Site Strategy 1.1 Direct Development to Environmentally Appropriate Areas

Performance Indicator
1 point: The building is constructed on a site that is characterized as at least one of the following:

- previously developed land
- a remediated brownfield (see EPA's Brownfield Redevelopment Requirements)
- an existing minimum development density of 60,000 square feet per acre (2 story downtown development)

-AND-

2 points: A site is selected that avoids all of the following:

- Prime agricultural land as defined by the Farmland Trust
- Land with an elevation lower than 5 feet above the elevation of the 100-year flood as defined by the Federal Emergency Management Agency (FEMA)
- Land subject to erosion, wildfire, or landslides
- Habitat for any species on the Federal or State threatened or endangered list
- Land that is used as a wildlife corridor
- Wetland as defined by 40 Code of Federal Regulations (CFR), Parts 230-233, and Part 22

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Site Strategy 1.2 Maintain and Enhance the Biodiversity and Ecology of the Site

Performance Indicator
The development effectively integrates the building with the site in a manner that minimizes the impact on natural resources, while maximizing human comfort and social connections.

3 points: The development footprint enhances the existing biodiversity and ecology of the site by strengthening the existing natural site patterns and making connections to the surrounding site context. Apply all of the following:

• Select a site where the development process will cause minimum alteration and ecological disturbance.
• Design the site to reconnect fragmented landscapes and establish contiguous networks with other natural systems both within the site and beyond its boundaries.
• Avoid major alterations to sensitive topography, vegetation, and wildlife habitat.
• Preserve ecologically significant and/or sensitive vegetation, wildlife habitat, and topography.
• Minimize the area of the site dedicated to the building, parking, and access roads.
• Site the building to create traffic patterns that cause minimum site disruptions.
• Other appropriate issues.

-OR-

2 points: The development footprint, excluding the building(s), allows approximately 75% of the remaining biodiversity and ecology to remain, as determined spatially, by area measurement, of the existing conditions and surrounding site context.

-OR-

1 point: The development footprint, excluding the building(s), allows approximately 50% of the remaining biodiversity and ecology to remain, as determined spatially, by area measurement, of the existing conditions and surrounding site context.
## MINNESOTA SUSTAINABLE DESIGN GUIDE PROJECT HISTORY

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All rights reserved.
Site Strategy 1.3 Use Microclimate and Environmentally Responsive Site Design Strategies

Performance Indicator
The site and building are designed to respond to microclimate and environmental issues. Apply a minimum of three options to the project:

- Locate trees and shrubs to support passive heating and cooling in outdoor spaces and buildings, and to create seasonally appropriate heatsinks and natural ventilation corridors.
- Locate site features (walks, plazas, patios, etc.) to take advantage of seasonal sun angles, solar access, and solar orientation.
- Locate site elements at the appropriate elevation to maximize heating and cooling benefits, reduce erosion, ensure drainage, and to make pedestrian/vehicular movements safe and coherent.
- Design the overall site to reduce the “heat island” effect. Provide shade on at least 30% of non-roof impervious surfaces on the site (parking, walkways, plazas, etc.), use light colored high-albedo materials (with at least 30% reflectance), use high-reflectance roofing, and/or consider other related alternatives.
- Design site lighting to eliminate light trespass from the building and site and to minimize impact on nocturnal environments (see the Illuminating Engineering Society of North America Recommended Practice Manual: Lighting for Exterior Environments)
- Other appropriate issues.

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Site Strategy 1.4 Use Native Trees, Shrubs, and Plants

Performance Indicator
Native vegetation is used on the site to conserve water, reduce pesticide use, maintain a "sense of place," reduce plant mortality, and lower operational maintenance costs (see Resources for the Native Plant List of Minnesota).

1 point:
By species: A minimum of 75% of all species planted on the site are native to the local area
-And-
By quantity: A minimum of 75% of all trees and shrubs are native material.

1 point:
An integrated pest management system is used to reduce the need for chemical pest control and to reduce site toxicity.

