the White Stag Block was the perfect location for a preservation and redevelopment project; accordingly, the renovation of the White Stag Block helped play an important role in the revitalization of this historic district. The new tenants in the area, such as the University of Oregon, draw an increasing number of businesses and have opened the door to other revitalization projects (University of Oregon, 2008). The overall adaptive re-use efforts of the White Stag Block has spurred urban redevelopment in this district.

Another important contextual element influencing the White Stag Block re-use project was the historic nature of the buildings, which presented the challenge of respecting the historic architectural character while also incorporating environmentally sustainable techniques to modernize the buildings. The requirement and limitation of preserving the buildings' exteriors required that all technical improvements had to be made internally. For example, the mechanical equipment needed to be hidden in the basement, roof and a lightwell (University of Oregon, 2008).



Source: Google Maps

White Stag Block; Adaptive Re-use

History

Skidmore/Old Town Historic District become a National Historic Landmark in 1977. This designation reflects the districts role in early settlement of the Pacific Northwest and its exceptional historic architecture.

The White Stag blocks is composed of three buildings that cover an entire city block.

Bickel Block building (1883) designed by Oregon Architect, Justus Krumbein in the Gothic style. Cast iron was a common building material at the time for its decorative appeal and it was thought to be resistant to industrial fires. Cast-iron columns were made by Architectural Iron Works of San Francisco. The original tenant made machines for the logging industry and it was later home of the “Wonderstone” a masonry product that was also used to cover the cast iron pillars and storefront. The building was later set fire to by an owner who wanted to collect his insurance claim. Listed as a Primary Landmark in 1975.

Skidmore Block building (1889) designed by Charles E. Sitton has an Italianate-style cast iron facade and served originally as a warehouse. Construction of the Burnside Bridge resulted in removal and rebuilding the south facade at an angle. Listed as a Primary Landmark in 1975.

White Stag building (Hirsch-Weiss building) unknown Architect (1907) is a Utilitarian design and was originally occupied by Willamette Tent and Awning company for manufacturing and warehouse space. It was later owned by White Stag Sporting Goods in 1931. White Satin Sugar rented the roof space for a company sign in 1940. This was later reworded to become White Stag, and updated later to read Made in Oregon to reflect the company that sells local products. In 1972 the Norcrest China Company owned by the Naito family moved to the White Stag building and soon became a major retailer in Portland. It closed in 2004. In 2006 the building was purchased by White Stag Block, LLC managed by the Venerable Group and the University of Oregon signed an 18-year lease with an option to purchase. The building underwent major renovation that were in line with Historic Landmark restrictions. Listed as a local Historic Landmark.

(Source for historic information: University of Oregon, 2008; National Register of Historic Places, 1977)

Skidmore Block Building
Source: University of Oregon



Bickel and White Stag Buildings
Source: Portland Architecture



Time Line

1883 Bickel Block designed by Justus Krumbein

1884 Willamette Tent & Awning Co established, by Henry Wemme

1889 Skidmore Building completed for Charles E. Sitton

1907 White Stag and Hirsch-Weiss Building is built on Willamette River

1925-26 Burnside Bridge is built and a portion of the building is removed for an on-ramp. A 5th story is added

1931 Harold Hirsch founds “White Stag” sportswear

1940 White Satin Sugar Company sign is built by Ramsey Signs

1959 Sign is changed from “White Satin” to “White Stag”

1970s Naito family purchases the White Stag Building

1997 Lettering on the sign is changed from White Stag Sportswear to Made in Oregon Old Town

2004 Norcrest China Company wholesale division closed

2006 Building is purchased by White Stag Block, LLC, managed by Venerable Group, Incorporated

2006 University of Oregon agrees to lease space

2008 The University of Oregon marks the grand opening of the facility

Source: University of Oregon, 2008

Design Facts

Architect: Fletcher Farr Ayotte Architects

Developer: Venerable Properties

Engineer: Interface Engineering

Builder: Bremik Construction

Building Size: 137,000 square feet

Construction Costs: \$37 Million

Completion: March, 2008

Anchor Tenant: University of Oregon, 18-year lease



Interior prior to renovation

Source: Venerable Properties

Major Components of Renovation

The buildings are each five story, timber-framed concrete commercial buildings that were originally designed for manufacturing and warehouse use for the Willamette Tent and Awning Company (National Register of Historic Places, 1977).

