

LEED Building Design and Construction

Activity #4 – Sustainable Sites (SS)

Before completing this Activity Read: Reference Guide for Building Design and Construction v4 – Pages 136-255

Note the following abbreviations are used in this activity:

NC	LEED BD+C: New Construction and Major Renovation
CS	LEED BD+C: Core and Shell Development
S	LEED BD+C: Schools
R	LEED BD+C: Retail
DC	LEED BD+C: Data Centers
WDC	LEED BD+C: Warehouses and Distribution Centers
HOS	LEED BD+C: Hospitality
HC	LEED BD+C: Healthcare

Although the LEED BD+C reference guide does not number the LEED prerequisites and credits, for this exercise they have been numbered in the order presented in the credit category.

Fill-In, Multiple Choice, Matching

1. Test your knowledge of how well you know the names of the credits for the Sustainable Sites (SS) credit category:

LEED BD+C: NC, CS, S, R, DC, WDC, HOS, HC	
Credit	Name
P1	
C1	
C2	
C3	
C4	
C5	
C6	
LEED BD+C: Core and Shell Development	
C7	
LEED BD+C: Schools	
P2	
C7	
C8	
LEED BD+C: Healthcare	
P2	
C7	
C8	

2. Match the intent shown below to the prerequisite or credit:

LEED BD+C: NC, CS, S, R, DC, WDC, HOS, HC

Credit	ANS
SS – P1	
SS – C1	
SS – C2	
SS – C3	
SS – C4	
SS – C5	
SS – C6	
LEED BD+C: CS	
SS – C7	
LEED BD+C: S	
SS – P2	
SS – C7	
SS – C8	
LEED BD+C: HC	
SS – P2	
SS – C7	
SS – C8	

	INTENT
A	To assess site conditions before design to evaluate sustainable options and inform related decisions about site design.
B	To protect the health of vulnerable populations by ensuring that the site is assessed for environmental contamination and that any environmental contamination has been remediated.
C	To provide patients and staff with the health benefits associated with direct access to the natural environment.
D	To minimize effects on microclimates and human and wildlife habitats by reducing heat islands.
E	To reduce runoff volume and improve water quality by replicating the natural hydrology and water balance of the site, based on historical conditions and undeveloped ecosystems in the region.
F	To integrate the school with the community by sharing the building and its playing fields for nonschool events and functions.
G	To increase night sky access, improve nighttime visibility, and reduce the consequences of development for wildlife and people.
H	To conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity.
I	To educate tenants in implementing sustainable design and construction features in their tenant improvement build-outs.
J	To provide patients, staff, and visitors with the health benefits of the natural environment by creating outdoor places of respite on the healthcare campus.
K	To reduce pollution from construction activities by controlling soil erosion, waterway sedimentation, and airborne dust.
L	To create exterior open space that encourages interaction with the environment, social interaction, passive recreation, and physical activities.
M	To ensure that the sustainable site benefits achieved by the project continue, regardless of future changes in programs or demographics.

Minimizing _____ track-out
Controlling _____ from _____ sediment or soil
Minimizing _____
Minimizing the _____ of _____ slopes
Preserving _____
Minimizing soil _____
Protecting _____
Maintaining _____ measures

Section 2.2, stabilization

Deadlines for _____ and _____ stabilization
Criteria for _____

Section 2.3, pollution prevention

Prohibited _____
General _____ requirements
Pollution _____ standards
_____ spill notification
_____ discharge restrictions

16. Track implementation of the ESC plan by keeping _____ records or date-stamped photographs. A _____ description of ESC plan implementation should include the following:
_____ of the _____ of the _____
Specific _____ measures applied on site
_____ protocols used to ensure the proper function of control measures

17. SS Prerequisite Environmental Site Assessment applies to _____ and _____.

18. SS Prerequisite Environmental Site Assessment requires:
Conduct a Phase ___ Environmental Site Assessment as described in ASTM _____ (or a local equivalent) to determine whether environmental contamination _____ at the site. If contamination is _____, conduct a Phase _____ Environmental Site Assessment as described in _____ (or a local equivalent).

If a site is _____, _____ the site to meet local, state, or national environmental protection agency region _____ (unrestricted) standards, whichever are most _____.

