RESOLUTION No. 37122 As Amended

Implement a comprehensive update to the City of Portland's Green Building Policy to reflect advances in green building knowledge and practices (Resolution)

WHEREAS, conventional development and construction practices deplete natural resources and cause air and water pollution, solid waste, deforestation, toxic wastes, health hazards, climate change, and other negative consequences; and

WHEREAS, buildings account for more than one-third of the nation's energy use, 30 percent of greenhouse gas emissions and waste output; and

WHEREAS, the increasing urgency of climate change, rising energy prices and a fragile economy pose serious threats to Portland's ability to thrive, now and in the future; and

WHEREAS, green building complements existing policies related to development and natural resource conservation including solid waste, recycling, and composting policies, sustainable procurement policies, the Stormwater Management Manual, 1 Percent for Green Streets, the Climate Action Plan, the Portland Plan, the Transportation Systems Plan, the Economic Development Strategy, and Metro 2040 Framework Plan; and

WHEREAS, sustainable development practices present a major economic development opportunity for Portland and Oregon; and

WHEREAS, preserving historic buildings, structures and materials is a key aspect of sustainability; and

WHEREAS, the City of Portland recognizes its responsibility to implement, continue, and promote building practices that protect human health and the quality of the air, water, and other natural resources; reduce construction practices that negatively impact native fish, vegetation, wildlife, and other ecosystems; and minimize human impact on local and worldwide ecosystems; and

WHEREAS, the United States Green Building Council has, in a national collaborative process, created the Leadership in Energy and Environmental Design (LEED) green building certification program that recognizes best-in-class building strategies and practices; and

WHEREAS, Earth Advantage is a green building certification standard and rating system for the design, construction, and operation of high-performance small commercial and multifamily buildings developed and maintained by Earth Advantage Institute; and

WHEREAS, Living Building Challenge is a green building certification program that is a pathway for regenerative design and includes imperatives in seven performance areas: site, water, energy, health, materials, equity, and beauty; and

WHEREAS, Salmon-Safe provides guidance for public agency land managers, site developers, and designers interested in developing and operating sites that demonstrate environmental stewardship by minimizing watershed impacts; and

WHEREAS, in 1999 the City Council accepted the Green Building Options Study and Green Building Initiative to develop an inter-bureau effort to implement green building standards for all City design, construction, operation, and maintenance practices; and

WHEREAS, in 2001, Resolution 35956 established the City's Green Building Policy to require all new City facilities to register and certify at the LEED Certified level and incorporate green building strategies into tenant improvement and operation and maintenance practices; and

WHEREAS, in 2005, Resolution 35956 revised the City's Green Building Policy to raise the certification level of new City facilities to LEED Gold, require ecoroof coverage on new and replacement roofs, and define inter-bureau efforts to support community-wide green building practices; and

WHEREAS, in 2009, Resolution 36700 revised the City's Green Building Policy to clarify and enhance its content to support implementation and project management; and

WHEREAS, in 2013, Resolution 37034 directed exploration of opportunities to advance bird-friendly building design and management practices into City plans, policies and programs, including the Green Building Policy for City-owned facilities; and

WHEREAS, the City of Portland has designed and/or constructed eleven LEED-registered projects and numerous green remodel, tenant improvement, ecoroof, and public infrastructure projects; and

WHEREAS, the City of Portland seeks to improve understanding and compliance with this Policy, retain its leadership in green building policy implementation, and respond to advances in the green building industry.

POLICY

NOW, THEREFORE, BE IT RESOLVED, that the City of Portland Green Building Policy is adopted with the attached Exhibits and Appendices; and

BE IT FURTHER RESOLVED that the City of Portland shall finance and staff its green building projects at a level suitable to meet the policy requirements; and

BE IT FURTHER RESOLVED that the appendices of this Resolution may be updated by the Bureau of Planning and Sustainability with consent of affected bureaus and offices; and

BE IT FURTHER RESOLVED that this resolution is binding City policy and supersedes the prior Green Building Policy (2001), 2005 update adopted by Resolution 35956, and 2009 update adopted by Resolution 36700.

Adopted by the Council: APR 22 2015

Mary Hull Caballero
Auditor of the City of Portland

By Susan Parsons

Deputy

Mayor Charlie Hales

Prepared by: Alisa Kane

Date Prepared: March 21, 2015

- 396 -

Agenda No. **RESOLUTION NO.** 37122 **As Amended**

Title

Implement a comprehensive update to the City ~~of Portland~~'s Green Building Policy to reflect advances in green building knowledge and practices (Resolution)

INTRODUCED BY Commissioner/Auditor: **Mayor Hales**	CLERK USE: DATE FILED APR 17 2015
COMMISSIONER APPROVAL	Mary Hull Caballero Auditor of the City of Portland
Mayor—Finance and Administration - Hales	
Position 1/Utilities - Fritz	By: _____ Deputy
Position 2/Works - Fish	
Position 3/Affairs - Saltzman	
Position 4/Safety - Novick	**ACTION TAKEN:**
BUREAU APPROVAL	
Bureau: BPS Bureau Head: Susan Anderson x Susan Anderson	
Prepared by: Alisa Kane Date Prepared: 2/13/15	
Impact Statement Completed ☒ Amends Budget ☐	
Portland Policy Document If "Yes" requires City Policy paragraph stated in document. Yes ☒ No ☐	
City Auditor Office Approval: required for Code Ordinances	
City Attorney Approval: required for contract, code. easement, franchise, charter, Comp Plan	
Council Meeting Date April 22, 2015	