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Site Strategy 1.5 Use Resource Efficient Modes of Transportation

Performance Indicator
Alternative forms of transportation to the automobile are included in the design of the site to reduce dependence on the automobile, reduce the amount of pavement impacting natural systems, and to allow for more ecologically responsive approaches to the site.

1 point: The building is located within 1/4 mile of bus lines or a light rail station, or within 1/4 mile of retail and public services.

1 point: Carpool parking is designed to encourage its use by occupants. Carpool parking, pick-up areas, and covered waiting spaces are clearly marked and within close proximity of the building entrance.

1 point: Alternative forms of transportation to the automobile are included in the design of the site to reduce dependence on the automobile, reduce the amount of pavement impacting natural systems, and to allow for more ecologically responsive approaches to the site.

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MINNESOTA SUSTAINABLE DESIGN GUIDE PROJECT HISTORY

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Water Strategy 2.1 Manage Site Water

Performance Indicator
3 points:

Stormwater: A stormwater management plan is implemented that meets or exceeds the best practice recommendations in the document “Protecting Water Quality in Urban Areas: Best Management Practices for Minnesota” (Minnesota Pollution Control Agency). Also apply all the options below that are appropriate to the project:

- Select a site that will require minimum alterations and ecological impacts to the watersheds.
- Develop design strategies that minimize disturbances to the watershed.
- Use biologically based stormwater management features such as swales; sediment control ponds, pools, and wetlands along drainage courses; and infiltration basins to retain and treat stormwater on site.
- Retain and/or maximize pervious and vegetated areas of the site.
- Minimize hardscapes and use permeable paving and surface materials to maximize site water absorption.
- Design pavements and locate them in such a manner as to reduce stormwater velocity between pavements and to facilitate water infiltration into the soil.
- Capture rainwater from impervious areas of the building for groundwater recharge or reuse in the building (see related Strategy 2.2).
- Design drainage to keep water away from the building.
- Other appropriate issues.

-AND-

1 point:
Irrigation and Specialty-use Water: Eliminate the need for irrigation through selection of drought resistant plant species and/or use systems that maximize efficient use of water in the landscape. Also apply all the options below that are appropriate to the project:

- Specify irrigation systems and vegetation that minimize water consumption.
- Use efficient irrigation systems (drip irrigation, moisture sensors, and weather data based controllers).
- Match system to water use.
- Use correct nozzles on irrigation heads.
- Use recirculating water in fountains and water displays.
- See related Strategy 2.2 for gray water irrigation systems.

-AND-

1 point:
Erosion Control: Meet or exceed the standard for erosion control measures outlined in “Protecting Water Quality in Urban Areas: Best Management Practices for Minnesota,” Minnesota Pollution Control Agency. Also apply all the options below that are appropriate to the project:

- Prevent soil erosion before, during, and after construction by controlling stormwater runoff and wind erosion. Consider silt fencing, sediment traps, construction phasing, stabilization of slopes, and maintaining and enhancing vegetation and groundcover.
- Protect hillsides using adequate erosion control measures such as hydro seeding, erosion control blankets, and/or sedimentation ponds to collect runoff.
### MINNESOTA SUSTAINABLE DESIGN GUIDE PROJECT HISTORY

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Water Strategy 2.2 Use Gray Water Systems

Performance Indicator
Gray water systems are used to reduce the use of potable water on the site and/or within the building. Use rainwater and/or gray water for non-potable water uses such as irrigation, toilets, vehicle washing, sewage transport, HVAC/process make-up water, etc. Technologies could include constructed wetlands, basins, and ponds; cisterns; a mechanical re-circulating sand filter; and gray water reclamation and plumbing systems.

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Water Strategy 2.3 Use Biological Waste Treatment Systems

Performance Indicator
A biological waste treatment system is used to reduce the volume of blackwater entering the municipal system. Alternatives include peat moss drain fields, constructed wetlands, aerobic treatment systems, solar aquatic waste systems (or living machines), and composting or ecologically-based toilets, etc.

