



**weho**

**green**

**building**

**manual**

City of  
**WEST HOLLYWOOD**

# the **WEST HOLLYWOOD** GREEN BUILDING MANUAL



Mayor Abbe Land



Mayor Pro Tempore  
John Heilman



Councilmember  
John J. Duran



Councilmember  
Sal Guarriello  
*In Memoriam*



Councilmember  
Jeffrey Prang

**In keeping with the City's core values of environmental responsibility,** West Hollywood adopted a Green Building Ordinance to protect the environment and promote sustainable development. Green Building is part of the greater idea of sustainable living. California, like many growing states, faces incredible population growth in the years to come – increasing the demand for resources. As West Hollywood prepares for the future, evaluating current energy use and finding room for reduction is essential to a healthy environment and economy. Green Building is not about a particular aesthetic or style, but is based on the simple concept of reducing waste and using resources efficiently. Hence, the City has instituted one of the nation's first mandatory green building programs.





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# THE WEST HOLLYWOOD GREEN BUILDING STORY: a timeline

## 2001

West Hollywood completed the Strategic Vision 2020 document that summarizes the City's core values and strategic programs. "Responsibility for the Environment" was identified by the community as a core value of the City.

## 2003

West Hollywood completed the General Plan Update Framework project, a project to identify priority issues for updating the City's General Plan. The General Plan is the document that guides the City in managing its physical, human, and economic resources. As part of the Framework project, the City sponsored an educational forum and a public festival for community input. The public festival asked residents and business representatives to articulate what policies the updated General Plan should include. The results included:

- **74%** of the respondents thought it would be appropriate to give incentives, such as increased density and building height, for developments that incorporate green building practices.
- **91%** of the respondents believed that the City should incorporate green building techniques into its own capital improvement programs and operations in order to minimize the consumption of natural resources and reduce pollution.

## 2005

The City Council directed staff to explore strategies for a Green Building Program with the community. City staff solicited the assistance of a Green Ribbon Committee consisting of architects, construction material suppliers, contractors, landscape architects, residents, and property owners. The group recommended that the Green Building Program address public and private development, and the unique challenges and opportunities of building in West Hollywood. The group also emphasized the need for flexibility and choice in the program, as well as sensitivity to cost impacts.

## 2006

The City Council directed staff to pursue a Green Building Program that was based on a flexible point system and mandatory minimum requirements, after consideration of a number of different program structures and approaches. City staff worked with Global Green USA and the Green Ribbon Committee to develop the final Green Building Point System, thresholds for the Point System, and the minimum mandatory green building project requirements.

## 2007

With the support of the community and the leadership of the City Council, the City of West Hollywood adopted a mandatory Green Building Program in June 2007. The program requires that all projects incorporate techniques to reduce energy use, increase health and use resources efficiently.

# MISSION



In keeping with the City's core values of environmental responsibility, West Hollywood adopted a Green Building Ordinance to protect the environment and promote sustainable development. Green Building is part of the greater idea of sustainable living. California, like many growing states, faces incredible population growth in the years to come – increasing the demand for resources. As West Hollywood prepares for the future, evaluating current energy use and finding room for reduction is essential to a healthy environment and economy. Green Building is not about a particular aesthetic or style, but is based on the simple concept of reducing waste and using resources efficiently. Hence, the City has instituted one of the nation's first mandatory green building programs. While mandatory, the program's unique flexibility reduces construction and design barriers to ensure that all building typologies, sizes, and structures benefit from, rather than struggle with green building.

## West Hollywood's Green Building Program was designed with the following considerations:

- Tailored to Opportunities and Constraints Specific to West Hollywood
- Reflects Community Input and Community Goals for Environmental Protection
- Allows Many Design Solutions, and Is Flexible Throughout the Design Development Process and Allows Designers to Select the Most Appropriate and Cost-conscious Solutions
- No Additional Fees or Hearings
- Encourages Innovation and Allows for the Point System to Accommodate Changing Technology
- Program Is Broad Enough to Be Used for Commercial, Mixed-use and Residential Development
- All Points Can Be Verified by Staff, No Additional Consulting Services Needed
- No Additional Studies or Performance Calculations Required to Be Submitted
- Projects Registered to Obtain Leed Certification Are Exempt from the Program

## GREEN BUILDING PROGRAM ELEMENTS

The following describes the program's key elements. Each is described in more detail in this manual.

- LEED Certification is required for new public buildings.
- A Green Building Section was created in the Zoning Ordinance: Section 19.20.060. This section describes the program requirements.
- Minimum Green Building requirements for all projects, including new construction, tenant improvements, remodeling and additions, are described in Section 19.20.060 (The green building requirements in existence prior to adoption of the Green Building Program were consolidated into this section by reference.)
- All applications for projects proposing three (3) or more residential units, and all applications for new commercial buildings (including mixed-use projects) must comply with the Green Building Point System. A minimum of 60 points is required. A total of 160 points are available. Projects that reach 90 points are eligible for one of the possible incentives. A Green Features manual is required at end of construction to inform future tenants of green features.
- A Green Building Resource Center in City Hall
- This Green Building Program Manual, and educational brochures (kitchen/bath, landscape, tenant improvements, etc.)

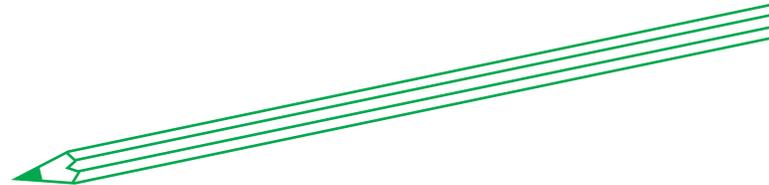
The chart below outlines the Green Building requirements for a variety of project types.

PROJECT TYPE	MINIMUM GREEN BUILDING REQUIREMENTS	GREEN BUILDING POINT SYSTEM
newly constructed or remodeled single family home	yes	no
newly constructed or remodeled condo (less than 3 units)	yes	no
newly construction multifamily unit building (3 or more units)	yes	yes
remodeled multifamily unit	yes	no
new commercial building	yes	yes
new commercial building	yes	no
new mixed-use building	yes	yes
remodeled mixed-use building	yes	no
LEED certified building (residential and/or commercial)	yes	no

## HOW to USE THIS MANUAL

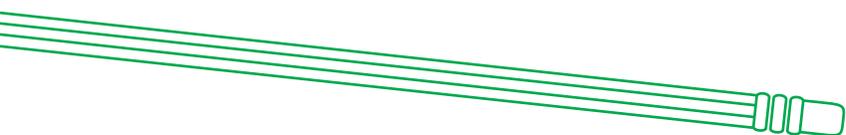
This manual describes how applicants for planning and building permits for construction projects can comply with the City’s Green Building Program. **The manual provides:**

- Detailed Description of the Program Components
- Recommendations for Implementing Green Design Features
- The Process for Review of Green Building Requirements
- Required Forms for Submittal With Permits
- A Glossary of Key Terms
- Educational Resources for Further Guidance and Information



## WHO SHOULD USE THIS MANUAL?

All applicants for planning and building permits for projects in West Hollywood should use this manual. This manual is particularly helpful for projects that are required to use the Green Building Point System, however the manual also captures the 18 items that are required for all projects and details applicability and implementation of these requirements.



# MINIMUM GREEN BUILDING REQUIREMENTS

## for ALL PROJECTS

This section describes the minimum green building requirements for all projects contained in the Municipal Code in Section 19.20.060. It describes what documentation is needed to demonstrate compliance with the Green Building Program, as well as what sections of the municipal code apply to their implementation.

The following language was adopted into Section 19.20.060 of the Municipal Code:

**A. Green Building General Requirements.** All new development, remodels, and tenant improvements shall comply with the following requirements of the West Hollywood Municipal Code, as applicable. Where this section references another portion of the Municipal Code, the applicability provisions of that section shall be used to determine applicability.

**1. Construction and Demolition Waste.** Projects shall divert a minimum of 80% of all construction and demolition waste away from landfills in accordance with the standards set by the Department of Public Works.

**2. Storm Drains.** Storm drains in the public right-of-way adjacent to the project site shall be labeled in accordance with the standards set by the Department of Public Works.

**3. Future Photovoltaic.** Projects shall provide a roof layout plan that illustrates how future installation of a photovoltaic system could be accommodated. Projects shall install a conduit from the roof to the electrical room, or electrical panels if no electrical room is provided, to accommodate future photovoltaic system installation. Tenant improvements are exempt from this requirement.

**4. Construction Air Quality Management Plan.** Projects shall provide a construction air quality management plan on the construction drawings that, at a minimum, includes protecting ducts during construction and changing the filters and vacuuming ducts prior to occupancy.

**5. Interior Paints and Wood Finishes.** Projects shall use interior paints and wood finishes with low volatile organic compound levels that do not exceed 50 grams per liter flat, or 150 grams per liter non-flat. This shall be noted on the approved plans.

**6. Energy Star Appliances.** Appliances provided in residential and mixed-use projects, and commercial projects as appropriate, shall be Energy Star qualified appliances.

**7. Permeable Surfaces.** Projects shall comply with all applicable requirements in Section 19.20.190 (Storm Drainage and Storm Water Runoff) and Section 19.36.280.B.5 (Front Yard Paving).

**8. Water Conservation.** Projects shall comply with all applicable requirements in Section 19.26.060 (Plant Materials), Section 19.26.070 (Irrigation and Water Conservation), and Chapter 15.52 (Water Conservation Plan).