AGENDA
TIME CERTAIN ☒ **Start time: 9:30 a.m.** **Total amount of time needed: 20 min** **(for presentation, testimony and discussion)**
CONSENT ☐
REGULAR ☐ **Total amount of time needed: _____** **(for presentation, testimony and discussion)**

FOUR-FIFTHS AGENDA	COMMISSIONERS VOTED AS FOLLOWS:	YEAS	NAYS
1. Fritz	1. Fritz	✓	
2. Fish	2. Fish	✓	
3. Saltzman	3. Saltzman	✓	
4. Novick	4. Novick	✓	
Hales	Hales	✓	

Exhibit A: Green Building Policy for City-owned Facilities

Background

Building construction, remodeling, and operation are major contributors to carbon emissions, air and water pollution, deforestation and other environmental and human health hazards. Green building practices provide design and construction strategies that mitigate these harmful consequences and conserve natural resources, improve efficiency and protect human health. Improving the performance of buildings, infrastructure and sites benefits the City and its residents. Green building saves the City money through increased operational efficiencies, supports local economic development, and strengthens established goals related to reducing carbon emissions and improving livability.

Decisions the City makes today about the design and construction of its buildings will impact the physical, environmental and social health of the community for many years to come. By using green building practices in the construction and operation of its own facilities, the City serves as a model for all development in Portland. This policy is expected to yield long-term savings by efficiently managing energy, water, waste and stormwater, and improving the health, comfort and productivity of building occupants.

Policy intent

The City of Portland will incorporate green building practices into the design, construction, remodeling and operation of all City-owned facilities. The intent of these practices is to provide environmental benefits, create local jobs, improve occupant health, enhance employee productivity and generate lifecycle financial savings for the City and its community partners.

Policy definitions, requirements and application

All City-owned projects will follow the policy requirements according to type of use, size and budget.

City-owned projects include work spaces and structures that the City designs, builds, owns, operates, maintains, or supports through loans, grants, and/or other financial benefit.

Occupied spaces are used predominantly for permanent offices, workspaces or recreation, and are heated and/or cooled for occupant comfort. Projects in occupied spaces will comply with Section 1.1. or 1.2 (relevant to their project budget and/or size) and Sections 2 through 6.

Unoccupied spaces include warehouses, parking garages, storage areas, maintenance areas and pump stations. Projects in unoccupied spaces will comply with Section 1.3 and Sections 2 through 6.

Total construction budget is the cost to achieve the project scope of work as defined in the contract documents, drawings and specifications. It includes trade permits and the 1.5 percent state requirement for solar. This cost is most often determined by a professional cost estimator or engineer.

Section 1: Environmental performance requirements for new construction and major renovations

1.1 All new, occupied City-owned buildings over 20,000 square feet and/or with a total construction budget over $5 million will:

A. Register and certify for the US Green Building Council's Leadership in Energy and Environmental Design (LEED) Building Design and Construction (BD+C) at the Gold level **and/or** achieve Living Building Challenge status.

B. Achieve 15 percent energy savings beyond the applicable Oregon Energy Efficiency Specialty Code.

C. Incorporate on-site renewable energy systems **and** meet the State of Oregon's 1.5 percent for Green Technology requirement.

D. Earn or meet LEED's advanced energy metering credit requirements to support ongoing energy monitoring and commissioning.

E. Earn or meet LEED's enhanced commissioning credits requirements.

F. Use native and/or non-invasive drought-tolerant plants, and use no potable water for irrigation, except for the first two years to establish plantings, or in cases of drought.

G. Select WaterSense-labeled products for all eligible fixtures to reduce total potable water use by at least 20 percent over the building's estimated baseline.

H. Cover the entire roof, minus skylights, mechanical systems, and fire and access routes, with an ecoroof. Exemptions to this requirement must be approved by the Commissioner-in-Charge of the bureau or office after completing the compliance check-sheet in Appendix A. Bureaus and offices are encouraged to consult with the Bureau of Environmental Services for technical assistance.

I. Incorporate stormwater management and related watershed enhancement strategies that support Salmon Safe certification during construction and after project completion.

J. Incorporate measures to reduce bird strikes and fatal light attraction, including treatment of exterior glass and glazed surfaces, lighting design, best management practices and other applicable measures as specified in Appendix B.

K. Provide or lease no more than the minimum auto parking required by code. In extraordinary circumstances, with written approval from the Bureau of Transportation, and with commitment to implement an approved Transportation Demand Management (TDM) Plan, additional on-site auto parking above code minimum may be provided. Additional auto parking shall be limited to the minimum shown in a parking demand analysis approved by the Bureau of Transportation. Extraordinary circumstances may include: visitors or employees arriving or departing a site when there is no transit service within ¼ mile of the site and there is insufficient on-street parking within ¼ mile of the site to meet projected demand. City fleet vehicle parking is exempt from this requirement.

L. Price auto parking for employees and visitors consistent with parking prices within one-quarter mile of the site.

M. Provide covered and secure bicycle parking for employees and visitors at an amount equal to the 25% mode share target in the City's Climate Action Plan unless and until replaced by mode share targets in the 2015 Transportation System Plan.

N. Pre-wire charging stations at the time of building and parking lot construction for City-owned electric vehicles where financially feasible and where vehicles will be parked on-site after the project is complete.