19. Abbreviation Name
ESA _____

20. ASTM Standard _____, Section 4.8, considers a Phase I ESA valid for _____ days.

21. If a Phase I ESA is more than _____ year old, a _____ assessment is required.

22. EPA's residential (unrestricted) use standards represent the most _____ level of cleanup; local equivalent standards must have a similar level of rigor. After remediation, land use must be suitable for _____, _____, or _____ use.

23. A Phase I environmental site assessment (ASTM E1527-05) is a _____ survey that identifies _____ or _____ site contamination.

24. A Phase II ESA (ASTM E1903–11) involves collection and testing _____, _____, _____, and building _____ samples to determine whether and how much contamination exists on the site.
25. SS Credit Site Assessment requires:
 Complete and document a _____ or _____ that includes the following information:
- _____. Contour mapping, unique topographic features, slope stability risks.
 - _____. Flood hazard areas, delineated wetlands, lakes, streams, shorelines, rainwater collection and reuse opportunities, TR-55 initial water storage capacity of the site (or local equivalent for projects outside the U.S.).
 - _____. Solar exposure, heat island effect potential, seasonal sun angles, prevailing winds, monthly precipitation and temperature ranges.
 - _____. Primary vegetation types, greenfield area, significant tree mapping, threatened or endangered species, unique habitat, invasive plant species.
 - _____. Natural Resources Conservation Service soils delineation, U.S. Department of Agriculture prime farmland, healthy soils, previous development, disturbed soils (local equivalent standards may be used for projects outside the U.S.).
 - _____. Views, adjacent transportation infrastructure, adjacent properties, construction materials with existing recycle or reuse potential.
 - _____. Proximity of vulnerable populations, adjacent physical activity opportunities, proximity to major sources of air pollution.
26. The survey or assessment should demonstrate the _____ between the site _____ and topics listed above and how these features influenced the project _____; give the reasons for _____ addressing any of those topics.
27. Performing a site assessment is part of an _____ design process that incorporates a site's _____ and _____ contexts.
28. List the information that the assessment team should collect:
- 1.
 - 2.
 - 3.
 - 4.
29. Plan to complete the assessment before _____ design starts because the findings will inform the _____ and _____ of major program elements.
30. List the information that should be documented for the project site's trees:
- 1.
 - 2.
 - 3.
 - 4.
 - 5.
31. The site inventory should include such man-made features as _____, _____, _____, and existing _____.

32. List the high, low, and average monthly climate indicators:

- 1.
- 2.

33. List examples of unique or significant topographical features that could be found on a site:

- 1.
- 2.
- 3.

34. A sustainable approach to _____ management involves finding ways to _____ it on site for _____ and other water uses, create beneficial water _____, prevent _____ overflows, and _____ the _____ and _____.

35. List the environmental services of site vegetation:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

36. List the site vegetation whose location and type must be inventoried:

- 1.
- 2.
- 3.

37. Healthy soils allow natural rainwater _____, which helps prevent _____, _____, _____, and _____. Soils also aid in cleaning, storing, and _____ groundwater.

38. Document the _____, _____, and _____ known uses surrounding the site to establish a context for human use. Include the location and condition of on-site buildings and infrastructure.

39. Research indicates that the _____ environment plays a very important role in human _____ and _____.

40. Identify opportunities for _____ activity on or _____ to the site, such as _____, _____, _____, and _____.

41. View corridors, transportation infrastructure, and adjacent properties, for example, may indicate the best _____ of buildings.

42. Technical Release (TR) 55 an approach to _____ in which watersheds are modeled to calculate storm runoff _____, _____, hydrographs, and storage _____, developed by the former USDA Soil Conservation Service
43. SS Credit Site Development – Protect or Restore Habitat requirements:
Preserve and protect from all development and construction activity _____ of the _____ area on the site (if such areas exist).

AND

Option 1. On-Site Restoration (2 points except Healthcare, 1 point Healthcare)

Using _____ or _____ vegetation, restore _____ (_____ the building footprint) of all portions of the site identified as _____ developed. Projects that achieve a density of _____ floor-area ratio may include vegetated _____ surfaces in this calculation if the plants are native or adapted, provide _____, and promote biodiversity.