**9. Storm Water Diversion.** Projects shall comply with all the applicable requirements in Section 19.20.190 (Storm Drainage and Storm Water Runoff) and in Chapter 15.56 (Storm Water and Urban Runoff Pollution Control).

- 10. Alternative Transportation.** Projects shall comply with all applicable requirements in Section 19.28.150 (Bicycle Parking and Support Facilities).
- 11. Water Saving Features.** Projects shall comply with applicable requirements for utilizing low-flow showerheads, faucets and water closets as adopted by Section 13.12.030(i) and (j).
- 12. Recyclable Materials Storage.** Projects shall comply with all applicable requirements in Section 19.20.180 (Solid Waste and Recyclable Materials Storage) and Section 19.36.280(B)(10) (Solid Waste Recycling).
- 13. Energy Efficient Outdoor Lighting.** Projects shall comply with all applicable requirements in Section 19.20.100(A)(3) (Outdoor Lighting).
- 14. Parking Landscaping for Surface Parking Areas.** Projects shall comply with all applicable requirements in Section 19.28.100(B) (Parking Area Landscaping Requirements).
- 15. Transportation Demand Management.** Projects shall comply with all applicable provisions of Chapter 10.16 (Transportation Demand Management).
- 16. Construction Debris Control.** Projects shall comply with all applicable requirements in Section 13.04.040 (Construction Debris Control).
- 17. Indoor Air Quality Management Plan.** Projects shall comply with all applicable requirements in Chapter 15 (Environmental Protection, Pollution, and Solid Waste).
- 18. Energy Efficiency.** Projects shall comply with all applicable provisions of the most recent editions of the Title 24 Energy Efficiency Standards, and most recent editions of the West Hollywood Building, Electrical, Mechanical and Plumbing Codes.

# Submittal Requirements

## 1. Divert construction and demolition waste.

**Applies to:** Any Projects That Generate Construction Debris, Including Tenant Improvements

**Applicants must use** City-approved haulers to remove construction debris. Projects divert a minimum of 80% of all construction and demolition waste away from landfills in accordance with the standards set by the Department of Public Works. Contact the Environmental Services Coordinator at 323-848-6499 for more information. (See [weho.org/environment](http://weho.org/environment) and click on Construction and Development Information for a list of City approved haulers).

**Submittal:** Submit plan for approval by Environmental Services.

**See:** Applicable Code: Section 19.40.040 Construction Debris Control

## 2. Label storm drains adjacent to property.

**Applies to:** New Construction

**Labeling storm drains communicates** to the public that drain inlets and catch basins connect to the ocean and trash and pollutants must be kept out of the system. Storm drains in the public right-of-way adjacent to the project site shall be labeled in accordance with the standards set by the Department of Public Works. Stencils for labeling are available from LA County. Contact Environmental Services at 323-848-6499 for more information.

**Submittal:** Note on plans.

**See:** Applicable Code: 19.20.190 on Storm Drainage and Storm Water Runoff and Chapter 15.56 on Storm Water and Urban Runoff Pollution Control

## 3. Provide roof location and install conduit from roof to electrical room for future photovoltaic system (PV) installation.

**Applies to:** Any Project That Requires a Development Permit (DVP)

**Although PV systems may not be feasible** at the time the project is originally constructed, steps should be taken to facilitate the future installation of a PV system. Maintain a 300-square-foot or larger section of south or west roof area clear of vent pipes and other obstructions to allow for the installation of modules and install conduit for future wiring from the electrical panel to the roof. Increase the structural capacity of the roof by four (4) pounds per square foot.

**Submittal:** Provide a roof plan that identifies at minimum, a 300 sq. ft. area for the location of future PV system. Plan should include a conduit (0.75 inch or larger with pull boxes as needed) from the roof to the electrical room - or electrical panels if no electrical room is provided to accommodate future PV installation. Plans should

demonstrate in the structural calculations that the roof is able to support an additional 4 lbs/sq. ft. dead weight for the panels and associated racks.

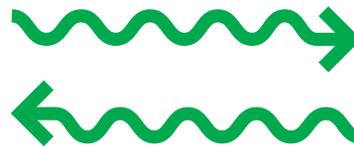
**Additional Requirements** for Solar Installation Can Be Found at 19.20.170

## 4. Indoor Air Quality Management Plan

**Applies to:** All New Projects, Tenant Improvements, and Remodels

**During construction** there are a number of ways that air quality in the building can be put at risk. These include water damage to materials, dust collection in the ventilation system, absorption of VOCs into porous materials like carpet and furniture, and clogged filters. Preparing a plan prior to construction and providing the plan to the contractor helps to ensure that air quality issues will be well managed throughout the construction process. Projects shall provide a construction air quality management plan on the construction drawings that, at a minimum includes protecting ducts during construction and changing the filters and vacuuming ducts prior to occupancy.

**Submittal:** Note on plans for Building and Safety to verify.



## 5. Use low-VOC interior paints and wood finishes .

**Applies to:** All Projects, Including Minor Tenant Improvements

**Low Volatile Organic Compound (VOC)** paints and wood finishes are broadly available at little or no additional cost than their toxic counterparts. Using these materials protects both workers and occupants from respiratory irritations that can be generated by VOCs. Most low-VOC paints marketed by paint manufacturers meet the threshold of 50 grams (or less) per liter for flat paints, and 150 grams per liter (or less) for non-flat paints.

**Submittal:** Should Be Noted on Plans, Receipts Should Be Retained to Show to Building Inspectors

## 6. Install Energy Star appliances.

**Applies to:** All New or Modified Structures

**Energy Star qualified appliances incorporate** advanced technologies that use 10-50% less energy and water than standard models. They are widely available from all major brands. Rebates and incentives are often available from Southern California Edison, see <http://www.sce.com/RebatesandSavings/> and also from SoCal Gas

## Submittal Requirements

Company and LADWP. Commercial appliances that are not available in Energy Star are exempt from this requirement.

**Submittal:** Note on plans.

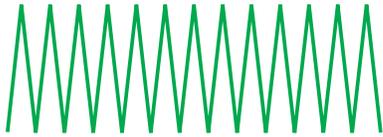
### 7. Provide permeable outdoor surfaces.

**Applies to:** All New and Any Project That Modifies Landscape or Hardscape

**The minimum requirement** is that 55% of front yards and 50% of side yard are permeable surfaces. Examples of permeable materials include planted or gravel covered areas, porous asphalt, unit pavers, plastic geocell pavers, vegetated swales, and vegetated filter strips. Permeable surfaces reduce the amount of water that enters the ocean through the storm drain system. Stormwater typically carries pollutants such as automobile fluids, garden fertilizers, herbicides, pesticides, and animal waste. When retained on-site, the water is treated through natural processes in the soil. Capturing stormwater also increases aquifer recharge. Permeable paving surfaces need regular maintenance to remain effective.

**See:** Applicable Code: 19.20.190 on Storm Drainage and Storm Water Runoff for All Projects and Section 19.36.280 (B)(5) on Front Yard Paving for Multi-family Projects

**Submittal:** Show and label permeable and non-permeable surfaces on plan.



### 8. Conserve water with use of drought tolerant plants, tree preservation, and irrigation plan.

**Applies to:** All Projects with Discretionary Permits

**Use Drought Tolerant and Native Species** for Landscaping  
Native and drought tolerant plants use less water than exotic plants and are generally less susceptible to pests and disease. There is a wide variety of native California plants which offer year round color and are attractive. Avoid inadvertently over watering by planting in hydrozones, appropriately grouping plants by their water need. Irrigation systems should be appropriately sized and also have timers to prevent over watering or watering during midday. Water is a scarce resource in Southern California and our growing population is placing enormous strains on our water supply. Water flow from the Sacramento River Delta to the California aqueduct which supplies Southern California will decrease sharply in the coming years.

**See:** Applicable Code: Section 19.26.060 on Landscaping, Chapter G-26 of Landscape Design Guidelines, and utilize the WUCCOLS system of plant classification. Show plant species and water use classification on landscape plans.

**Submittal:** Show and note on landscape plan.

**See:** Applicable Code: Section 19.26.060 Plant Materials, 19.26.070 Irrigation and Water Conservation, and Chapter 15.52 Water Conservation Plan



### 9. Divert storm water and provide stormwater management plan.

**Applies to:** Any Priority Project Requiring a Standard Urban Storm Water Mitigation Plan (SUSMP)

**Treating stormwater maintains** quality of water in Santa Monica Bay. Options to treat stormwater include bioretention, swales, sand filter, stormwater infiltration basins, living roofs and mechanical filters. Use infiltration, biofiltration or equivalent flow reduction treatment best management practices for the runoff resulting from either the first 0.75 inches of rainfall or the runoff resulting from a continuous rainfall event of 0.2 inches per hour. Must comply with standards set by the Department of Public Works. Consult the Environmental Services Coordinator at 323-848-6499 for more information.

**Submittal:** Provide an approved Standard Urban Storm Water Mitigation Plan (SUSMP).

**See:** Applicable Code: 19.20.190 Storm Drainage and Storm Water Runoff and Applicable Code: 15.56.095 Standard Urban Storm Water Mitigation Plan (SUSMP) Requirements for New Development and Redevelopment Projects

### 10. Provide secure bike parking.

**Applies to:** All New Residential Projects and Non-residential Over 7,500 Sq. Ft.

**Convenient and secure bicycle parking encourages** bicycling by both employees and residents. This requirement involves installing infrastructure. For non-residential land uses, a minimum of one employee bicycle parking space for each 7,500 sq. ft. of gross floor area, and a minimum of one visitor or short term bicycle parking space for each 10,000 sq. ft. of gross floor area must be provided. For residential projects of five or more units, one bicycle parking space for each four units shall be provided outside of the unit.