O. Follow construction waste prevention guidelines in Section 3.

P. Follow space allocation standards and space planning guidelines in Appendix C.

1.2 All new, occupied City-owned buildings under 20,000 square feet and/or with a total construction budget under $5 million will:

A. Register and certify for the US Green Building Council's Leadership in Energy and Environmental Design (LEED) Building Design and Construction (BD+C) at the Gold level **and/or** pursue Earth Advantage Commercial certification at the Gold level, **and/or** design, build and operate to achieve Living Building Challenge status.

B. Achieve 5 percent energy savings beyond the applicable Oregon Energy Efficiency Specialty Code.

C. Incorporate onsite renewable energy systems and/or meet the State of Oregon's 1.5 percent for Green Technology requirement.

D. Earn or meet LEED's commissioning credit requirements.

E. Use native and/or non-invasive drought-tolerant plants and use no potable water for irrigation, except for the first two years to establish plantings, or in cases of drought.

F. Select WaterSense-labeled products for all eligible fixtures to reduce potable water use.

G. Cover the entire roof, minus skylights, mechanical systems, and fire and access routes, with an ecoroof. Exemptions to this requirement must be approved by the Commissioner-in-Charge of the bureau or office after completing the compliance check-sheet in Appendix A. Bureaus and offices are encouraged to consult with the Bureau of Environmental Services for technical assistance.

H. Incorporate stormwater management and related watershed enhancement strategies that support Salmon Safe certification during construction and after project completion.

I. Incorporate measures to reduce bird strikes and fatal light attraction, including treatment of exterior glass and glazed surfaces, lighting design, best management practices, and other applicable measures as specified in Appendix B.

J. Provide or lease no more than the minimum auto parking required by code. In extraordinary circumstances, with written approval from the Bureau of Transportation, and with commitment to implement an approved Transportation Demand Management

(TDM) Plan, additional on-site auto parking above code minimum may be provided. Additional auto parking shall be limited to the minimum shown in a parking demand analysis approved by the Bureau of Transportation. Extraordinary circumstances may include: visitors or employees arriving or departing a site when there is no transit service within ¼ mile of the site and there is insufficient on-street parking within ¼ mile of the site to meet projected demand. City fleet vehicle parking is exempt from this requirement.

K. Price auto parking for employees and visitors consistent with parking prices within one-quarter mile of the site.

L. Provide covered and secure bicycle parking for employees and visitors at an amount equal to the 25% mode share target in the City's Climate Action Plan unless and until replaced by mode share targets in the 2015 Transportation System Plan.

M. Pre-wire charging stations at the time of building and parking lot construction for City-owned electric vehicles where financially feasible and where vehicles will be parked on-site after the project is complete.

N. Follow construction waste prevention guidelines in Section 3.

O. Follow space allocation standards and space planning guidelines in Appendix C.

1.3 All new, <u>unoccupied</u> City-owned structures and facilities will:

A. Select ENERGY STAR-labeled lighting and equipment to reduce energy use.

B. Incorporate on-site renewable energy systems and/or meet the State of Oregon's 1.5 percent for Green Technology requirement.

C. Use native and/or non-invasive drought-tolerant plants and use no potable water for irrigation, except for the first two years to establish plantings, or in cases of drought.

D. Select WaterSense-labeled products for all eligible fixtures to reduce potable water use.

E. Cover the entire roof, minus skylights, mechanical systems, and fire and access routes, with an ecoroof. Exemptions to this requirement must be approved by the Commissioner-in-Charge of the bureau or office after reviewing the compliance check-sheet in Appendix A. Bureaus and offices are encouraged to consult with the Bureau of Environmental Services for technical assistance.

F. Incorporate stormwater management and related watershed enhancement strategies that support Salmon Safe certification during construction and after project completion.

G. Incorporate measures to reduce bird strikes and fatal light attraction, including treatment of exterior glass and glazed surfaces, lighting design, best management practices, and other applicable measures as specified in Appendix B.

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(TDM) Plan, additional on-site auto parking above code minimum may be provided. Additional auto parking shall be limited to the minimum shown in a parking demand analysis approved by the Bureau of Transportation. Extraordinary circumstances may include: visitors or employees arriving or departing a site when there is no transit service within ¼ mile of the site and there is insufficient on-street parking within ¼ mile of the site to meet projected demand. City fleet vehicle parking is exempt from this requirement.

I. Price auto parking for employees and visitors consistent with parking prices within one-quarter mile of the site.

J. Provide covered and secure bicycle parking for employees and visitors at an amount equal to the 25% mode share target in the City's Climate Action Plan unless and until replaced by mode share targets in the 2015 Transportation System Plan.

K. Pre-wire charging stations at the time of building and parking lot construction for City-owned electric vehicles where financially feasible and where vehicles will be parked on-site after the project is complete.

L. Follow construction waste prevention guidelines in Section 3.

Section 2: Environmental performance requirements for existing buildings, tenant improvements and leased spaces.

2.1 All interior improvements to occupied, City-owned, City-leased, or leased out spaces will use the Bureau of Planning and Sustainability's guide to creating high-performance workspaces, or "Green TI Guide" **and/or** register and certify for LEED for Interior Design and Construction (ID+C) at the Silver level.

2.2 All occupied, City-owned existing buildings will register and certify for LEED for Building Operations and Maintenance (O+M) certification at the Silver level.

2.3 All bureaus and offices will use the most current version of LEED O+M to guide product and service specifications, and operations and maintenance best practices. Bureaus and offices will reference the standards or criteria in LEED O+M that support achievements in meeting related City sustainability policies and initiatives, such as sustainable procurement, energy and water efficiency, toxics use reduction, and waste reduction.