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Water Strategy 2.4 Conserve Building Water Consumption

Performance Indicator
Design strategies and systems are used to exceed the building water conservation requirements of the Energy Policy Act (EPACT) of 1992 (not including irrigation). Apply all the options below that are appropriate to the project:

- Use infrared faucet sensors and delayed action shut-off or automatic mechanical shut-off valves.
- Use low flow toilets. EPACT requirement: 1.5 gallons per flush (GPF).
- Use lavatory faucets with flow restrictors for a maximum rate of .5 gallons per minute (GPM), or use metering faucets at 0.25 gallons per cycle. EPACT requirement: 2.5 GPM.
- Use low-flow kitchen faucets. EPACT requirement: 2.5 GPM.
- Use low-flow showerheads. EPACT requirement: 2.5 GPM.
- Use domestic dishwashers that use 10 gallons a cycle or less. Use commercial dishwashers (conveyor) which use 120 gallons per hour.
- Use waterless urinals.

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Water Strategy 2.5 Conserve Cooling Tower Water Consumption

Performance Indicator
If a cooling tower is used, select systems that maximize water conservation (i.e. automated blowdown systems, conductivity probes, deduct water meters, and delimiters to reduce drift and evaporation). Use discharge water for irrigation.

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Energy Strategy 3.1 Optimize Building Placement and Configuration for Energy Performance

Performance Indicator
The building is sited and configured to optimize passive solar opportunities for heating, cooling, and daylighting. Apply all of the options below that are appropriate to the project. Locate and orient the building and configure occupied spaces and openings:

- To maximize opportunities for daylighting and desired solar heat gain.
- To maximize passive solar gains and/or control unwanted solar heat gain (including the use of existing vegetation, land forms and buildings to provide shading).
- To minimize thermal losses due to wind-driven infiltration.
- To maximize opportunities for natural ventilation.

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Energy Strategy 3.2 Optimize Building Envelope Thermal Performance

Performance Indicator
The building envelope is designed to optimize thermal performance. Apply all of the options below that are appropriate to the project:

• Size openings, select glazing, and utilize shading devices (interior or exterior) to optimize daylighting and glare control while minimizing unwanted heat loss and heat gain. Glazing with a high Visible Transmittance (VT) is desirable for daylighting. Solar Heat Gain Coefficient (SHGC)/Shading Coefficient (SC) requirements depend on desire for maximizing passive solar heating (higher SHGC) or minimizing heat gain (lower SHGC). In colder climates, glazing with a low U-factor minimizes energy use and may reduce need for perimeter heating.

• Optimize insulation amounts to reduce heating and cooling energy consumption by heat losses or heat gains through the building envelope.

• Moderate interior temperature extremes by using thermal mass where appropriate.

• Ensure the integrity of the building envelope to provide thermal comfort and prevent condensation. Use best air/vapor barrier practices and avoid thermal bridging.

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Energy Strategy 3.3 Provide Daylighting Integrated with Electric Lighting Controls

Performance Indicator
The building is designed to maximize daylighting. Apply all of the options below that are appropriate to the project:

• Shape the architectural plan and section and use appropriate strategies to maximize the amount of useful, controlled daylight that penetrates into occupied spaces (roof monitors, clerestory windows, atriums and courtyards).
• Use shading devices such as overhangs on south elevations, vertical fins on east and west elevations, and/or vegetation to let in natural light but reduce glare and overheating.
• Use light shelves combined with higher, more reflective ceilings, to bring natural light deeper into perimeter spaces and control glare and excessive contrast.
• Select glazing with Visible Transmittance (VT) as high as possible to increase daylighting.
• Use photocell-dimming sensors that adjust electric lighting in response to available daylight.
• Other appropriate daylighting strategies and technologies.

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Energy Strategy 3.4 Provide Efficient Electric Lighting Systems and Controls

Performance Indicator
The electric lighting systems and components are designed for optimum efficiency and human comfort. Apply all of the options below that are appropriate to the project:

• Use high efficiency lamps and luminaires with electronic ballasts.
• Use controls to reduce energy use (e.g. dimmers, occupancy sensors, photocells, and time clocks).
• Use low levels of ambient light with task lighting where appropriate. Direct/indirect lighting fixtures illuminate ceilings and walls producing low level ambient light that minimizes glare in workplaces.