**Submittal:** Show on plans.

**See:** Applicable Code: Section 19.28.150 on Bicycle Parking & Support Facilities

### 11. Install water saving features.

**Applies to:** All Structures, and Modifications to Bathrooms, Kitchens, Etc.

**Projects shall comply** with applicable requirements for utilizing

low-flow showerheads, faucets and water closets as adopted by Section 13.12.030(i) and (j). The maximum rate for low-flow faucets is 2.2 gallons per minute. The maximum rate for shower heads is 2.5 gallons per minute. These fixtures can help reduce water usage at a time when Southern California is facing a sharp decrease in water supply.

**Submittal:** Note on plans.

**See:** Applicable Code: Section 13.12.030(i) and (j)



## 12. Provide space for the collection and storage of recyclables.

**Applies to:** All New or Modified Structures

**Convenient access** to recycling facilities encourages building occupants to utilize the City's recycling programs to their fullest. Projects must comply with the minimum solid waste and recyclables storage requirements.

**Submittal:** Show collection and storage area on plans.

**See:** Applicable Code section: 19.36.280 on Solid Waste and 19.20.180 (B)(10)

## 13. Install energy efficient outdoor lighting.

**Applies to:** Any Project That Requires a Development Permit (DVP)

**Projects shall comply** with all applicable requirements in Section 19.28.100(A)(3) (Outdoor Lighting).

**Outdoor lighting** should be designed to prevent glare, light trespass, and sky glow as much as possible. Permanently installed lighting should not blink, flash, or be of unusually high intensity or brightness. Exterior lighting must be energy-efficient and shielded so that all glare is confined within the boundaries of the site. Energy efficient outdoor lighting lasts longer than incandescent bulbs, saves energy and money, and light spillage is reduced.

**Submittal:** Note on plans.

**See:** Code, Section 19.20.100 (A)(3)

## 14. Landscape surface parking areas.

**Applies to:** All New Surface Parking Lots, and Modifying of Existing Properties with Development Permits (DVP)

**Projects must comply** with all applicable requirements in Section 19.28.100(B) (Parking Area Landscaping Requirements). The parking lot must have perimeter landscaping, with 1 canopy tree for every 9 parking spaces. Parking areas adjacent to the public right of way

and parking areas adjacent to residentially zoned parcels must be screened from view with landscaping to a height of 42", measured from the surface of the parking area.

**Submittal:** Should Be Noted on Plans

**See:** Applicable Code: Section 19.28.100(B)

## 15. Provide transportation management plan.

**Applies to:** All Projects of 10,000 Sq. Ft.

**Projects shall comply** with all applicable provisions of Chapter 10.16 (Transportation Demand Management).

**Submittal:** Transportation Management Plan, No Annotation on Plans Necessary

**See:** Applicable Code: Chapter 10.16 Transportation Demand Management.

## 16. Comply with construction debris control.

**Applies to:** Any Projects That Generates Construction Debris, Including Minor Tenant Improvements

**Projects shall comply** with all applicable requirements in Section 13.04.040 (Construction Debris Control).

**Submittal:** Owner Certification of Best Management Practices for All Construction Sties

**See:** Applicable Code: Section 13.04.040 Construction Debris Control



## 17. Environmental Protection, Pollution, and Solid Waste

**Applies to:** All Projects

**Projects shall comply** with all applicable requirements in Chapter 15 (Environmental Protection, Pollution, and Solid Waste).

**Submittal:** Note on plans, see Code for further requirements.

**See:** Applicable Code: Chapter 15 (Environmental Protection, Pollution, and Solid Waste)

See zoning code for details at <http://qcode.us/codes/westhollywood>.

## 18. Comply with energy efficiency standards.

**Applies to:** All Projects

**Projects shall comply** with all applicable provisions of the most recent editions of the Title 24 Energy Efficiency Standards, and most recent editions of the West Hollywood Building, Electrical, Mechanical and Plumbing Codes.

**Submittal:** Title 24 Energy Compliance Forms Where Applicable

# Process and Procedures

## Application Process

The Green Building Program is integrated within the permit application process. Applicants for remodeling must show compliance with the 18 mandatory points on the project plans. Applicants for new construction subject to the Green Building Point System must show compliance with the Point System and the 18 mandatory points on the project plans. Applicants must also submit the Point System checklist that indicates how the project will achieve the required number of points.

The Point System checklist is in the form section of the manual. It can also be found on the West Hollywood Green Building webpage ([www.weho.org/greenbuilding](http://www.weho.org/greenbuilding)), or obtained from the Planning Division at City Hall.

Applicants can choose which points to achieve from the 160 possible points. Preliminary selection is done at the planning approval stage. Final selection is done at building permit approval. "Innovation points" are available if an application identifies a green design feature outside of the system.

## Plan Submittal

Applicants subject to the Green Building Point System must include a separate "green sheet" or a "LEED Checklist" as part of the plans. The green sheet must list all green building features with a column showing the number of points each feature is worth, as well as the page number on the plan set where each feature is shown. The points should be tabulated at the end of the list to demonstrate a minimum of 60 required points. **An example of the list is shown on the next page.**

For compliance with the program, an applicant must show a minimum of 60 points on the green sheet, and document the points on the plan set. If an applicant is requesting an incentive, a minimum of 90 points must be shown on the green sheet and documented on the plans. The green sheet will be reviewed by all applicable divisions for accuracy and completeness.

A project will not be deemed complete by Planning Division staff until a complete green sheet is provided and compliance is shown on the plan set. For projects subject to review by the Planning Commission, a summary of green building design features will be included in the staff report.

## Building Permit Submittal

To allow for flexibility throughout design development of a project the Green Building Points may change between applicant approval of planning permits and approval of building permits. However, the

minimum number of 60 points must be reached, or the 90 point total if an incentive has been provided. If an applicant has plans approved that include a physical design incentive and does not achieve the 90 point total, the project must be redesigned to remove the incentive. The redesign is subject to review and approval by the Planning Commission and Planning Commission Design Review Subcommittee, as applicable.

The green sheet or LEED Checklist must be included in the building permit submittal. Additionally, the green sheet or LEED Checklist must list all green building features with a column showing the number of points each feature is worth, as well as the page number on the plan set where each feature is shown. The points should be tabulated at the end of the list to demonstrate a minimum of 60 required points for compliance with the Green Building Program, or a minimum of 26 points for LEED Certification.

Finally, the Building Inspectors will verify that the selected points are included in the constructed project upon site inspection.

## LEED Exemption

### Who is Exempt

Projects that comply with LEED green building standards, and document participation in the LEED certification process, are exempt from the West Hollywood Green Building Point System, but must still follow the 18 green design elements. The City encourages participation in our local green building program because it is tailored to the opportunities and conditions in our local area. It also is free of some of the more lengthy documentation procedures involved in LEED. However, the City recognizes the standards and values of the LEED program. Thus, individual applicants have the option to use LEED certification as an alternative to the City's green building point program. Information on the LEED rating system can be found at [www.usgbc.org](http://www.usgbc.org). LEED rating standards range from "Certified" to "Platinum" projects depending on the number of credits they achieve.

### Necessary Steps to Demonstrate Exemption

Applicants participating in the LEED certification process must follow the steps below to become exempt from the West Hollywood point system.

1. Submit evidence that the project has been registered in the LEED program. (copy of USGBC confirmation of LEED project registration).
2. Provide a LEED checklist and supporting documentation for building permit submittal. The documentation must identify:
  - Which Points The Project Is Attaining, Including the LEED Required Points and Selected Points;
  - How the Project Will Attain the Points;

## Example Submittal:

GREEN DESIGN OR PRODUCT DESCRIPTION	POINTS AVAILABLE	PAGE NUMBER
Preserve existing trees over 6" diameter (1 point./tree; 3 points max.).	2	A7.2
Use recycled content mulch or other landscape amendments.	1	L1
Plant deciduous canopy trees (min. 36" box, planted in the ground) on exposed West and/or South elevations (1 point/tree, 5 points max.).	2	L2
Provide narrow floor plates (max. 50 ft. depth) and/or courtyards to enable natural ventilation.	3	S4.1
Provide operable windows to enable natural cross ventilation (min. 2% of total window area).	2	shown throughout plans
Install exterior shading devices on South and/or West facing windows.	0	n/a
Provide ceiling fans (1 point for each 50% of units or floor area served, 2 points max.).	0	n/a
Eliminate air conditions (available only if points for narrow floor plates, operable windows, and exterior shading are incorporated).	0	n/a
Use recycled-content base or backfill material.	1	Green-sheet only
Incorporate Fly Ash or Stag Ash in concrete (min. 15%).	3	Green-sheet only

- Where Evidence of Compliance Is Shown on the Plans (note the page numbers where the green measures used attain the applicable LEED rating can be found.)

3. Attach the LEED checklist and documentation to general notes and drawings.
4. Project must target a minimum of 26 points within the LEED system.
5. Application must be signed by the owner, and a LEED accredited professional.

LEED certification requires that building systems be checked by a third party after completion. This is not required by West Hollywood, however, applicants are encouraged to verify that fundamental building systems are designed, installed, and calibrated to operate as intended. A fee sheet for LEED certification can be found at the end of the manual.

## Green Building Point System

All applications for projects proposing three (3) or more residential units, and all applications for new commercial buildings must comply with the Green Building Point System. A minimum of 60 points is required. A total of 160 points are available, divided into the eleven categories listed below. A copy of the point system is located in the form section of the manual.