2.4 Bureaus and offices will implement Salmon-Safe recommendations, as they are developed, with the intent to become Salmon-Safe certified.

2.5 Roof replacements on all City-owned spaces will include an ecoroof to cover the entire roof, minus skylights, mechanical systems, and fire and access routes. Exemptions to this requirement must be approved by the Commissioner-in-Charge of the bureau or office after completing the compliance check-sheet in Appendix A. Bureaus and offices are encouraged to consult with the Bureau of Environmental Services for technical assistance.

2.6 Program staff and building managers will explore options to reduce hazards to birds when planning retrofits to existing City-owned buildings and facilities with practical and cost-effective solutions.

2.7 City bureaus and offices that lease out spaces in non-City owned buildings will give preference to locating in third-party certified green buildings.

2.8 Follow construction waste prevention guidelines in Section 3.

Section 3: Construction waste prevention, preservation, restoration, salvage, reuse and recycling

3.1 To meet the City's 85 percent waste diversion goal, all construction and tenant improvement projects will employ the following waste management hierarchy throughout each project:

A. Salvage and Reuse. Materials suitable for reuse will be reused on-site, transferred, sold, or donated in accordance with City Code 5.36.

B. Recycle.
   1. Where project site space allows, projects will have separated, single stream recycling for metal, unpainted scrap drywall, wood, cardboard, land-clearing debris and inert materials (asphalt, brick, concrete). Recycling containers or designated areas should be clearly labeled to indicate acceptable materials.
   2. Where project site space does not allow for separated, single stream recycling, applicable construction debris recyclables will be comingled for recycling. Comingled materials must be delivered to a Metro-authorized material recovery facility (MRF) for processing prior to disposal.

C. Landfill or Hazardous Waste Disposal. Construction waste not suitable for reuse or recycling will be landfilled or disposed of as hazardous waste according to applicable laws.

3.2 City projects considering full or partial demolition will use the following hierarchy of salvage and reuse strategies. Bureaus and offices will determine which strategy to use based on the volume and quality of the reusable and salvageable materials available from the project. Bureaus and offices are encouraged to consult with the Bureau of Planning and Sustainability for technical assistance.

A. Preservation or Relocation. As applicable, determine if it is cost-effective to adapt and preserve or relocate a structure in lieu of demolition.

B. Full Deconstruction. Fully disassemble the building for the purposes of maximizing the reuse potential of both structural and non-structural materials.

C. Hybrid Deconstruction. Combine the use of heavy machinery and manual labor for deconstruction, with the goal of maximizing the reuse and recycling potential of materials.

D. Non-Structural Salvage. Reclaim reusable non-structural components such as appliances, doors, windows, and finish materials. Follow traditional demolition practices after non-structural salvage is complete.

Section 4: Historic buildings and structures

4.1 Exterior changes to City-owned historic buildings and structures will follow City regulations for properties that are designated historic or conservation landmarks, in historic or conservation districts, or listed in Portland's Historic Resource Inventory.

4.2 For projects involving City-owned buildings over 50 years old not designated as historic or conservation resources, and that include removal, demolition, improvement, or alteration, the Historic Landmarks Commission should be consulted. The Portland Historic Landmarks Commission may be consulted via a discussion with Bureau of Development Services staff or at a regularly-scheduled Landmarks Commission meeting.

4.3 Interior changes to City-owned historic buildings and structures are not regulated by historic review. However, impact of alterations to potentially character-defining historic features and materials will be considered, and the Landmarks Commission should be consulted for advice on minimizing adverse impacts. The Portland Historic Landmarks Commission may be consulted via a discussion with Bureau of Development Services staff or at a regularly-scheduled Landmarks Commission meeting.

Section 5: Training, financing, technical assistance, reporting and policy updates

5.1 The Bureau of Planning and Sustainability, with assistance from Procurement Services and other bureaus and offices, will identify green building training opportunities for project managers, operations and maintenance staff. All appropriate project managers, maintenance and operations staff will pursue green building training.

5.2 The City will pursue federal, state or local incentives to facilitate the implementation of the Green Building Policy when appropriate.

5.3 Project managers will seek technical assistance and resources from bureaus and offices with expertise in corresponding areas.

5.4 The Bureau of Planning and Sustainability will provide assistance to help all City bureaus and offices meet the requirements of this policy.

5.5 The Bureau of Planning and Sustainability will convene bureaus and offices to create and maintain a Citywide Policy Implementation Guide.

5.6 The Bureau of Planning and Sustainability will track policy implementation annually and will update the Green Building Policy every four years or as needed. Progress updates will be included in Sustainable City Government reports.

5.7 The Office of Management and Finance's Facilities Services will convene bureaus to share operations and maintenance best practices that support implementation of this policy.

Section 6: Exemptions

6.1 Each bureau and office is responsible for incorporating this Green Building Policy into its projects, capital improvements, operations and maintenance, purchasing practices, and staff training. Projects that cannot meet the policy requirements due to size, function, or building and zoning regulations may request exemptions from the bureau or office's Commissioner-In-Charge, but will incorporate green building measures to the maximum extent possible.