Restore all disturbed or compacted soils that will be _____ within the project's _____ to meet the following requirements:

- Soils (_____ and _____) must be reused for functions comparable to their original function.
- Imported _____ or soil blends designed to serve as topsoil may not include the following: soils defined regionally by the Natural Resources Conservation Service web soil survey (or local equivalent for projects outside the U.S.) as _____ farmland, _____ farmland, or farmland of statewide or local importance; or soils from other _____ sites, unless those soils are a byproduct of a construction process.
- Restored soil must meet the criteria of reference soils in categories 1–3 and meet the criteria of either category 4 or 5:
 1. _____ matter;
 2. _____;
 3. _____ rates;
 4. soil _____ function; and
 5. soil _____ characteristics.

Project teams may _____ vegetated landscape areas that are constructed to accommodate _____ from the vegetation and soils requirements, provided all such rainwater infiltration areas are treated consistently with SS Credit Rainwater Management.

Schools only

Dedicated _____ fields that are _____ for athletic uses are _____ from the soil restoration criteria. These areas may _____ count toward the minimum required area.

OR

Option 2. Financial Support (1 point)

Provide _____ support equivalent to at least _____ per square foot (US\$4 per square meter) for the total site area (_____ the building footprint).

Financial support must be provided to a _____ or _____ recognized land _____ or _____ organization within the same EPA Level III ecoregion or the project's state (or within _____ miles of the project [160 kilometers] for projects outside the U.S.). For U.S. projects, the land trust must be accredited by the _____.

44. _____ are areas that have not been previously _____, _____, or _____ and that support (or could support) _____, _____, or natural _____.
45. Building _____ can significantly reduce a building _____ while increasing site _____.
46. If the project meets the floor-area ratio (FAR) density minimum, _____ roofs may be considered part of the _____ area (see Further Explanation, Vegetated Roofs).
47. Restoration must use _____ or _____ vegetation.
48. List examples of uses that disturb soil:
- 1.
 - 2.
 - 3.
 - 4.
 - 5.
49. Lawns (_____ grasses) qualify as _____ vegetation only if they are able to survive without _____, _____, _____, and _____.
50. Any _____ damaged or destroyed as a result of construction must be _____ or _____.
51. If the _____ of the project and the roof vegetation meet the credit requirements, the _____ roof may be counted toward the overall _____ area calculation.
52. List the characteristics of compost that could be used to enhance the site soil's ability to support vegetation:
- 1.
 - 2.
 - 3.
53. _____ must be taken from soils that are _____ or _____ and will be _____. (Soils that will not be revegetated can be excluded from the test.)
54. List examples of documentation narratives:
- 1.
 - 2.
 - 3.
 - 4.
 - 5.
 - 6.
55. Exemplary Performance
- Option 1. _____ the _____ restoration requirement (restore at least _____).
- Option 2. _____ the financial donation requirement (provide at least _____ per square foot or \$8.00 per square meter).

56. SS Credit Open Space requirements:

Provide outdoor space greater than or equal to _____ of the total site area (including building footprint). A minimum of _____ of that outdoor space must be vegetated (turf grass does not count as vegetation) or have overhead vegetated canopy.

The outdoor space must be _____ accessible and be one or more of the following:

- a _____-oriented paving or turf area with physical site elements that accommodate outdoor social activities;
- a _____-oriented paving or turf area with physical site elements that encourage physical activity;
- a _____-space with a diversity of vegetation types and species that provide opportunities for year-round visual interest;
- a _____-space dedicated to _____-gardens or urban food production;
- _____ or _____ habitat that meets the criteria of SS Credit Site Development—Protect or Restore Habitat and also includes elements of _____ interaction.

For projects that achieve a density of _____ floor-area ratio (FAR), and are _____ accessible, _____ or _____ vegetated roofs can be used toward the minimum _____ vegetation requirement, and qualifying roof-based physically accessible paving areas can be used toward credit compliance.

_____ or naturally designed _____ may count as open space if the side slope gradients average _____ (vertical : horizontal) or less and are _____.

For projects that are part of a multitenant complex only

Open space can be either _____ to the building or at _____ location in the site _____ plan. The open space may be at another master plan development site as long as it is _____ from development. If the open space is not adjacent to the building, provide documentation showing that the requirements have been met and the land is in a natural state or has been returned to a natural state and _____ for the _____ of the building.

57. List the environmental benefits of open spaces:

- 1.
- 2.
- 3.
- 4.

58. List examples of open spaces with qualities that support the environmental goals of SS Credit Open Space:

- 1.
- 2.
- 3.
- 4.

59. _____ areas, including areas of turf grass under overhead tree canopies, _____ be counted in total open space but do not qualify as _____ open space.