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Energy Strategy 3.5 Maximize Mechanical System Performance

Performance Indicator
The mechanical systems are designed to optimize energy performance. Apply all of the options below that are appropriate to the project:

- Use cogeneration (district or building scale) to reduce the environmental impact of total building energy use.
- Design boilers and chillers using high efficiency equipment, multiple modular boilers (to allow more efficient part-load operation), high efficiency condensing boilers, or gas heater/chillers.
- Modulate outside air according to occupancy, activities, and operations. Zone the building to use separate air handling units for areas with different hours of occupancy and loads. Use occupancy sensors and variable-air-volume distribution systems to minimize unnecessary heating or cooling.
- Use heat recovery systems, thermal storage (ice or water to reduce peak loads), and desiccant dehumidiﬁcation to reduce heating and cooling energy use.
- Use high efficiency motors and variable speed drives in the mechanical system equipment.
- Use zero CFC-based refrigerants in HVAC and refrigeration equipment. Complete a comprehensive CFC phaseout conversion.

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Construction Documents & Specifications Action Taken
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Specifications
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Construction Action Taken
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Commissioning Action Taken
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Energy Strategy 3.6 Use Efficient Equipment and Appliances

Performance Indicator
Efficient equipment and appliances are used to optimize energy efficiency. Apply all of the options below that are appropriate to the project:

- Use equipment with high efficiency motors and variable speed drives.
- Select new equipment and appliances that meet Energy Star criteria.
- Use efficient equipment to heat and supply service water to the building.

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Design Development Action Taken
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Construction Documents & Specifications Action Taken
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Specifications
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Construction Action Taken
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Commissioning Action Taken
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Energy Strategy 3.7 Use Renewable or Other Alternative Energy Sources

Performance Indicator
3 points: Supply 30% of the building’s total energy load through building-integrated or directly-connected renewable or other low impact energy systems.

2 points: Supply 20% of the building’s total energy load through building-integrated or directly-connected renewable or other low impact energy systems.

1 points: Supply 10% of the building’s total energy load through building-integrated or directly-connected renewable or other low impact energy systems.

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Construction Action Taken
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Commissioning Action Taken
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Energy Strategy 3.8 Integrate All Systems and Reduce Total Energy Use

Performance Indicator
A building energy analysis is conducted to evaluate and optimize the building energy performance.

12 points: Exceed the requirements of ASHRAE Standard 90.1-1989 and subsequent revisions by 50% or more.

9 points: Exceed the requirements of ASHRAE Standard 90.1-1989 and subsequent revisions by 40% or more.

6 points: Exceed the requirements of ASHRAE Standard 90.1-1989 and subsequent revisions by 30% or more.

3 points: Exceed the requirements of ASHRAE Standard 90.1-1989 and subsequent revisions by 20% or more.

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Specifications
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Construction Action Taken
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Commissioning Action Taken
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Interior Environmental Quality Strategy 4.1 Provide a Clean and Healthy Environment

**Performance Indicator**
A building energy analysis is conducted to evaluate and optimize the building energy performance.

1 point: Minimize air pollution from the building site by analyzing and/or testing to identify potential sources of air pollution using ASHRAE Standard 62-1989R.

-AND-

1 point: Work with the owner to eliminate as many pollutant-generating activities from the building as feasible. If they must occur within the building they should be zoned to an isolated area of the building having a separate ventilation system. See also related Strategy 5.6: Use Low VOC-emitting Materials.

-AND-

1 point: Clean the air with filtration systems that meet or exceed the efficiency ratings of ASHRAE Standard 52.2, "Method of Testing General Ventilation Air Cleaning Devices for Removal Efficiency by Particle Size."

Filters shall have a minimum efficiency rating of not less than MERV 6 when rated in accordance with ASHRAE Standard 52.2.