Appendix A — Ecoroof Information and Exemption Checksheet

Background

Ecoroofs are living, breathing, vegetated roof systems that provide a sustainable alternative to conventional roofing. They are part of a growing worldwide effort to promote sustainable development and reduce the negative impacts from buildings on air, water, energy and the earth. Ecoroofs are used extensively in other countries, especially in Europe. Even though they are a relatively new approach to roofing in the U.S., they are catching on. Green Roofs for Healthy Cities estimates that in 2012 alone, more than 20 million square feet of ecoroof were constructed in the U.S. As of August 2014, there are 436 ecoroofs in Portland covering nearly one million square feet of rooftop and managing close to 23 million gallons of stormwater per year.

Benefits

Ecoroofs provide a variety of environmental and human health benefits including:

- Reducing stormwater runoff peak flow and alleviating local stream flooding.
- Reducing impacts on aging and undersized sewer infrastructure.
- Reducing stormwater runoff temperature and pollutant loads.
- Extending the life of a roof to 40 years versus 20 years.
- Helping to cool urban areas.
- Insulating buildings and saving energy and money.
- Capturing and holding carbon and improving air quality.
- Providing habitat for insects and birds.
- Providing area for greenspaces, therapeutic gardens and roof top agriculture.
- Incorporating aesthetic features, art and nature.
- Creating new jobs and supporting local industry.
- Qualifying for LEED credits.
- Qualifying for stormwater fee discount.
- Qualifying for Portland Floor Area Ratio (FAR) bonus.

Stormwater Management Manual Compliance

The Stormwater Management Manual (SWMM) requires new development to retain stormwater on-site as much as possible. An ecoroof is considered an impervious surface reduction approach. For new construction, an ecoroof that covers the entire structure means the project meets the SWMM and no further stormwater facility sizing calculations or other design considerations are needed.

Costs and Benefits

When comparing the cost of an ecoroof to the cost of a conventional roof or an ENERGY STAR roof, you must determine the cost of the "green" portion of the roof. This portion includes a drainage layer, growing media and vegetation. Ecoroofs can cost more initially, but they can save money over the life of the roof. A cost/benefit analysis conducted by ECONorthwest for the Bureau of Environmental Service concluded that an ecoroof on a publically-owned structure begins to save money immediately. At year 20, the cost of the ecoroof breaks even. The Cost/Benefit Report is viewable at https://www.portlandoregon.gov/bes/article/261053.

Another study, conducted by ARUP for the United States General Accounting Office, found ecoroofs pay back in 6.2 years. The study is available at http://www.gsa.gov/portal/mediaId/158783/fileName/The_Benefits_and_Challenges_of_Green_Roofs_on_Public_and_Commercial_Buildings.action.

Sometimes a building will require structural upgrades to be able to hold the added weight of an ecoroof. The structural upgrade may not be prohibitively expensive. For example, a new, five-story wood frame apartment building in the Pearl District was redesigned to have an ecoroof with an added structural cost of only $1.60 per square foot of roof area.

Structural Capacity
For re-roofing existing facilities, the range of structural improvements have varied widely. For example, no structural upgrades were required for the Portland Building ecoroof. Other existing buildings may require extensive structural upgrades, resulting in a prohibitively expensive ecoroof. You most likely will have to hire a qualified professional to get structural information about a building. This expertise is often required for seismic and other permit-related issues.

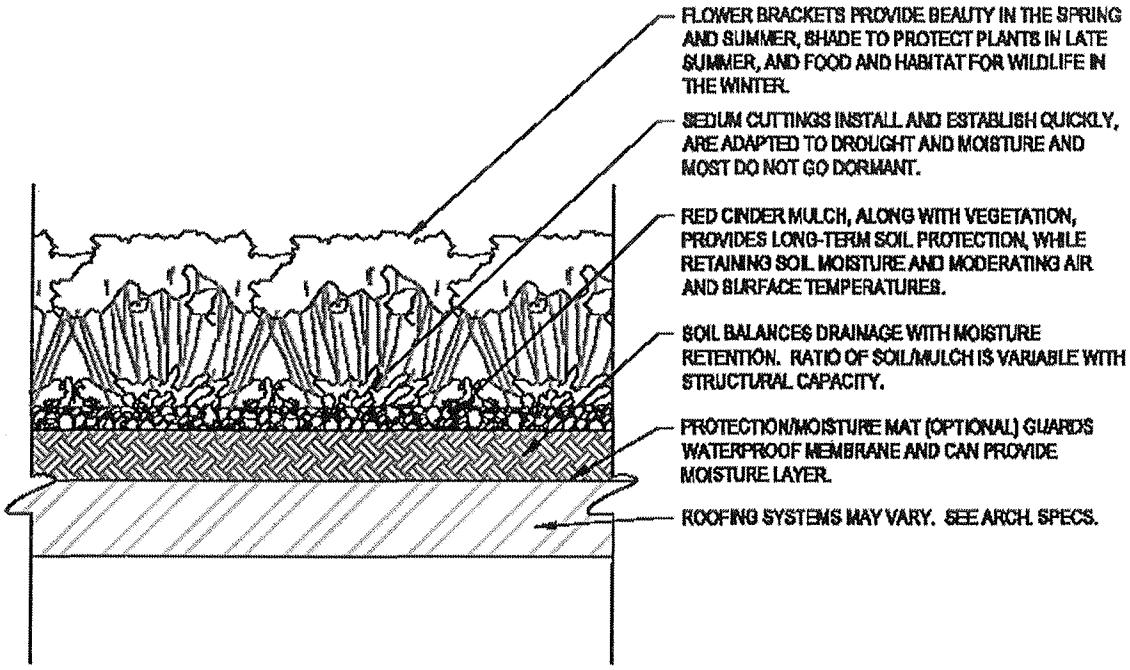
The Office of Management and Finance (OMF) prepared a report on several buildings evaluated for ecoroofs. View the document at http://www.portlandoregon.gov/bes/index.cfm?&a=287490

Maintenance
All roofs require maintenance. Ecoroofs need to be checked for trees and excess weeds in early summer. Depending on the design and plant material, an ecoroof may require irrigation for the first few years as the vegetation gets established. Proper design and operation of an ecoroof can minimize weeds. A maintenance plan will describe the routine maintenance that is needed to keep the ecoroof in excellent condition.