According to the National Register of Historic Places, “Beginning in 2006, the Bickel Block and two immediately adjacent buildings, the Skidmore Building and the White Stag Building, were extensively renovated and remodeled for new uses as the University of Oregon’s Portland center and as office space. The roof and parapet caps were replaced and skylights added. At the east façade, the non-historic brick façade was removed to reveal the cast iron work on the ground floor. A new cornice was added at the termination of the cast iron work, replicating one that previously existed. Existing entry doors were used as models to recreate a series of doors that once fronted on this façade. At the north façade, a new entry alcove was placed in the existing opening. Windows were inserted into the four ‘blind’ window articulations, and three new openings were created at the upper levels, continuing the first floor window pattern.” (National Register of Historic Places, 1977).

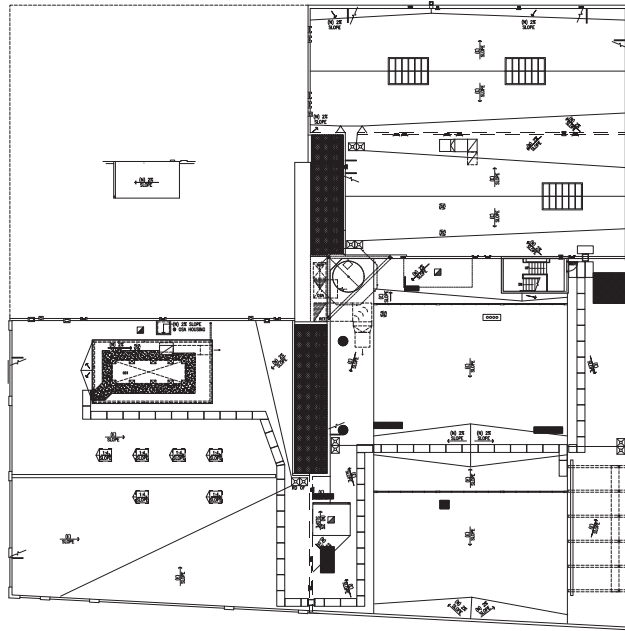
Each building’s unique character was restored in the redevelopment process. High ceilings, cast-iron columns, exposed brick walls and paint-stripped wood columns and beams highlight the buildings’ pasts. A light well at the block’s center was turned into a usable light court with a glass cover. The White Stag Building also has two original saw tooth light monitors that were restored to provide abundant natural light and add to the fifth floor’s character (Venerable Properties, 2008).



Source: University of Oregon

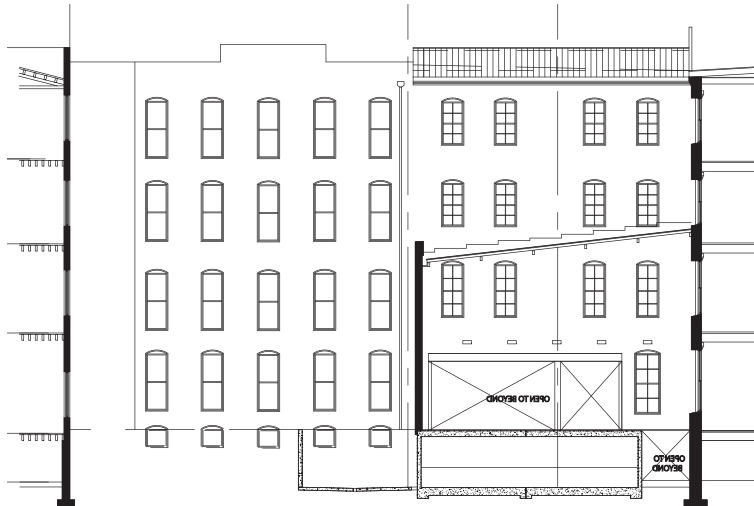
Architectural model of interior of the White Stag Block development

PLAN



Source: Fletcher Farr Ayotte Architects

SECTION



Source: Fletcher Farr Ayotte Architects

SECTION



Source: Fletcher Farr Ayotte Architects

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“Sustainable historic preservation projects such as the White Stag Block reflect the City of Portland’s commitment to the protection and restoration of its cultural and environmental resources.” - University of Oregon