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Interior Environmental Quality Strategy 4.2 Control Moisture to Prevent Microbial Contamination

Performance Indicator
Where moisture precautions are needed, materials should be specified to discourage microbial growth. Mechanical systems are to be installed in compliance with ASHRAE recommendations for prevention of standing water (ASHRAE 62-1999, Ventilation Standards for Acceptable Indoor Air Quality, Part 5). Where a cooling tower has been used it is designed and installed to meet the most current recommendations and specifications for the prevention of Legionnaires Disease.

1 point: Moisture control is addressed on the site.

-AND-

1 point: Moisture control is addressed within the building envelope.

-AND-

1 point: Moisture control is addressed inside the building.

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Commissioning Action Taken
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Interior Environmental Quality 4.3 Strategy Provide Ample Ventilation for Pollutant Control and Thermal Comfort

Performance Indicator
Strategies are used to provide appropriate ventilation and thermal comfort.


-AND-

1 point: Carbon dioxide detectors are used to assess air quality and air ventilation rates.

-AND-

1 point: Air intakes are separated from pollution sources with a minimum separation distance to minimize risk of capture of contaminated air.

-AND-

1 point: Ducted returns are used within the building and internal duct insulation is eliminated.

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Interior Environmental Quality Strategy 4.4 Provide Appropriate Thermal Conditions

Performance Indicator
The ASHRAE Standard 55, Thermal Environmental Conditions for Human Occupancy, is used as the design criteria to ensure appropriate thermal conditions. The thermal design addresses environmental and seasonal considerations for dry bulb temperature and radiant temperature profile, relative humidity, and occupants' activities and modes of dress.

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Commissioning Action Taken
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Interior Environmental Quality Strategy 4.5 Provide Effective Lighting

Performance Indicator
1 Point:
Illuminance Levels: Design strategies and features are used to ensure that the Illuminance Levels and Luminance Ratios are appropriate for the users, activities and tasks. The Illuminating Engineering Society of North America (IESNA) Recommended Illuminance Categories and Weighting Levels are used to determine appropriate illuminance levels for different activities and users.

-AND-

1 point
Color Temperature: Design Strategies and features are used to ensure that color temperature, color rendering, and modeling of light are appropriate for the users, activities and tasks.

-AND-

1 point:
Glare: Design strategies and features (e.g. selection of lighting fixtures, installations, and controls) are used to avoid glare and veiling reflections and render the environment in ways that support the program, user purposes, and preferences.

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Interior Environmental Quality Strategy 4.6 Provide Appropriate Building Acoustical and Vibration Conditions

Performance Indicator
1 point:
Vibrations: Design features and strategies are used to control sources of externally and internally induced vibrations from wind loads, passing traffic, interior foot traffic, building HVAC systems, and interior machinery.

-AND-

1 point:
Noise Control: Design features and strategies are used to control sources of noise from mechanical and electrical equipment and from sources exterior to the building. Wall assemblies have been selected with appropriate Sound Transmission Class (STC) ratings based on the conditions of the site, building program and activities. Noise elimination, control, or isolation from equipment should be addressed through acoustic zoning, equipment selection, construction, and appropriately designed ducts, piping, and electrical systems.

-AND-

1 point:
Soundscapes:
Design features and strategies are to create appropriate sound reverberation levels, background sound levels, sound rendition, and speech interference levels so as to produce the proper 'soundscape' for the building program and expected variations in user activities.

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Construction Action Taken
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### MINNESOTA SUSTAINABLE DESIGN GUIDE PROJECT HISTORY

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Interior Environmental Quality Strategy 4.7 Provide Views, Viewspace, and Connection to Natural Environment

Performance Indicator

2 points:
Exterior and Interior Views: Design strategies are used to provide windows, skylights, and/or clerestories for outside view access from all work areas or regularly occupied spaces or to provide contact with patterns and textures of the natural world through interior recreations (e.g. atria, plazas, gardens, courtyards, plantings, and similarly restorative interior design treatments).