Design
It is best to design a new building that can hold the additional weight of an ecoroof. Even if an alternate roofing material is used initially, design and construct the building to hold an ecoroof since a building can easily be retrofitted with an ecoroof in the future.

If the facility has formal historic designation, then the Historic Landmarks Commission and/or design review may be required. Working on a designated historic building does not preclude using an ecoroof. If it is not desirable to see the ecoroof on an historic building, then it can be designed with low-growing vegetation that will not be visible from ground level.

Red Cinder Design
The Bureau of Environmental Services (BES) developed a design for a low-cost, low-maintenance ecoroof that requires little or no irrigation. This design uses red cinder rock as mulch to retain moisture in the soil during hot summer months and to suppress weed growth. Three of BES' pump stations have a red cinder ecoroof. These roofs have never been irrigated, and minimal weed pulling is the only maintenance that has been done. The design guidelines are online at https://www.portlandoregon.gov/bes/article/464519.



Typical Cross Section of BES Red Cinder Ecoroof

Technical Assistance

Many resources related to ecoroofs exist. Check the BES ecoroof web page at www.portlandoregon.gov/ecoroof for technical information and manuals, instructional videos, links to local and national research programs, websites, educational tools, and events. BES staff is available to help with your ecoroof project. Contact Amy Chomowicz at 3-5323, or amy.chomowicz@portlandoregon.gov.

Ecoroof Exemption Checksheet
The project manager must complete and sign this checksheet before designs are finalized to meet the intent of Green Building Policy. Please send a copy of this form to: BES Sustainable Stormwater Program 106/1000.

Project Name: _____

Site Address: _____

Project Manager name/title (City bureau/office): _____

Project architect of record (firm): _____

Section I. Project Elements

Building type (e.g. commercial, industrial, warehouse, pump station, residential)

Building area: _____

Ecoroof area: _____

Roof slope: _____

Is the ecoroof visible from the street? Yes ___ No ___

Are you using the red cinder design? Yes ___ No ___

Brief description of the project and/or the ecoroof:

_____

_____

For existing structures

Can the existing structure hold additional weight? If yes, how much? _____

If the building needs to be upgraded to hold additional weight, what is the cost of the upgrade?

_____

Section II.
Please complete the following section to determine if your project is exempt from having an ecoroof.

New construction:

- ☐ Project roof is less than 500 sf
- ☐ The project is single family residential, or, if multi-family, has fewer than 4 units
- ☐ The roof slope is greater than a 5 x 12 pitch (22 degrees)

For existing structures:

- ☐ Project roof is less than 500 sf
- ☐ The project is single family residential, or, if multi-family, has fewer than 4 units
- ☐ The roof slope is more than a 5 x 12 pitch (22 degrees)
- ☐ The existing structure cannot hold additional weight, and/or the cost of structural upgrades is excessive

If one or more boxes in Section II are checked, then the project is encouraged, but not required, to have an ecoroof. If requesting an exemption, have the bureau or office director and Commissioner in Charge sign here:

Signatures:

Bureau/Office Director	Date
Commissioner in Charge	Date

Appendix B — Bird-friendly Building Design and Management Practices Checksheet

Background

Portland sits on the Pacific Flyway, a major north-south flight route extending from Alaska to South America. The City is home or a critical stopping point for more than 200 species of birds. Many of these bird species are in decline due to multiple risk factors. Structural hazards are a primary threat to both resident and migratory birds, ranked second as a mortality factor after habitat destruction. It is estimated that between about 500 million to 900 million birds die each year from window strikes in the United States alone. The Audubon Society of Portland has conducted studies documenting that bird collisions kill a diverse array of bird species in the city, including species in decline.

In 2003 the U.S. Fish and Wildlife Service selected the City of Portland as a pilot project city for the Urban Conservation Treaty for Migratory Birds Program, which included a focus on reducing hazards to migratory birds. Portland has since developed a Bird Agenda that recommends mitigation efforts, including bird-friendly building guidelines. In partnership with Audubon, the U.S. Fish and Wildlife Service and the American Bird Conservancy, the City has sponsored the development of Resource Guide for Bird-Friendly Building Design for Portland. The Resource Guide includes extensive recommendations to reduce the risk of bird mortality from collisions with buildings and fatal light attraction. It also notes that there are opportunities to increase energy efficiency and help meet LEED certification requirements by incorporating bird-friendly design approaches. And the Resource Guide provides information about other cities, including Chicago, San Francisco, Toronto and New York, which have adopted regulatory and/or voluntary bird-friendly building guidelines and Lights Out programs.

In October 2013 the City Council adopted Resolution 37034 directing City bureaus and offices to explore opportunities to integrate Bird-Friendly Building Design into the City policies, plans, and programs, including updates to Portland's Comprehensive Plan, Central City Plan, and the City's Green Building Policy.