Green Building Stats:

LEED Gold certified

Revitalize Old Town

Restore historic building

98% building materials reused or recycled

New materials contain recyclable content or can be recycled in the future

2 MW photovoltaic panels added to rooftop

Bike storage for 80 bikes and showers

Energy efficient windows and natural lighting

10,000 gallon stormwater retention and rainwater harvesting tank

86% reduction in municipal water demand

Rainwater flushed low-flow toilets and urinals

New electrical system to reduce demand on neighborhood grid

Hot water in limited locations

Car share program

Green housekeeping

Buy green power

Ongoing post-occupancy evaluations

Located on MAX light rail line

Source: University of Oregon, 2008

LEED Gold Certification

Within close proximity to the University of Oregon campus, redevelopment of the historic White Stag blocks provided additional school space, and helped University of Oregon to reduce the amount of resources a new building would have required. This concept of limiting resource consumption carries throughout the design process and now in implementation.

University of Oregon officials and designers met through an Eco-charette to outline project goals. These goals emphasized five key areas of sustainability in the renovation: sustainable site development; water savings; energy efficiency; materials selection; and indoor environmental quality.

These goals were achieved while also meeting historic preservation requirements. The completed LEED scorecard concluded 43 total points, earning LEED Gold certification. Points were achieved by earning all water efficiency points, increasing energy performance, diverting 98% of construction waste from landfills, increasing recycled content from 10% to 20%, and buying Green power. White Stag Block’s LEED Gold certification is based on the LEED for New Construction and Major Renovations.

To measure ongoing performance Architecture students from University of Oregon will complete post-occupancy studies that track users, lighting, temperature, and acoustics. Energy usage will be tracked by the school’s Energy Studies within the Building Lab. This information will help to refine the buildings sustainability over time.



Rainwater Catchment System Detail

Source: Fletcher Farr Ayotte Architects

Green Restoration of Historic Buildings

LEED Gold Features

a. Location

Located in Portland's Old Town, renovation of the White Stag building ensures urban retrofits that promote density and connectivity. White Stag is located within 1/2 block from other historical sites, restaurants, public transportation and several other amenities. This location also supports the transformation of the neighborhood into a vibrant urban district.

b. Transportation

Bus stops are located within four blocks, and the MAX light rail is adjacent to the building allowing for easy public access to the facilities. White Stag Block also supports car share, and has bike facilities in the basement for 80 bikes, in addition to showers for commuters or day time recreation.

c. Lighting

Addition of new windows was prohibited by historic preservation guidelines. Instead, windows were placed where previous ones had been bricked over. Damaged windows were replaced with low-emissivity windows and higher R-value that helps maintain temperatures and energy efficiency. A portion of the 4th and 5th floors was removed and replaced with a stair well that brings additional natural light further into the building and reducing the need for artificial lighting.

d. Green Housekeeping

The White Stag building owners have agreed to implement safe cleaning practices that prevent harmful chemical exposure to building users and workers, and to reduce harm to building equipment and finishes while maintaining cleanliness. Cleaning products either meet Green Seal GS-37 or the California Code of Regulations. This applies to employee's and contractors.

e. Water

Water efficiency is met through an integrated rainwater catchment system and low flow toilets and urinals. Rainwater is collected from the roofs of all three buildings through drainpipes or downspouts made of recyclable polypropylene to the basement. There the water is stored in a 10,000 gallon tank. This tank was created by walling in the building's original lightwell. Water is filtered through a UV filter, then stored in a plastic tank until it is needed in the building toilets or urinals. These toilets only use 1 pint to flush, and have dual flush options based on waste quantity. If there are insufficient water levels, municipal water can be piped in to supplement the rainwater. Overflow is filtered mechanically and with UV filters prior to discharge to Portland's municipal stormwater system. It is anticipated that this integrated catchment system will provide sufficient water capacity during the winter.