1. Site
2. Natural Heating + Cooling
3. Foundation
4. Structural Frame
5. Plumbing
6. Insulation
7. Energy Efficiency + Renewable Energy



8. Indoor Air Quality
9. Roofing
10. Exterior Finishes
11. Resource Efficient Materials

The program allocates points based on preference and difficulty. Higher point totals are given for design standards that community members identified as most important for West Hollywood, and for design standards that are most complex or costly.

Unless otherwise noted, a design feature must be integrated into the entire project in order to obtain the points for that design feature. There is no minimum number of points for each of the 11 categories.

The City understands that Green Building technology is rapidly expanding. Therefore if a design element is not included on the list, applicants may request it as an "innovation point." Innovation points must support the intent statements listed on the point system table.

## Implementation of Point System

### Site

**Total Possible Points: 4**

**Intent:** Locate buildings close to existing services to reduce environmental impacts from increased transportation and fully utilize infrastructure. Preserve or restore existing natural resources or amenities on the site. Ensure that the building is equipped to support recycling, alternative transportation, water conservation and other operations components.

- **Preserve existing trees over 6" diameter (1 point per tree, 3 points max.).**

**Trees should be protected** in place. If preservation in place is impossible, trees with characteristics that allow for healthy transplanting may qualify for this point. Trees which are unlikely to transplant successfully can not qualify for this point.

**To ensure that trees are not damaged** during construction care needs to be taken to protect canopies and root structures. The area around the root zone (roughly equivalent to the diameter of the canopy) should be cordoned off to prevent compaction of the soil from parking or materials storage. Hire a certified arborist if you are unsure about the specific precautions that are needed to protect specific species.

**Submittal:** Identify on the site plan all trees that are proposed for preservation. Mark the species and the existing diameter of the trunk and canopy. Show the area of protection that will be provided around each tree.

- **Use recycled content mulch or other landscape amendments (1 point).**

**For large surfaces,** cellulose mulch made from recycled newspaper can be used as a primary component of hydro-seeding sprays. Mulch from urban green waste or recycled tires can be used after plants are installed to retain moisture in the soil and prevent weed growth. Composted urban green waste, manure or other organic material can be used instead of chemical additives.

**Submittal:** Provide in the landscape architecture plans a schedule delineating the types of mulch and soil amendments that will be used for each area and identify which will be from recycled sources.



### Natural Heating + Cooling

**Total Possible Points: 19**

**Intent:** Reduce energy loads while maintaining comfort through passive design strategies. Increase interior comfort and health through adequate ventilation.

- **Plant deciduous canopy trees on exposed West and/or South elevations (1 point per tree, 5 points max.).**

**Strategic placement** of deciduous canopy trees in front of exposed west and south facing windows and facades allows winter sun to warm a building and provides shade from summer sun. Trees must be a minimum of 36" box size at planting and planted directly into soil (not in planters). Consult the American Public Works Association Southern California "Greenbook" for standards on minimum soil depth for planting. Space surrounding tree trunk must be adequate to allow for growth to mature height.

**Submittal:** Indicate trees on the site plan and landscape plan. Identify the species and planting size.



- **Provide narrow floor plates and/or courtyards to enable natural ventilation (5 points).**

**Narrow floor plates allow** for air to flow through a building, thus providing ventilation through the natural displacement of air. To be

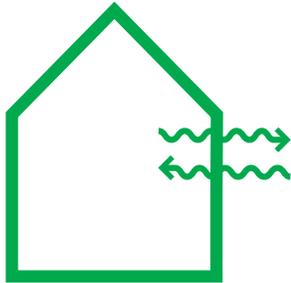
most effective, careful thought should be given to the location of interior walls and the placement of operable windows so that the air can move unimpeded through the space. Buildings must have a depth of no more than 50 feet to allow adequate air flow.

**Submittal:** Indicate dimensions on building floor plans.

- **Provide operable windows to enable natural cross ventilation (2 points).**

**Operable windows allow** the introduction of fresh air and exhaust of stale air through a combination of air displacement and velocity. Place windows low on the positive pressure side of the building and high on the negative pressure side. Select windows that can be opened to varying degrees to minimize the creation of unwanted drafts. To receive the points, a minimum of 20% of the total window area of the building must be operable. The operable windows must be located within the building to allow for cross ventilation.

**Submittal:** Indicate on building elevations and window schedule, and provide calculation of total window area and calculation of operable windows.



- **Install exterior shading devices on South- and/or West-facing windows (2 points).**

**Shading devices prevent** unwanted heat and sunlight from entering buildings during the warmest parts of summer days. Overhangs, awnings, light shelves, trellises, brie soleil, and vertical or horizontal fins are examples of permanent exterior shading devices. Certain photovoltaic (solar) collectors can also serve as shading devices. A minimum of 50% of windows should be shaded.

**Submittal:** Indicate on building elevations.

- **Provide ceiling fans (2 points max.).**

**Ceiling fans assist** natural ventilation by increasing air movement and breaking up stratified air. Energy Star ceiling fans are widely available. One point is available for each 50% of residential units or floor area served.

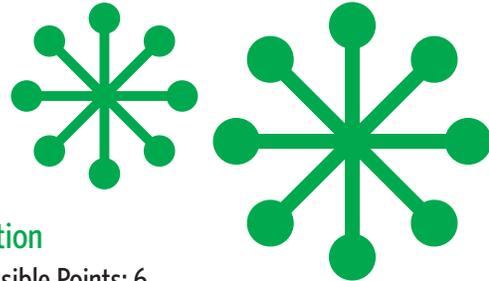
**Submittal:** Provide note on building floor plans and specify location on reflected ceiling plan.

- **Eliminate air conditioning (3 points).**

**This point is available** only if the operable windows, exterior shading devices and ceiling fans listed above are incorporated. Air conditioning is a major source of energy use in buildings. In many

instances air conditioning equipment is used to increase air movement or exhaust warm air when no cooling is actually required. By applying the natural ventilation strategies described above in combination with a well-sealed building envelop, it is likely that many buildings in West Hollywood can provide occupant comfort without the need for an air conditioning system.

**Submittal:** Note on building floor plans.



## Foundation

**Total Possible Points: 6**

**Intent:** Reduce resources used and encourage use of recycled content materials.

- **Use recycled-content base or backfill material (1 point).**

**Crushed concrete and recycled asphalt pavement** are frequently used as base or backfill material. Recycled glass aggregates and granular rubber products are also used in certain applications. When appropriate, using debris from demolition on the building site can reduce both landfill waste and cost.

**Submittal:** Note percentage of recycled content on either structural plans or in specifications.

- **Incorporate fly ash or slag ash in concrete (min. 15%, 3 points).**

**Fly ash is a by-product** of coal-fired electricity generation. It is a difficult waste product to dispose of due to its potential to leach into ground water. Fly ash replaces or reduces the amount of Portland Cement in concrete while yielding a stronger, more durable and smoother finished product. In some applications and at higher percentages, a slightly longer curing time is required for flyash concrete. A minimum of 15% fly ash or slag ash must be incorporated.

**Submittal:** Specify fly ash percentage in either structural plans or in specifications.

- **Increase fly ash percentage (2 points max., 1 point for each additional 5%).**

**Submittal:** Specify fly ash percentage in either structural plans or in specifications.

## Structural Frame

**Total Possible Points: 14**

**Intent:** Reduce the amount of old growth sawn wood (wider than 3x and taller than 8x) used in framing, encourage ecologically sensitive forestry, and encourage alternate framing techniques. (Applies to

## Implementation of Point System

salvaged wood, steel framing, FSC-certified wood, and engineered wood products that help reduce the amount of old growth sawn wood used. Alternative building materials like Structural Insulating Panels and Insulating Concrete Forms also address this environmental concern.)

- **Use engineered lumber or steel for minimum of 90% of subfloors, sheeting, floor joists, beams, headers, and trusses, as applicable (5 points).**

**Engineered joists and rafters** are made of smaller dimension trees, thus reducing the use of old growth wood in framing. Engineered products are available in specified sizes, do not bend or warp, and offer increased strength in addition to reducing jobsite waste.

**Submittal:** Specify in structural plans or in specifications.

- **Use engineered vertical wood studs (2 points).**

**Engineered vertical studs** are also made of smaller diameter wood, thus reducing the use of old growth lumber while providing similar waste reduction and strength benefits as other engineered products. Specify percentage of engineered vertical studs required to be used in the project.

**Submittal:** Specify in structural plans or in specifications.

- **Use FSC-certified wood for framing (5 points max.).**

**Framing lumber** from well-managed forests certified by the Forest Stewardship Council prevents the use of old growth lumber and maintains healthy forest eco systems. Allow additional time for sourcing FSC-certified framing materials. One point is given for each 10% of framing that uses FSC-certified wood.

**Submittal:** Specify in structural plans or in specifications.

- **Use structural insulated panels (SIPs, 2 points).**

**Structural insulating panels (SIPs)** are pre-manufactured panels that consist of two sheets of rigid structural facing that is bonded to an insulating core, which are typically four or more inches thick. Facings are generally OSB (oriented strand board) or plywood, and the core is most commonly polystyrene foam. Certain manufacturer/brands have been permitted for use locally. SIPs offer excellent insulation, accelerated construction, airtight assembly, noise attenuation, and superior structural strength. Initial costs are generally higher with SIPs than with traditional framing, however labor costs and speed of project completion can make SIPs a more affordable option overall.