Goals of the policy include:

1. Reduce bird collisions with buildings and other structures, and avoid construction-related impacts on nesting birds.

2. Carry out City Council direction to advance bird-friendly building design and building management practices through City plans and policies, including the Green Building Policy (Resolution 37034, October 2, 2013).

3. Demonstrate leadership and join other progressive cities in adopting bird-friendly design guidelines.

4. Apply the principles and tools of the Resource Guide for Bird-friendly Building Design, Portland Oregon, First Edition, July 2012, and Guidance: Avoiding Impacts on Nesting Birds during Construction and Revegetation Projects, Version 2 October 2010, to City sponsored projects.

5. Build awareness of bird collision risks and options to reduce them, as well as ways to avoid liability under the Migratory Bird Treaty Act.

6. Support market development for bird-friendly building and lighting materials.

The Bird-Friendly Building Design Checksheet is intended to:

- Reflect accepted tools and practices to reduce risks of bird collision.
- Be clear and simple to implement.
- Be relevant and applicable to the project scale, design, location and feature-specific hazards.
- Provide opportunities to meet multiple project-related requirements and design/performance objectives (e.g., energy efficiency).
- Support other City goals.

The project manager and project architect of record must complete and sign this checksheet to meet the intent of Green Building Policy. Completed checksheets must be retained in the project file.

Project name: _____

Site address: _____

Project manager name/City bureau/office: _____

Project architect of record (firm): _____

Applicability
Please complete sections I and II below to determine if the bird-friendly building design measures outlined in the remainder of the checksheet are required for your project.

I. Project scale and key project elements. (check all that apply)

- ☐ The project includes one or more structures with a footprint of more than 500 square feet
- ☐ The project includes one or more monopole structure
- ☐ The project includes one or more wind energy facilities

NOTE: If NO boxes in section I are checked, the measures outlined in this appendix are encouraged but are not required to meet the policy. You may sign the checksheet at the end of Appendix B.

II. **LEED Pilot Credit 55.** Projects qualifying for the LEED Pilot Credit 55: Bird Collision Deterrence meet the policy.

If this project will qualify for LEED Pilot Credit 55, please check the box below and sign the checksheet at the end of Appendix B with LEED Pilot Credit 55 documentation.

- ☐ This project is being designed to qualify for the LEED Pilot Credit 55, Bird Collision Deterrence.

Bird-friendly Building Design and Management Practices – Checksheet

Required measures

A. **Window Treatments** (check at least one box as instructed below)
This section applies to projects with at least 10 percent exterior glass, sky-bridges or atriums with exterior glazing, or glass railings.

To reduce reflectivity and make exterior glass visible to birds, apply at least one of the following treatments to at least 90 percent of new windows or other exterior glass i) between the ground and 60 feet above the ground, and ii) for one story above a vegetated roof. This section is not required for single family residential homes. For non-single family residential projects with less than 50 percent exterior glass this section applies only to exterior glass on the ground floor and to the first story above a vegetated roof.

If project does not meet these criteria write NA here ___

- ☐ Non reflective, opaque or translucent glass
- ☐ Glass that reflects ultraviolet light (which birds can see), such as Ornilux.
- ☐ Glass that has photovoltaic cells embedded, such as IQ Glass or Voltalux.
- ☐ Application of patterns (e.g., dots, stripes, images, abstract patterns) to exterior (first outside facing) glass surfaces. Patterns may be etched, fritted or in films. Spaces between pattern elements must be no more than two inches horizontally and four inches vertically, or both, i.e. patterns must conform to the "two by four" rule.
- ☐ External screens, decorative grills, screens, netting, louvers, shutters or exterior shades placed as close to the outside glass surfaces as possible, with openings that meet the "two by four" rule.

B. **Reducing Light Attractants** (all measures apply unless not applicable — check each box or write NA on the box)

- ☐ Minimize exterior lighting.
- ☐ No up-lighting or light beams.
- ☐ Install full cut off, shielded, or directional lighting to minimize light spillage, glare, or light trespass.
- ☐ Install time switch control devices, occupancy sensors, or non-emergency interior lights that can be programmed to turn off during non-work hours or otherwise designated hours.

C. **Use best available science to select light intensity, color, and flash frequencies that reduce bird hazard if complying with federal aviation safety requirements.**
If applicable, describe: _____

Additions or exterior alterations to existing development, may comply with section A. or B. above by retrofitting existing windows or light fixtures if to do so will more effectively reduce hazards to birds. If retrofit is selected, describe proposal and rationale here:

D. **Additional measures** (check the box on each line or write NA on the box)

- ☐ Mirrored glass, exterior mirrors or mirroring materials are not allowed in building or landscape design.
- ☐ Minimize the number and co-locate rooftop antennas and other rooftop structures.
- ☐ Wind generators must appear solid when in motion.
- ☐ Tower structures must not include guy wires.
- ☐ Bird attractants (exterior/interior landscaped areas, vegetated roofs, water features) may not be placed where they could be reflected in, or be viewed through, exterior glass unless the glass incorporates bird-friendly treatments (see Section A above).

E. **Avoid adversely affecting nesting birds** (required per federal Migratory Bird Treaty Act) (check the box)

- ☐ Schedule timing construction-related activities (e.g., vegetation removal, site preparation, demolition) and other steps as suggested in the BES Terrestrial Ecology Enhancement Strategy Guidance.

Description (optional):

Best Management Practices (optional and encouraged – check all that apply)
The following BMPs are intended to promote bird safety through construction practices and building operation/site and management.