-AND-

1 point:
Viewspaces: Design features and strategies are used to create connected interior and exterior viewspaces which provide the proper combinations of spaciousness, privacy, personal security, visual relief, and visual access to routes and settings within and to the outside of the building.

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Construction Documents & Specifications Action Taken
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Specifications
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Construction Action Taken
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Commissioning Action Taken
(N/A)
**Materials Strategy 5.1 Use Materials with Low Environmental Impact During their Life-Cycle**

**Performance Indicator**

Materials are evaluated using a life-cycle methodology (such as Athena or BEES assessment tools) focusing on those used in large quantities or with significant negative environmental impact.

<table>
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**Construction Documents & Specifications Action Taken**

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**Construction Action Taken**

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**Commissioning Action Taken**

(N/A)
Materials Strategy 5.2 Use Salvaged and Remanufactured Materials

Performance Indicator
Salvaged and/or remanufactured materials are used to conserve embodied energy and reduce the consumption of natural resources.

1 point:  
Salvaged Materials: For new construction, 10% of total percentage of products or materials are salvaged building materials or equipment. For renovations, 10% of total number of products or materials used are existing materials or equipment or salvaged materials from an off-site source.

-AND-

1 point:  
Remanufactured Materials: For new construction, 10% of total percentage of products or materials are remanufactured building materials or equipment. For renovations, 10% of total percentage of products or materials used are existing materials or equipment or remanufactured materials from an off-site source.

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**Commissioning Action Taken**  
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Materials Strategy 5.3 Use Recycled Content Products and Materials

Performance Indicator
50% of the total percentage of products or materials contain at least 10% post-consumer recycled content or a minimum of 50% post-industrial recycled content.

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Commissioning Action Taken
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Materials Strategy 5.4 Use Materials from Renewable Sources

Performance Indicator
10% of the total percentage of products or materials are from renewable raw sources (e.g. certified wood, wheat, cotton, cork, bamboo, etc.).

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Commissioning Action Taken
(N/A)
Materials Strategy 5.5 Use Locally Manufactured Materials

Performance Indicator
25% of the total percentage of products or materials are manufactured within 500 miles of the project site.

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<thead>
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Commissioning Action Taken
(N/A)
Materials Strategy 5.6 Use Low VOC-emitting Materials

Performance Indicator
Low or no VOC-emitting materials are used to ensure good indoor air quality. Meet all of the following criteria:

- At a minimum all adhesives and sealants must meet VOC limits of the South Coast Rule #1168 of the South Coast Air Quality Management District.
- At a minimum, all paints, coatings, carpet, and furniture systems must meet the requirements of State of Washington Department of General Administration Indoor Air Quality Compliance Table.
- Carpets must conform to the Carpet and Rug Institute and the Environmental Protection Agency (EPA) VOC emission rate of 0.5 milligrams per square meter per hour.
- Material Safety Data Sheets (MSDS) for all materials contributing significantly to indoor air quality are submitted.

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Materials Strategy 5.7 Use Durable Materials

Performance Indicator
50% of the total percentage of products or materials are durable with a life cycle of at least 50 years.

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Commissioning Action Taken
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Materials Strategy 5.8 Use Materials that are Reusable, Recyclable or Biodegradable

Performance Indicator
Reusable, recyclable, and biodegradable materials are used to conserve embodied energy and reduce the consumption of natural resources.

2 points: 60% of the total materials are reusable, recyclable, or biodegradable.

-OR-

1 point: 30% of the total materials are reusable, recyclable, or biodegradable.

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Commissioning Action Taken
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Waste Strategy 6.1 Reuse Existing Buildings

Performance Indicator
The existing building’s floor area is reused.

3 points: Total reuse of existing building

-OR-

2 points: Substantial reuse of existing building

-OR-

1 point: Modest reuse of existing building

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Commissioning Action Taken
(N/A)
Waste Strategy 6.2 Design for Less Material Use

Performance Indicator
Design strategies are employed to use less materials, including reducing the size of the building and spaces; eliminating unnecessary structural, architectural, and finish materials; using modular and standard dimensioning; and using strategies that decrease waste during construction.