**Submittal:** Specify in structural plans or in specifications.

## Plumbing

**Total Possible Points: 8**

**Intent:** Increase the water efficiency of plumbing fixtures and reduce energy used for water heating. Note: Plumbing fixtures that use less

water than current code requirements reduce the amount of water that needs to be imported to the City and the amount of water that needs to be treated after being used. In addition, more efficient hot water fixtures reduce the volume of water that need to be heated by gas or electricity, thereby saving energy. The property owner benefits with lower utility bills.

- **Insulate the full length of all hot water pipes (1 point).**

**Submittal:** Show on plumbing plans.

- **Low-flow showerheads (1 point)**

**Showerheads must flow** at rate less than 2.5 gallons per minute to receive this point. All showerheads in the building must be installed to this standard. There are two basic types of low-flow showerheads: aerating and laminar-flow. Aerating showerheads mix air with water, forming a misty spray. Laminar-flow showerheads form individual streams of water.

**Submittal:** Show on plumbing plans and provide fixture cut sheet on specification.



- **Water efficient kitchen and bathroom faucets (1 point)**

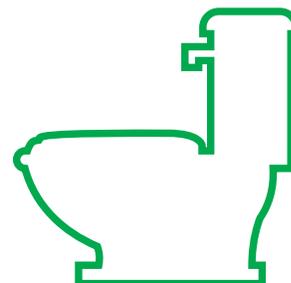
**Faucets must flow** at rate less than 2.5 gallons per minute to receive this point. All faucets in the building must be installed to this standard.

**Submittal:** Show on plumbing plans and provide fixture cut sheet or specification.

- **Water efficient toilets (1 point)**

**Water efficient toilets** must either be dual-flush or less than 1.3 gallons per flush. All toilets in the building must be installed to this standard. Dual-flush toilets use 0.8 gallons per flush for liquid waste and 1.6 gallons (the amount used by a conventional toilet) per flush for solid waste, with an average of less than 1.3 gallons per flush.

**Submittal:** Show on plumbing plans and provide fixture cut sheet on specification.



- **Water efficient urinals (2 points max.).**

**One point is given** for urinals that use less than 0.5 gallons per flush, and two points are given for water free urinals. All urinals must be installed to these standards to receive the points.

**Submittal:** Show on plumbing plans and provide fixture cut sheet on specification.

- **Install tankless water heaters (2 points).**

**Tankless water heaters produce** hot water on demand – when it is needed – instead of producing and storing a specified amount of water. Tankless units are 25% - 40% more efficient than tank units and require less space. Venting requirements are often more stringent for tankless units. Some tankless units can be combined with solar water heaters.

**Submittal:** Show on plumbing plans and provide fixture cut sheet on specification.

## Insulation

### Total Possible Points: 5

**Intent:** Reduce energy loss through the building envelope and improve occupant comfort. Promote better indoor air quality. Increase use of recycled content and rapidly renewable materials.

- **Install formaldehyde-free, recycled-content (min. 25%) insulation (1 point).**

**There are several types of insulation** that are free of added formaldehyde and at least 25% recycled content. These include some brands of fiberglass batts, cellulose, cotton, foam, and wool. If installing fiberglass, use encapsulated batts. Install in cavities as required per Title 24 Energy Code.

**Submittal:** Provide specification.

- **Install cellulose, cotton batt, bio-based foam in walls (min. 60% of insulation, see below, 2 points).**

**Submittal:** Provide specification.

- **Install cellulose, cotton batt, bio-based foam in ceilings (min. 60% of insulation, 2 points).**

**Cellulose and cotton batt insulation** are very effective and also excellent sound barriers. When treated with borate-based fire and pest retardants, they are non-toxic, effective, easy to work with and cost competitive. Bio-based foam also performs well and uses soy or sugar as a base instead of petroleum.

**Submittal:** Provide specification on the materials used on plans.

## Energy Efficiency + Renewable Energy

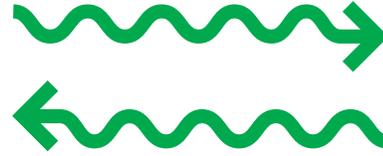
### Total Possible Points: 45

**Intent:** Reduce climate change impacts of building operation by

increasing overall building energy efficiency and generating renewable energy. Provide for the future installation of renewable energy systems.

- **Exceed Title 24 Energy Code by 5% (see below, 5 points).**

**Submittal:** Show compliance with this requirement on Title 24 calculations.



- **Exceed Title 24 Energy Code by more than 5% (1 point for each additional 1% above 5%, max. 15 points).**

The California Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24, Part 6) were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Title 24 compliance can be met by two approaches: either prescriptive packages or a performance method. The performance method must be used to document performance better than the State standard. An energy consultant may be necessary to help develop strategies for exceeding the energy code.

**Submittal:** Provide Title 24 calculations.

- **Participate in Energy Star (residential) or Savings by Design (commercial) programs (3 points).**

**Residential projects** that earn the Energy Star designation must meet guidelines for energy efficiency set by the U.S. Environmental Protection Agency. In California, these guidelines require homes to be 15% more energy efficient than Title 24. Savings by Design is a program to encourage energy efficient nonresidential building design and construction. Projects must exceed Title 24 by at least 10% to be eligible for "Savings by Design." Both programs are sponsored by four California utilities under the auspices of the Public Utilities Commission and offer financial incentives for owners and design teams following verification that the efficiency measures are installed and operating as intended.

**Submittal:** Provide Energy Star program compliance certificate.

- **Pre-plumb and provide conduit for solar water heating (1 point).**

**Solar hot water systems use** the sun's energy to heat water in an enclosed box or tube that is typically mounted on the roof of a building. To facilitate future installation of solar hot water, copper pipes and a conduit for wiring (for the pump and thermostat or other sensor) are needed.

**Submittal:** Show piping and electrical conduit in mechanical plans, and at least an (determine method of sizing of system based on

## Implementation of Point System

project size, no 8' x 8' clear section) of south-facing roof in the architectural roof plan with note regarding the possible future location of solar hot water system.

- **Install solar water heating system for domestic hot water (2 points).**

There are several types of solar water heaters, such as pumped flat-plate collector systems, thermo siphoning flat-plate collector systems, evacuated tube, and integral-collector-storage or "batch" systems. Prices range considerably depending on the sophistication of the unit. Typically a storage tank is used with solar systems. However, certain models of tankless systems are also appropriate. Pre-heating the water reduces use of energy for water heating and lowers utility costs. Check with an experienced solar designer and/or installer to select the system type and size that meets the needs of your project.

**Submittal:** Show on plumbing plans and provide fixture cut sheet on specification.



- **Tankless water heaters**

See plumbing section.

- **Install solar water heating system for pool heating (2 points).**

Pool heating is one of the most cost effective applications of solar hot water systems. Pool water does not need to reach as high of a temperature as other domestic uses, so much of the heating can be accomplished by the solar system. There are different types of solar pool heaters, including conventional roof mounted systems and in-ground systems that should be built into the design of the hardscape surrounding the pool.

**Submittal:** Show on plumbing plans and provide fixture cut sheet or specifications.

- **Install Photovoltaic (PV) panels (1 point/kw, max. 10 points).**

Photovoltaic (PV) panels convert sunlight into electricity. There are several types of PV systems. The most common crystalline silicon panels are typically roof mounted in a southwest orientation. Amorphous silicon thin-film PV is lighter in weight but requires more panels to be installed to generate the same amount of energy as the silicon panels. Thin-film can also be attached on the roof or integrated with the roofing or façade in what are referred to as building-integrated photovoltaics (BIPV).

**Submittal:** Provide a roof layout plan that illustrates where panels are placed and where conduit from roof to electrical room or electrical panels.

- **Install Energy Star lighting (50% of total fixtures, 3 points).**

Energy Star qualified lighting uses about 75% less energy than standard lighting, produces 75% less heat, and lasts up to 10 times longer. Energy fixtures typically use compact florescent bulbs with integrated ballasts or efficient florescent bulbs with magnetic ballasts. Fixtures and bulbs are available in a wide variety of shapes and styles.

**Submittal:** Provide system specifications and show on electrical plans.

- **Install Energy Star exit signs (1 point).**

Exit signs that have earned the Energy Star designation operate on five watts or less per sign, compared to standard signs, which use as much as 40 watts per sign. One sign alone can save about \$10 annually on electricity costs and can last up to 10 years without a lamp replacement.

**Submittal:** Provide fixture cut sheet or specifications.

- **Install timer or photo sensor for exterior lights (1 point).**

Timers and photo sensors turn off lights when they are not needed, saving electricity and lowering utility bills. Timers should be adjusted periodically to account for changing daylight hours. Photo sensors detect natural light and switch off when adequate daylight is present.

**Submittal:** Provide fixture cut sheet or specifications.



- **Seal all ducts with mastic (residential) or Install per SMACNA standards (commercial, 1 point).**

Properly sealed ducts ensure the ventilation system is working as intended, prevent air and toxin transfer between spaces, and avoid the ineffective distribution of conditioned air. Improperly sealed ducts can leak as much as 20% of the conditioned air into attics, walls, and other unconditioned spaces. Apply mastic (low VOC <30 g/l is preferred) to every joint in the building's duct system to ensure good sealing. The SCACNA standards outline proper duct installation and sealing for commercial duct systems.

**Submittal:** Provide note on drawings and/or call out SMACNA requirements in specs.

## Indoor Air Quality

**Total Possible Points: 14**

**Intent:** Increase quality of indoor air by reducing exposure to toxic

chemicals. Decrease concentration of toxins and dust through ventilation and filtration.