- ☐ Extinguish nighttime non-security architectural illumination treatments during the spring (February 15 to May 31) and fall (August 15 to November 30) bird migration periods.
- ☐ Distribute educational materials on bird-friendly practices to building managers and occupants.
- ☐ Install interior blinds, shades or other window coverings in windows with clear glass on the ground floor, visible from the exterior, as part of the construction project contract, lease agreement or CC&Rs.
- ☐ Install exterior screens on windows that open in residential projects.
- ☐ Request employees to turn off task lighting at work stations and draw office window coverings at end of the day.
- ☐ Schedule maintenance activities to occur during the day, or conclude before 11 p.m. if possible, and avoid maintenance activities that could cause disturbance during nesting seasons.

Authorized Signatures for Appendix B - Bird-friendly Building Design and Management Practices Checksheet

The signed and dated checksheet must be kept on record in the project file.

Project manager

_____

Print name and City bureau/office

_____

Project manager signature date

Project architect of record

_____

Print name and firm

_____

Project manager signature date

Appendix C — Space Allocation Standards and Space Planning Guidelines

Space Allocation Standards

Space Allocation Standards are a tool to assist the City in making better decisions about effective and efficient planning of their office needs. These guidelines support the implementation of green building strategies used by third-party certifications such as LEED and Earth Advantage. These standards aim to use space more efficiently – saving costs, reducing energy and allowing for material reuse. The standards also promote indoor environmental health by improving ventilation and retaining access to views and daylight. These standards are designed to help develop a flexible work environment that is able to respond to change, meet the needs of employees and the public, enhance communication, and improve efficiency and productivity.

There is supportable evidence that the implementation of proposed space allocation standards, based on industry best practices for both private and government organizations, can provide the City sufficient office space for the next five years in City-owned buildings.

The proposed allocation standards do not change in size from the existing standards, but further definition is provided to assist in consistent implementation. In addition, guidelines for space planning are also provided.

Workstation type	Dimensions	Total square footage	Notes
Private Office – Director	20x12	240 sf	
Private Office – Manager	10x12	120 sf	
Open Workstation – Standard	8x8	64 sf	
Open Workstation – Large	8x10	80 sf	For supervisors and managers
Open Workstation – Small	6x6	36 sf	Configured for inspectors, interns, and other "fly-in" uses
Conference Room – Director (dedicated)	Varies	Greater than 240 sf	
X-Large Conference (shared)	28-40 person	Varies	
Large Conference Room	20-24 person	Greater than 240 sf	
Medium Conference Room	12-16 person	240 sf	
Small Conference Room	4-6 person	120 sf	

The space allocation workspace standards should be considered a maximum space allowance.

Space Planning Guidelines

General

- Limit full height walls; provide open flexible areas for efficiency.
- Private offices, Storage, Copy Rooms, Lactation Rooms, Equipment Rooms, Training Rooms, Interview Rooms, and other rooms with full-height walls are located in the building center or core.
- Modular sizes allow future flexibility – private offices and conference/support spaces are interchangeable over time.
- **Lunchroom/Breakroom** – provide one lunchroom for each floor of office space.
- **Lactation Room** – provide one lactation room for each Bureau and or one for every two floors (preferably for each floor of office space).
- **Copy Room(s)** – provide enclosed ventilated room in the building core on each office floor.
- **Special Program Requirements** – consider best location; group similar functions as possible (Locker Rooms, Showers, Exercise Rooms); full-height walls are located in the building center or core.

Private Offices

- Director Office – located at building core; dedicated Bureau Conference Room – located adjacent to Director Office at building core.
- Manager Office - located at the building core; private office provided for managers who are responsible for work of a sensitive nature on a daily basis including personnel, legal and other confidential issues.

Open Office Areas

- When possible, locate filing/equipment adjacent to building core.
- Standard open office workstation design is based on 8'x8' module.
- 8'x8' module can accommodate a number of different workstation layouts for both focused individual workspaces and open collaborative workspace.
- 8'x8' modules can be arranged in groups of 4, 6, and 8 for best circulation.
- Workstation groups are planned so that views to the exterior are possible from main circulation aisles for all; secondary circulation is 90 degrees to the exterior walls.
- Open office workstations are located in open areas with access to exterior windows.
- Workstations must be planned to allow 3' minimum circulation space along the exterior window walls.
- Panel heights to be no higher than 54". If higher panels are needed, consider sections above 54" to be transparent/translucent.

Implementation

Office of Management and Finance Facilities Services is tasked with overseeing the implementation of a Space Master Plan. It is their responsibility to attempt to achieve a balance between agency program needs, and efficient effective design solutions. Further, it is their responsibility to promote equity between bureaus in the utilization and quality of space.

Standards do not entitle employees to specific workstation sizes but rather it is a method for determining the overall requirements of a group and for determining how the space should be allocated. Actual individual workspace allocations are based on functional space requirements, the priorities of the organization and the total space within the budget which is available.

Exceptions

These proposed Office Space Standards are guidelines, and it is recognized that there will be exceptions, and that there will be specific program requirements which are not addressed in the standards.

To request exceptions from the Space Allocation Standards, the organization should document the requirements for space in excess of the standard using specific Bureau mission requirements. Benchmarking with other organizations performing similar functions to ensure the allocation of space requested is encouraged.

Requests for exceptions should first be reviewed and approved by the affected Manager or Director, and then should be submitted in writing to Facilities Services. Facilities Services will review the request in light of the overall City Space Master Plan.