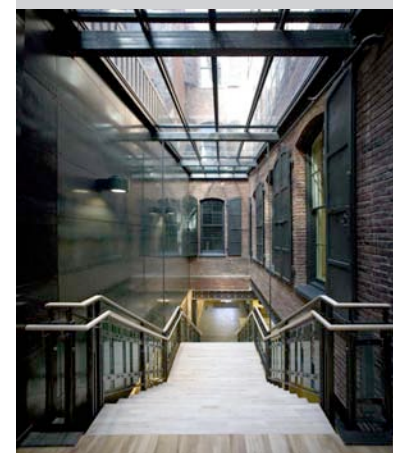
White Stag Block; Adaptive Re-use



Source: Wikipedia



Source: University of Oregon



Source: University of Oregon



Source: Sustainable Industries

“You can stuff a hybrid engine into a Hummer but it is still a Hummer. So I’d rather start out with a Prius and make it more efficient.” - Mark Heizer, Interface Engineering

LEED Gold Features (continued)

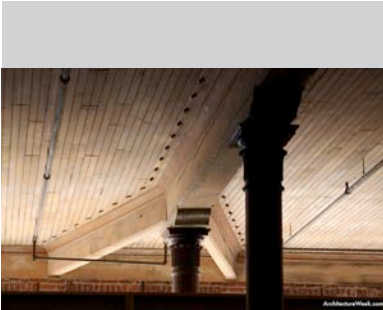
e. Materials

The White Stag Retrofit retained the building’s embodied energy (energy spent during original construction through material extraction, preparation, transportation, etc) by retrofitting the three buildings and by recycling or reusing 98% of the original materials. New materials contain recycled content and some can be recycled at the end of their lifespan. For example, the gym flooring from the University’s Eugene campus was reused in parts of the building and in the Duck Store and studio floors are made from 85% post consumer truck tires. The retrofit also used locally sourced materials, artisans and craftworkers.

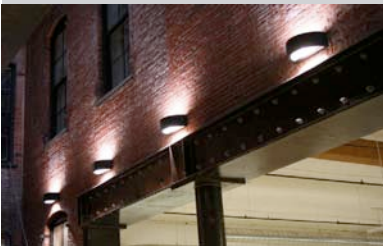
f. Energy

Incorporating natural lighting, high-efficiency lighting systems, compact fluorescent, open floorplan work spaces, and other energy efficient devices have reduced energy demand for lighting in the building. For heating and cooling high-efficiency gas boilers replace the outdated system, and all the windows were either replaced or upgraded depending on historic preservation restrictions to maintain building temperature. Hot water is also only available in limited locations. Additional energy can be drawn from 2MW photovoltaic panels on the rooftop. The design team encourages building users to be educated about energy consumption and intend to create an online “energy dashboard” to monitor electrical, photovoltaic, gas, water and steam energy usage in real time and historical use.

(Source for LEED information: University of Oregon, 2008)



Source: University of Oregon



Source: University of Oregon



Interior floor space showing historic beams and day-lighting

Source: Venerable Properties, Inc.