- **Use no-VOC paints on interior applications ( $\leq 5$  g/l, 2 points).**

**Volatile Organic Compounds (VOCs)** are organic compounds of carbon that evaporate into the atmosphere. Chemicals considered to be VOCs are often included in paints to improve adhesion. Many VOCs are known respiratory irritants and can be triggers for asthma. Paints that are labeled no-VOC have only trace amounts of VOCs as shown on the product label and therefore reduce air-quality related health impacts.

**Submittal:** Note on plans, retain receipts to show to building inspectors.



- **Use low-VOC sealants and adhesives ( $\leq 50$  g/l, 2 points).**

**Sealants and adhesives** that are labeled low-VOC have fewer VOCs than conventional products, as shown on the product label.

**Submittal:** Note on plans, retain receipts to show to building inspectors.

- **Use composite wood with no added urea formaldehyde for counters and cabinets (2 points).**

**Urea formaldehyde is frequently added** to the glues used in building products such as plywood, particle board, and medium density fiberboard due to its ability to increase adhesive capacity. Urea formaldehyde continues to off-gas for many years unlike phenol formaldehyde, which is stable and does not off-gas at common indoor temperature ranges. Formaldehyde is a known carcinogen and has been linked to respiratory illnesses including asthma. Newer adhesives on the market, including non-toxic soy-based adhesives, are free of added formaldehyde and are being used in many composite wood products. Composite wood products such as plywood, MDF and wheat boards are now available with no added formaldehyde.

**Submittal:** Note on plans, retain receipts to show to building inspectors.

- **Use carpet certified by CRI Green Label program (1 point).**

**The Carpet and Rug Institute (CRI)** offers the Green Label and Green Label Plus certifications to identify carpets and adhesives that are tested by an independent, certified laboratory to meet stringent criteria for low emissions of VOCs and other chemicals.

**Submittal:** Provide documentation of CRI certification.

- **Eliminate the use of carpet (2 points).**

**Carpet traps** dust, dust mites, mold and other allergens and pollutants. Even when cleaned frequently, carpet can have a negative

contribution to indoor air quality. Replacing carpet with hard surface flooring and area rugs eliminates most of these carpet issues, thus improving indoor air quality.

**Submittal:** Note floor finishes on plans.

- **Vent kitchen range hoods to the outside (min 80% of units, 2 points).**

**Venting kitchen range hoods** to the outside insures that combustion gases, smoke, and humidity from cooking are removed from the building, thus improving air quality and reducing the chance of mold growth.

**Submittal:** Show and note on plans.

- **Install fan with humidistat sensor or timer in all bathrooms (1 point).**

**Properly ventilated bathroom spaces** are less likely to harbor mold, which is both an air quality concern and damaging to building materials. A fan with a humidistat sensor maintains humidity below the level that mold can grow. A timer that continues fan operation for 10-15 minutes after the light is switched off is also an effective means of ensuring good ventilation.

**Submittal:** Note on plans, retain receipts to show to building inspectors.

- **Install high efficiency HVAC filters (min. MERV 8) or provide ductless system (1 point).**

**MERV, or Minimum Efficiency Reporting Value,** is a number from 1 to 16 that is relative to an air filter's efficiency. The higher the MERV, the more efficient the air filter is at removing particles. MERV 8 filters provide a good level of air filtration without requiring that fans and other mechanical system components be increased in size. A schedule for filter replacement should be established prior to building occupation.

**Submittal:** Note on plans.

- **Provide daylighting for 50% of occupied spaces (1 point).**

**Daylighting is a strategy** to increase the use of natural lighting in a building. Generally, access to natural daylight has a beneficial effect on human well-being. Maximizing the use of natural daylight allows for a reduction in the use of electric lighting. Daylight strategies should be integrated with electric lighting, through the sizing of the electric system and use of daylight sensors. Perimeter windows, clerestories, roof monitors, skylights, light tubes, light shelves, and light colored ceilings can all be used to create effective daylighting. Specific attention should be paid to providing daylight in frequently used spaces such as living rooms, kitchens, conference rooms, etc.

**Submittal:** Show and note on plans.



## Implementation of Point System

### Roofing

#### Total Possible Points: 21

**Intent:** Provide roofing materials that are durable, reduce resource use, minimize interior heat gain, provide storm water management, and reduce the urban heat island effect.

- **Use recycled-content roofing materials (2 points).**

**Roofing materials are an excellent means** of using materials removed from the waste stream in municipal or commercial recycling programs. Recycled asphalt, slate, and rubber are used in roofing products and reduce the uses of new materials. Most metal roof products contain some level of recycled steel or aluminum. Flat, built-up roof systems can include recycled rubber and recycled steel for flashing. There are a number of shingle products made of recycled rubber, plastic, or cementitious material.

**Submittal:** Provide specifications with recycled content of products used.

- **Install Energy Star or cool roof (2 points).**

**Energy Star roofs or cool roofs** are light-colored and reflect the sun's heat away from the building thus reducing summer cooling loads and lowering the ambient temperature on the roof overall. A lower roof temperature eases the load on rooftop mechanical equipment and helps decrease the urban heat island effect.

**Submittal:** Provide copy of warranty information and note on roof plan.

- **Install durable roof with long-term warranty or demonstrated long-term durability (40 year warranty for asphalt shingles, 15 year warranty for built-up roof, metal or clay tile, 3 points).**

**Roofing materials contribute** heavily to landfill loads. Installing durable products reduces the amount of roofing products entering landfills. Additionally, the chemicals and associated VOCs emitted during re-roofing are also reduced.

**Submittal:** Provide copy of warranty information and note on roof plan.

- **Install extensive vegetated green roof (3 points for each 50% of roof not occupied by mechanical equipment or access stairs, 6 points max).**

**Extensive (low-profile) green roofs include** 2" to 6" (50-150 mm) of planting media and support short ground-cover vegetation, such as sedums, grasses, mosses, and prairie mixes.

**Submittal:** Show the location of the green roof on the roof plan with calculations of compliant area.

- **Install intensive vegetated green roof (4 points/each 50% of roof not occupied by mechanical equipment or access stairs, 8 points max.).**

**Intensive (high-profile) green roofs** have enough soil - up to

several feet - to support tall grasses, meadow plants, shrubs, and even small trees. Structural, irrigation, and drainage requirements for high-profile green roofs are much more significant than those for low-profile systems.

**Submittal:** Show the location of the green roof on the roof plan with calculations of compliant area.



### Exterior Finishes

#### Total Possible Points: 4

**Intent:** Encourage durable materials that do not require frequent maintenance.

- **Use durable exterior finishes (1 point/30% of exterior area, 3 points max.).**

**Includes:** Integral-color or uncolored unpainted stucco, fiber-cement panels or siding, metal panels or siding, composite wood panel, glass, and other similar durable finishes. Durable exterior finishes reduce materials that must be replaced and potentially sent to the landfill. Providing durable materials also reduce maintenance costs to the building owners.

**Submittal:** Note on plans, provide samples of materials.

- **Use recycled-content or FSC-certified outdoor flooring materials (1 point).**

**There are a number of alternatives** to wood that can be used for decks and walkways. These include plastic lumber, plastic and wood fiber composites, and cementitious wood products. FSC certified wood products are another option if wood is preferred.

**Submittal:** Note on plans, retain documentation and receipts.

### Interior Finishes

#### Total Possible Points: 12

**Intent:** Reduce the use of natural resources, use rapidly renewable materials, and encourage ecologically sensitive forestry.

- **Use exposed concrete as finished floor (1 point/each 20%, 5 points max.).**

**Reducing the number and amount of products** in a building is a key way to make it green. Not adding flooring to the concrete reduces the amount of product, adhesives, etc. entering the building.

**Submittal:** Show floor finishes on plans and calculation for area.

See options below:

- **FSC-certified wood flooring for all wood flooring (1 point/30% of floor area, 3 points max.).**

**Forest Stewardship Council-Certified wood flooring**

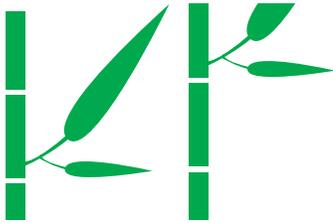
Made of wood from sustainably managed forests and should have documentation of its FSC status. There are a number of solid, engineered, and veneer products that are FSC-certified. Using these products helps to preserve forests throughout the world from clear cutting or other forms of mismanagement.



- **Use resource-efficient flooring (3 points).**

**Rapidly renewable materials: cork, bamboo, natural rubber, or linoleum**

Renewable materials are made primarily of materials that can regenerate in no more than seven years. Cork bark is removed from the tree and manufactured into a flooring product that can be used as an alternative to wood. Bamboo is a grass that can be used as a replacement for hardwood flooring such as oak or maple. Linoleum is made of cork flour, pine pitch, linseed oil, with a natural fiber (jute) backing. Rubber flooring is made with natural latex harvested from rubber trees. Both natural linoleum and rubber can be used as an alternative to sheet vinyl, vinyl composition tile, and other petroleum-based resilient flooring materials.



**Recycled-content carpet (min. 25% recycled content) for all carpeting (see below)**

Recycled-content flooring tiles (min 25% recycled content)  
Both broadloom (roles) and carpet tiles can include fiber spun from recycled plastic. The most common is PET, which is commonly found in water and soda bottles. Specifying recycled-content carpet is a way to close the loop in waste management by providing uses for products removed from the waste stream. Carpet with recycled content is equivalent in durability to conventional carpet. Several

major manufacturers feature products with recycled-content as high as 100%.

**Submittal:** Note on plans

- **Agriculture board, FSC-Certified, or rapidly renewable cabinetry material (3 points)**

Agriculture waste boards include wheat, straw, rice hull and sorghum products. Bamboo is available in sheets similar to plywood. Many plywood products can be purchased with an FSC veneer. Using these products instead of conventional cabinetry products provides a use for agricultural waste that is otherwise burned, supports sustainably managed forests, and encourages the use of renewable materials such as bamboo.