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Waste Strategy 6.3 Design Building for Adaptability

Performance Indicator
Interior or exterior design options are incorporated into the project to facilitate building adaptability. Apply the options that are appropriate to the project:

- Consider site planning and building configuration to accommodate future additions and alterations.
- Plan for maximum standardization or repetition of building elements and details to increase the ease of adapting the structure for future alterations or upgrades.
- Design cladding to accommodate future alterations and upgrades such as shading devices, more efficient glazing, and lighting controls.
- Design cladding systems that are fixed by snap release connectors, friction, or other joints that do not require sealants. Use joints and connections that facilitate adaptability, including bolts, screws, and clips.
- Consider spatial configurations, floor deck, structure, mechanical and ceiling options to facilitate adaptability (13-14’ maximum is common).
- Use a sandwich space between the ceiling to floor level for structure, sprinklers, supply and return ductwork, lighting fixtures, and ceiling system (allowing the space to be more easily altered).
- Use raised floor systems for power and telecommunications wiring to accommodate reconfiguration of spaces and information technology support.
- Use modular space planning, partitions, and furnishings.
- Consider other relevant design strategies.

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Construction Documents & Specifications Action Taken
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Specifications
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Construction Action Taken
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Commissioning Action Taken
(N/A)
Waste Strategy 6.4 Design Building for Disassembly

Performance Indicator
Interior or exterior design options are incorporated into the project to facilitate building disassembly. Apply the options that are appropriate to the project:

- Use structural systems, cladding systems, and non-load bearing wall systems that facilitate disassembly.
- Use structure/shell systems that maintain integrity when demounted or disassembled (i.e. steel, glass, or concrete and panel claddings).
- Use materials, systems, and components that can be recycled or reused in whole or in part.
- Use materials that are durable, weather well, and last more than one building lifetime (including masonry, steel, glass, and some timber products such as beams, columns, floorboards, etc.).
- Use materials, systems, and components that can be assembled or fastened in a manner that facilitates reassembly into new construction or remodeling.
- Use snap release connectors, friction, or other joints which do not require sealants. Use joints and connections that facilitate disassembly, including bolts, screws, and clips.
- Use homogeneous materials rather than composite materials, as they are easier to separate and recycle. Avoid materials that are composites such as reinforced plastics and carpets fibers and backing which are generally more difficult to recycle than homogeneous materials.
- Use modular systems and materials to facilitate deconstruction and reuse of building materials.
- To facilitate recycling, consider labeling building materials with identification information.
- Consider other relevant design strategies.

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Construction Action Taken
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(N/A)
Waste Strategy 6.5 Salvage and Recycle Demolition Waste

Performance Indicator
80% by volume of demolition waste is diverted from landfill through salvage, recycling and/or recovery.

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Commissioning Action Taken
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Waste Strategy 6.6 Recycle Construction Waste

Performance Indicator
75% by volume of waste from construction is diverted from landfills through recycling and/or recovery.

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Construction Documents & Specifications Action Taken
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Specifications
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Construction Action Taken
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Commissioning Action Taken
(N/A)
### Waste Strategy 6.7 Reduce and Recycle Packaging Waste

**Performance Indicator**
50% of all packaging material, by weight, is reused or returned to suppliers or manufacturers.

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**Specifications**
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**Construction Action Taken**
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**Commissioning Action Taken**
(N/A)
Waste Strategy 6.8 Reduce and Recycle Waste from Building Users

Performance Indicator
Dedicated recycling facilities are provided for storage and handling of aluminum, glass, plastic, white and mixed paper and cardboard.

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**Specifications**
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**Commissioning Action Taken**
(N/A)
Waste Strategy 6.9 Reduce and Properly Dispose of Hazardous Waste

Performance Indicator
Dedicated space is provided for the storage of hazardous waste materials during building operations (e.g. fluorescent and HID lamps, medical waste, cleaning products, etc.) and appropriate handling of hazardous waste is addressed during building construction, renovation, or decommissioning (e.g. asbestos, lead, refrigerants, CFC's HFC's, etc.).

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