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Funding Mechanism

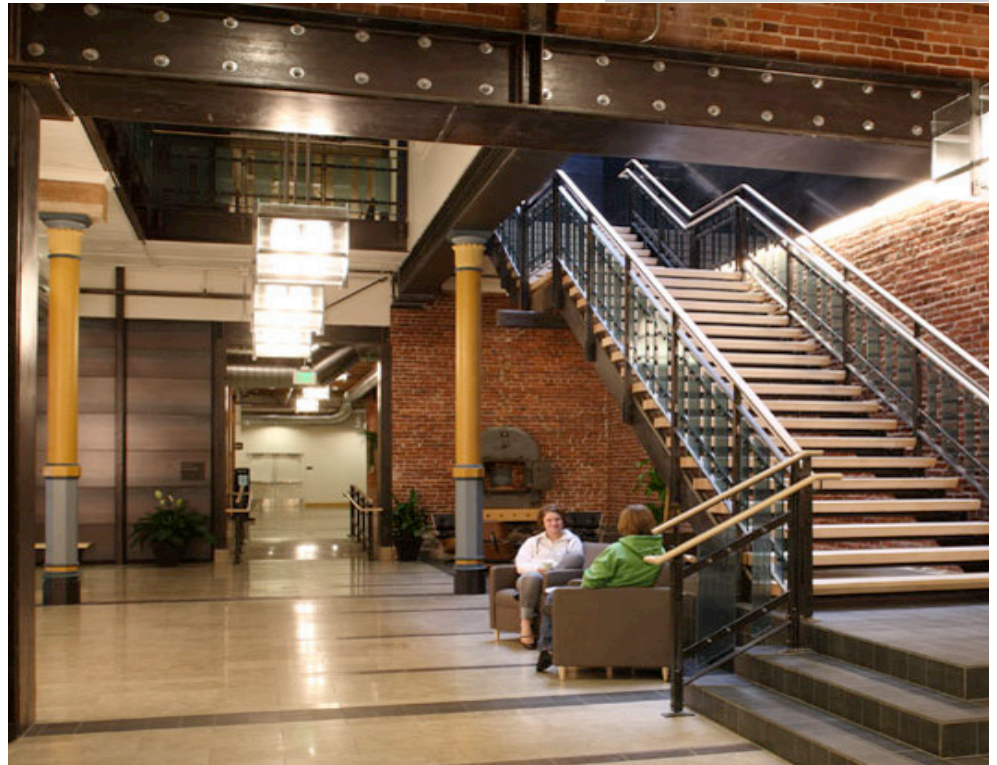
The historic nature of the project had a great impact on the manner in which the developers devised a feasible funding mechanism. According to Venerable Properties, the developer of the project, “The project’s funding was complex and challenging because the appraised value was much less than the cost to purchase and renovate the three buildings. Venerable secured New Markets Tax Credits and Historic Tax Credits to make the project pencil. The complex funding lengthened the closing and the start of the renovation.” (Venerable Properties, 2008).

According to the University of Oregon, “As a result of the property’s listed status in the National Register of Historic Places and because the owner/developer undertook a certified historic rehabilitation, the property was eligible for a 20% federal tax credit on qualifying expenditures. To maximize the benefit of these historic tax credits, Key Community Development Corporation (KCDC) was brought in as the tax credit investor. They were able to significantly enhance their pricing on the Historic Tax Credits by contributing some of their own New Markets Tax Credit allocation to the project. This resulted in an equity investment by KCDC of more than \$6,800,000.” (University of Oregon, 2008). Furthermore, “the construction financing was derived from the use of a \$19 Million allocation of New Markets Credits (NMTc) from the Portland New Markets Fund (PNMF). In addition, the Portland Development Commission also provided gap financing in the form of a \$2.5 million low-interest loan. They also provided more than \$225,000 in grant monies for storefront and lighting improvements to the buildings.” (University of Oregon, 2008).

*“White Stag Block will become one of the few buildings in the nation that is both on the National Register of Historic Places and LEED-certified”
-Buildings*



The White Box, a visual learning lab and public gallery
Source: University of Oregon School of Architecture and Allied Arts Blog



Gathering space showcases modern improvements and historic relics
Source: Sally Painter Photography

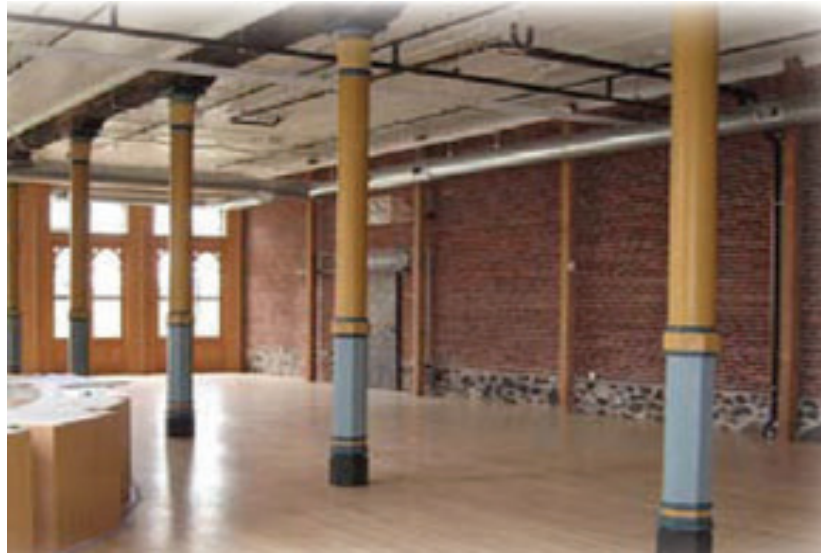
"With its striking street presence, cohesively unraveling interior spaces, and ethic of sustainability, this landmark rehabilitation has changed the face of Old Town." - Portland Spaces