**Submittal:** Note on plans.

- **Use recycled-content countertop materials (min. 25% recycled content, 1 point).**

**Countertops are an excellent location** to incorporate recycled materials. Options include recycled glass tiles, recycled concrete aggregate, recycled paper and recycled metals. Care should be taken to follow specifications for installation, finishes and use for these unique products.

**Submittal:** Note on plans.

**Innovative Design**

**Total Possible Points: 8**

**Intent:** Allow for innovation in design, building systems, and materials. Add additional green design principles through innovative approaches.

- **Innovative Design Measures (8 points max.)**

**Green building is an exciting opportunity** to employ creative building styles, technologies and products. While this point system is developed to cover the main aspects of building, it is not exhaustive. These Innovative Design measures are available to the builder to receive credit for exceptional environmental innovation that is not addressed in this point system.

**Submittal:** Provide a written narrative explaining the benefits of the proposed Innovative Design measures, and also note on plans.

**GREEN BUILDING POINT SYSTEM SUMMARY**

total points in system	160
points needed for compliance	60
points needed to receive incentive	90

# INCENTIVES

In order to address the potential for increased cost for incorporation of multiple Green Building design features, projects that reach 90 points or greater in the West Hollywood green building point system may request one of the incentives outlined below. The incentives may be combined with other incentives in the Municipal Code, however, no incentive is available if the project proposes the demolition of a cultural resource. The applicant must specify which incentive is being requested prior to approval of planning permits for the project. The required points and the incentive must be shown on the project plans.

PROJECT TYPE	INCENTIVES	DETAILS
mult-family residential project (three or more units)	one (1) additional residential unit	may receive an additional unit - no larger than 700 sq. ft. with no parking requirement
	common space transfer with vegetated roof	100% of common open space may be provided on roof if the project installs and maintains a vegetated green roof for at least 50% of the roof space not occupied by mechanical equipment or access stairways. Noise attenuation features must be incorporated into design.
	flexible open space standards	Private open space may be transferred to and provided as common open space provided that 50% of all units provide 50 sq. ft. minimum of private open space with 5 sq. ft. in all directions - OR project can divide all common open space and add it to private open space areas (does not apply to projects using courtyard design incentives).
	slide setbacks transfer as open space	Side setbacks may be used to satisfy private or common open space requirements. Noise attenuation features must be incorporated into plans.
commercial project	0.1 FAR increase	Project may receive a 0.1 FAR increase.
mixed use project	restaurant parking reduction	New restaurant tenant spaces with less than 1,200 sq. ft. may provide parking at the ratio of 3.5 parking spaces per 1,000 sq. ft. of parking. The parking ratio can be used for a maximum of 2,400 sq. ft. lot per project.
	expedited permit processing for Building & Safety Division	You may request a four week maximum response time for first submittal, two week response time for subsequent submittal(s), and preferential Planning Commission scheduling.
	50% parking reduction	Projects with alley access and a lot size of 40 ft. or less in width may receive a 50% reduction.
mixed use project	See above.	may choose from one of the incentives listed above

# RESOURCES

## Green Building Resource Center

West Hollywood would like to make it as easy as possible to comply with the Green Building Program. For this reason, the City has created a Green Building Resource Center in City Hall where residents and businesses can learn more about green products and design. The Resource Center offers:

- A green product wall with samples of green materials and a description of their benefits
- Educational brochures on green design features and building techniques, including:
  - o Green building overview
  - o Bath/ Laundry/ Kitchen remodels
  - o Painting/ Finishes/ Indoor air quality
  - o Roofing/ Exteriors
  - o Landscaping
  - o Energy efficiency
  - o Greening your business

- Copies the green building program manual, ordinance, and submittal forms
- List of local vendors selling green products and design

## Additional Resources

Visit the City of West Hollywood's green building webpage at [www.weho.org/greenbuilding](http://www.weho.org/greenbuilding) to find out more information on green products, services, research on sustainable development, environmentally focused news and publications, and links to other leading green cities in the United States. The Green Building Program is intended to be flexible and as such, is subject to change. The green building website is updated frequently to reflect changes in technology, best practices, and new information on the rapidly changing field of green building.



# GLOSSARY

## Addition

Adding 500 square feet to a structure qualifies as an addition and requires a development permit (DVP).

## Comply

Projects will be in compliance with the green building program following construction and building inspection, ensuring that a minimum of 60 green points in building plans were incorporated into construction and landscaping. Once the building inspector awards the certificate of occupancy, the project will be deemed in compliance.

## Design Feature

A design feature is an element of the project design incorporated to achieve a particular goal. For example, using low-flow faucets is a "design feature" that helps the overall project conserve water.

## Drought Tolerant

Drought tolerant plants are those that can live in dry climates. See City code, Section 19.26.060 on Plant Materials and use California Department of Water Resources study, Water Use Classification of Landscape (WUCOLS).

## Effective Date (October 1, 2007)

The Green Building Ordinance became effective on October 1, 2007. Pursuant to the Municipal Code, any project not deemed complete before October 1, 2007 in compliance with the State Permit Streamlining Act is required to comply with the ordinance. Any project that received planning permits or was deemed complete by the Planning Division previous to October 1, 2007 is not required to comply with the Green Building Program. These projects are eligible to "opt-in" to the Green Building Program and are eligible for a green building incentive should they meet the 90 point requirement of the point system.

## Energy Star

A joint program of the U.S. Environment Protection Agency and the U.S. Department of Energy, which among other things, has identified energy-efficient appliances and products to reduce greenhouse gases and conserve natural resources.

## Green Building Point System

The point system was developed, administered, and updated by the Community Development Department of the City of West Hollywood. Applicants may choose from 160 points and select green building elements to reach the 60 minimum points required for approval.

the Community Development Department of the City of West Hollywood. Applicants may choose from 160 points and select green building elements to reach the 60 minimum points required for approval.

## Green Sheet

All applicants must submit a "green sheet" or outline of the green points and/or elements they have incorporated into the project design, as well as where the green points or elements can be found in the project plans. This document is required for Planning approval to demonstrate that the project has met minimum requirements under the Green Building Program.

## Innovative Design Points

These are rewarded to applicants who incorporate green design features that are outside of the point system, but still demonstrate an effort to satisfy the green building program's goals - to reduce energy consumption and conserve resources. This point category is left open for the builder to receive credit for exceptional environmental innovation that is not addressed in this point system to ensure that the program is flexible and will respond to future technologies and materials.

## LEED

LEED stands for "Leadership in Energy and Environmental Design," a set of building standards for energy and resource efficiency developed and approved by the United States Green Building Council (USGBC). More information can be found at [www.usgbc.org](http://www.usgbc.org)

## LEED AP

A person or "accredited professional" who is recognized by the United States Green Building Council as having the knowledge and skills necessary to participate in the design process, to support and encourage integrated design, and to streamline the LEED project application and certification process.

## LEED Checklist

The credit and point checklists developed by the Leadership in Energy and Environmental Design Green Building Rating System to measure the sustainability, efficiency, and environmental soundness of a building.

## Low VOC

Volatile organic compounds (VOCs) are emitted as gases from certain solids or liquids, such as paints and lacquers, cleaning supplies, pesticides, building materials and furnishings. "Low VOC" and "no VOC" paints and products emit a lower concentration

of chemicals. High levels of VOCs can cause indoor air pollution, contributing to adverse health effects. See <http://www.epa.gov/iaq/voc.html> for more information.

### Mixed Use Building

A project which combines both commercial and residential uses, where the residential component is typically located above the commercial. See City Code, Section 19.36.170.

### New Construction

New buildings must meet all the applicable building and planning standards. Applicants must pay the planning fees for a development permit for a new building, and pay all applicable exaction fees for a new building.

### Photovoltaic

Photovoltaics, or PV for short, is a technology that converts light directly into electricity – otherwise known as solar energy. Photovoltaic cells are commonly placed on panels and placed on the roofs of buildings to generate solar energy rather than using non-renewable resources.

### Public Buildings

Buildings owned by the City of West Hollywood, or other government agencies and branches, such as the Fire Department or Sheriff's station. Under the ordinance, all new public buildings must receive LEED certification.

### Recycle

Reusable domestic containers and other materials which can be reconstituted, remanufactured, or reused in an altered form – including gas, metals, paper, and plastic. Recyclable material does not include refuse or hazardous materials.

### Remodel, Major

A major remodel would be considered a “new project” or “new construction” with the removal of 50% or more of the exterior wall area (which includes walls, doors, and windows) or the removal of 50% or more of the supporting members of a structure (e.g. beams, bearing walls, columns or girders) whichever is more restrictive” according to the definition of Major Remodels in section 19.90.020 in the West Hollywood Zoning Code. The same language is repeated in Section 19.48.020 under Development Permits.

**Note:** Degenerative processes that weakened a building structural integrity, such as rotting, termite damage or deficiencies of construction do not constitute grounds for an exemption from the

50% rule. Such remodeling can meet the standards of the zone clearance.

### Remodel and/or Tenant Improvement

A remodel or tenant improvement is an upgrade to the building interior without altering to any degree the structural integrity of the building. Remodeling may include the replacement of exterior walls according to the requirements of the Building Code provided that such remodeling can meet the standards of the zone clearance.

### USGBC

The United States Green Building Council is a non-profit organization that developed the LEED Green Building Rating system. See [www.usgbc.org](http://www.usgbc.org) for more information.

### Xeriscaping

Xeriscaping is creative landscaping for water and energy efficiency, comprised of seven sound horticultural principles: (1) good landscaping planning and design; (2) appropriate turf area; (3) efficient irrigation; (4) use of soil amendments; (5) use of mulches; (6) incorporation of low water use plants into the landscape; and (7) appropriate maintenance of plants and irrigation systems. Specific Xeriscaping standards are part of the point system and required green elements.

### Yard

The area between the lot line and a setback, unobstructed and unoccupied from the ground upward, except for the projections permitted by the Zoning Ordinance.

### Zone Clearance

A ministerial certificate issues by the department prior to issuance of any building permit to ensure that the proposed use and/or construction complies with all of the provisions of the Zoning Ordinance.

# FORMS

The applicable forms needed or required for submittal are below. The staff at the Planning Counter can help applicants determine what permits forms are needed and what types of projects require a zone clearance.

FORM	REQUIRED	OPTIONAL
checklist of 18 mandatory green design elements	X	-
green sheet or LEED checklist	X	-
materials substitution/interpretation form	-	X
selected incentive form	-	X

# POINT SYSTEM EXAMPLE

CATEGORY	GREEN DESIGN OR PRODUCT DESCRIPTION	POINTS AVAILABLE	POINTS REC'D	PAGE NUMBER ON PLANS
site location	Locate buildings close to existing services to reduce environmental impacts from transportation and fully utilize infrastructure. Preserve or restore existing natural resources or amenities on the site. Ensure that the building is equipped to support recycling, alternative transportation, water conservation and other operations components.			
	Preserve existing trees over 6" diameter (1 point/tree, 3 points max.).	1 to 3		
	Use recycled content mulch or other landscape amendments.	1		
<b>total points available</b>		<b>4</b>	<b>0</b>	
natural heating + cooling	Reduce energy loads while maintaining comfort through passive design strategies. Increase interior comfort and health through adequate ventilation.			
	Plant deciduous canopy trees (min. 36" box, planted in the ground) on exposed West and/or South elevations (1 point/tree, 5 points max.).	5		
	Provide narrow floor plates (max. 50 ft. depth) and/or courtyards to enable natural ventilation.	5		
	Provide operable windows to enable natural cross ventilation (min. 20%of total window area).	2		

CATEGORY	GREEN DESIGN OR PRODUCT DESCRIPTION	POINTS AVAILABLE	POINTS REC'D	PAGE NUMBER ON PLANS
natural heating + cooling	Install exterior shading devices on South- and/or West-facing windows.	2		
	Provide ceiling fans (1 point for each 50% of units or floor area served; 2 points max.).	2		
	Eliminate air conditioning (available only if points for narrow floor plates, operable windows, and exterior shading are incorporated).	2		
<b>total points available</b>		<b>19</b>	<b>0</b>	
foundation	Reduce resources used and encourage use of recycled-content materials.			
	Use recycled-content base or backfill material.	1		
	Incorporate fly ash or slag ash in concrete (min. 15%).	3		
	Increase fly ash percentage (1 point per additional 5%).	2		
<b>total points available</b>		<b>6</b>	<b>0</b>	
structural frame	Reduce the amount of old growth sawn wood (wider than 3x and taller than 8x) used in framing, encourage ecologically sensitive forestry, and encourage alternate framing techniques.			
	Use engineered lumber or steel for minimum of 90% of subfloors, sheeting, floor joists, beams, headers, and trusses, as applicable.	5		
	Use engineered vertical wood studs.	2		
	Use FSC-Certified wood for framing (1 point for every 10% of framing lumber; max. 5 points).	5		
	Use structural insulated panels (SIPs).	2		
<b>total points available</b>		<b>14</b>	<b>0</b>	
plumbing	Increase the water efficiency of plumbing fixtures and reduce energy used for water heating.			
	Insulate the full length of all hot water pipes.	1		

## Point System Example

CATEGORY	GREEN DESIGN OR PRODUCT DESCRIPTION	POINTS AVAILABLE	POINTS REC'D	PAGE NUMBER ON PLANS
<b>plumbing</b>	Install low-flow showerheads (< 2.5 gpm).	1		
	Install water efficient kitchen & bathroom faucets (<2.5 gpm).	1		
	Install water efficient toilets (dual-flush or <1.3 gpf).	1		
	Install water efficient urinals (1 point for 0.5 gpf, 2 points for water-free).	2		
	Install tankless water heaters.	2		
<b>total points available</b>		<b>8</b>	<b>0</b>	
<b>insulation</b>	Reduce energy losses through the building envelope and improve occupant comfort. Promote better indoor air quality. Increase use of recycled content and rapidly renewable materials.			
	Install formaldehyde-free, recycled-content (min. 25%) Insulation.	1		
	Install cellulose, cotton batt, bio-based foam in walls (min. 60% of insulation).	2		
	Install cellulose, cotton batt, bio-based foam in ceilings (min. 60% of insulation).	2		
<b>total points available</b>		<b>5</b>	<b>0</b>	
<b>energy efficiency + renewable energy</b>	Reduce climate change impacts of building operation by increasing overall building energy efficiency and generating renewable energy. Provide for the future installation of renewable energy systems.			
	Exceed Title 24 Energy Code by 5%.	5		
	Exceed Title 24 Energy Code by more than 5% (1 point for each additional 1% above 5% ; max. 15 points).	15		
	Participate in Energy Star (residential) or Savings By Design (commercial) programs.	3		

CATEGORY	GREEN DESIGN OR PRODUCT DESCRIPTION	POINTS AVAILABLE	POINTS REC'D	PAGE NUMBER ON PLANS
energy efficiency + renewable energy	Pre-plumb and provide conduit for solar water heating.	1		
	Install solar water heating system for domestic hot water.	2		
	Install solar water heating system for pool heating.	2		
	Install photovoltaic (PV) panels (1 point/kW ; max. 10 points).	10		
	Install Energy Star lighting (50% of total fixtures).	3		
	Install Energy Star exit signs.	1		
	Install Energy Star programmable thermostats.	1		
	Install timer or photo sensor for exterior lights.	1		
	Seal all ducts with mastic (residential) or install per SMACNA standards (commercial).	2		
	<b>total points available</b>		<b>45</b>	<b>0</b>
indoor air quality	Increase quality of indoor air by reducing exposure to toxic chemicals. Decrease concentration of toxins and dust through ventilation and filtration.			
	Use no-VOC paints on interior applications ( $\leq 5$ g/l).	2		
	Use low-VOC sealants and adhesives ( $\leq 50$ g/l).	2		
	Use composite wood with no added urea formaldehyde for counters and cabinets.	2		
	Use carpet certified by CRI Green Label program.	1		
	Eliminate the use of carpet.	2		
	Vent kitchen range hoods to the outside (min. 80% of units).	2		
	Install fan with humidistat sensor or timer in all bathrooms.	1		
Install high efficiency HVAC filters (min. MERV 8) or provide ductless system.	1			

## Point System Example

CATEGORY	GREEN DESIGN OR PRODUCT DESCRIPTION	POINTS AVAILABLE	POINTS REC'D	PAGE NUMBER ON PLANS
indoor air quality	Provide daylighting for 50% of occupied spaces.	1		
<b>total points available</b>		<b>14</b>	<b>0</b>	
<b>roofing</b>	Provide roofing materials that are durable, reduce resource use, minimize interior heat gain, provide storm water management, and reduce the urban heat island effect.			
	Use recycled-content roofing materials.	2		
	Install Energy Star or cool roof.	2		
	Install durable roof with long-term warranty or demonstrated long-term durability (40 year warranty for asphalt shingles, 15 year warranty for built-up roof, metal or clay tile).	3		
	Install extensive vegetated green roof (3 point/each 50% of roof not occupied by mechanical equip. or access stairs).	6		
<b>total points available</b>		<b>21</b>	<b>0</b>	
<b>exterior finish</b>	Encourage durable materials than do not require frequent maintenance.			
	Use durable exterior finishes (1 point/30% of exterior area) including integral-color or uncolored unpainted stucco, fiber-cement panels or siding, metal panels or siding, composite wood panel, glass, and other similar durable finishes.	3		
	Use recycled-content or FSC-Certified outdoor flooring materials.	1		
<b>total points available</b>		<b>4</b>	<b>0</b>	
<b>interior finish</b>	Reduce the use of natural resources, use rapidly renewable materials, and encourage ecologically sensitive forestry.			
	Use exposed concrete as finished floor (1 point/each 20%).	5		

CATEGORY	GREEN DESIGN OR PRODUCT DESCRIPTION	POINTS AVAILABLE	POINTS REC'D	PAGE NUMBER ON PLANS
<b>interior finish</b>	Use resource-efficient flooring or FSC-Certified wood flooring for all wood flooring (1 point/30% of floor area). Resource efficient includes rapidly renewable materials, recycled-content carpet or flooring tiles (min. 25% recycled content).	3		
	Use agriculture board, FSC-Certified, or rapidly renewable cabinetry material.	3		
	Use recycled-content countertop materials (min. 25% recycled content).	1		
<b>total points available</b>		<b>12</b>	<b>0</b>	
<b>innovative design</b>	Allow for innovation in design, building systems, and materials. Add additional green design principles through innovative approaches.			
<b>total points available</b>	TBD, 8 points max.	<b>8</b>	<b>0</b>	
<b>total points available</b>	<b>total points earned</b>		<b>0</b>	
	<b>mandatory points for compliance</b>		<b>60</b>	
	<b>points needed for incentives</b>	<b>160</b>	<b>90</b>	

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# NOTES

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