Bickel Block cast iron columns
Source: University of Oregon



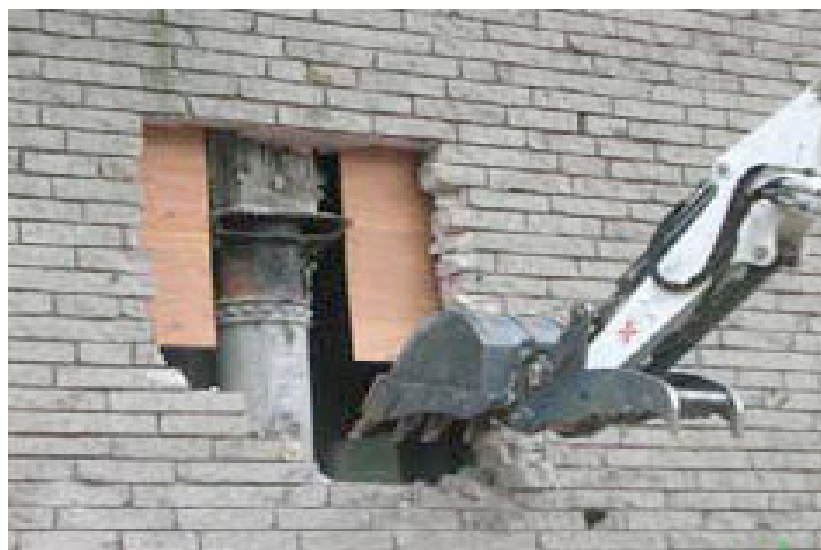
Architectural Iron Works of San Francisco cast iron from Bickel Building
Source: University of Oregon



Retrofitted interior space
Source: Venerable Properties, Inc



Recycled gym flooring and recycled truck tires in studio rooms
Source: University of Oregon



Source: Venerable Properties, Inc

Removing Wonderstone from the Bickel Block building facade to reveal the historic cast iron columns

White Stag Block; Adaptive Re-use

Lessons Learned

The key outcomes of this project as a precedent include:

- Re-utilizing and re-purposing a vacant building that revitalizes the neighborhood and reduces the impact of construction and development,
- Balancing and celebrating historic preservation and green retrofits,
- Creating community gathering space amidst private space,
- Extensive environmentally friendly building retrofits (recycling 98% building materials) and maintenance (green housekeeping),
- Ongoing evaluation of sustainability through post occupancy evaluations, and energy use monitoring,
- Rainwater harvesting and reuse,
- Adding student population to a somewhat down-trodden neighborhood to help with revitalization,
- Protected bike storage and showers for commuters,
- Creative financing is essential in adaptive re-use projects located within historic districts,
- Involving developers committed to preserving significant architecture and revitalizing a historic core in the process is essential.

Improvements

The project could have better accomplished the goal if other factors were considered:

- Front door seems misplaced, not in line with waterfront or buildings gesture,
- Natural lighting not as effective on lower floors



White Stag Sign

Source: University of Oregon



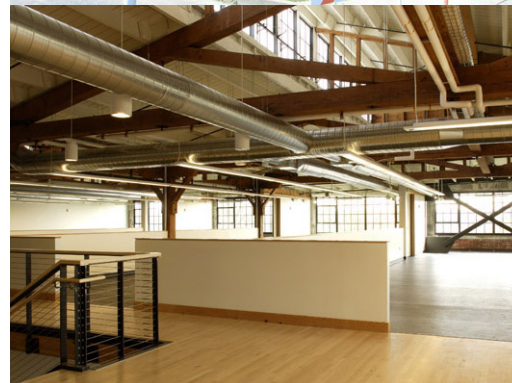
Classroom space

Source: Flickr



Cover over rainwater storage tank

Source: Flickr



Source: Venerable Properties, Inc.

Various photos documenting the pre- and post-construction of the White Stag Block buildings

Resources

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