60. Extensive or intensive _____ roofs can be used toward the minimum _____ vegetation requirement. Vegetated roof area can also be counted as open space if it is _____ to the building occupants and the project has a density of _____ FAR or greater. Roofs can be either _____ or _____ systems.

61. Design open spaces for the specific project location. For example, a _____ area might be appropriate in _____ locations.

62. _____ turf does _____ count as _____ or _____.

63. SS Credit Rainwater Management requirements:

Option 1. Percentile of Rainfall Events

Path 1. _____th Percentile (___ points except Healthcare, 1 point Healthcare)

In a manner best replicating _____site hydrology processes, manage on site the _____ from the developed site for the _____th percentile of _____ or local rainfall events using _____(LID) and _____.

Use _____ rainfall data and the methodology in the U.S. Environmental Protection Agency (EPA) Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act to determine the _____th percentile amount.

Or

Path 2. _____th Percentile (___ points except Healthcare, 2 points Healthcare)

Achieve Path 1 but for the _____th percentile of regional or local rainfall events, using LID and green infrastructure.

Or

Path 3. _____ Lot Line projects only—_____th Percentile (3 points except Healthcare, 2 points Healthcare)

The following requirement applies to zero lot line projects in _____ areas with a minimum density of _____ FAR. In a manner best replicating natural site hydrology processes, manage on site the runoff from the developed site for the _____th percentile of regional or _____ rainfall events, using LID and green infrastructure.

OR

Option 2. Natural Land Cover Conditions (3 points except Healthcare, 2 points Healthcare)

Manage on site the _____ increase in runoff _____ from the _____ land cover condition to the _____ condition.

Projects that are part of a multitenant complex only

The credit requirements may be met using a _____ approach affecting the defined project site that is within the _____ plan boundary. Distributed techniques based on a _____ approach are then required.

64. Conventional site development disrupts natural hydrological systems and watersheds through _____ surfaces, soil _____, loss of _____, and loss of natural _____ patterns.

65. Abbreviation

Name

GI

LID

66. Rainwater is treated as a _____ rather than a _____ product.

67. Collect at least _____ years of historical _____ data, or as much historical data as possible from all _____ to account for seasonal variability.
68. Calculate the total _____ of runoff (in cubic feet or cubic meters) corresponding to the _____th percentile of rainfall events for the site in its _____ condition.
69. Runoff _____ depends on the specific _____ site conditions of the project, such as amount of _____, _____ of different surfaces, _____ area, and _____ areas.
70. List methods for managing the total runoff volume:
- 1.
 - 2.
 - 3.
71. The typical _____ lot line project is an _____ site for which the building _____ aligns with the _____ limits and the _____ project boundary.
72. Calculate the _____ density of the area within a _____ (400-meter) _____ of the project building. If the density, expressed in terms of floor-area ratio (FAR) is less than _____, the project is _____ for the zero lot line path.
73. Exemplary Performance, Manage _____ of rainwater that falls within the project boundary.
74. SS Credit Heat Island Reduction requirements:
Choose one of the following options:

Option 1. Nonroof and Roof (2 points except Healthcare, 1 point Healthcare)

Meet the following criterion:

Complete the Equation:

Area of Nonroof Measures	Area of High- Reflectance Roof	Area of Vegetated Roof	+ + + ≥	Total Site Paving Area	+ Total Roof Area
_____	_____	_____			

Alternatively, an _____ and _____ weighted average approach may be used to calculate compliance.

Use any combination of the following strategies.

Nonroof Measures

Use the existing plant material or install plants that provide _____ over paving areas (including playgrounds) on the site within _____ years of planting. Install vegetated _____. Plants must be in place at the time of _____ permit and cannot include _____ turf.

Provide shade with _____ covered by _____ generation systems, such as solar thermal _____, _____, and _____ turbines.

Provide shade with _____ devices or structures that have a _____ aged solar reflectance (SR) value of at least _____. If three-year aged value information is not available, use materials with an initial SR of at least _____ at installation.

Provide _____ with vegetated structures.

Use _____ materials with a three-year aged solar reflectance (SR) value of at least _____. If three-year aged value information is not available, use materials with an initial SR of at least _____ at installation.

Use an _____ pavement system (at least _____ unbound).

High-Reflectance Roof

Use roofing materials that have an _____ equal to or greater than the values in Table 1. Meet the three-year aged SRI value. If three-year aged value information is not available, use materials that meet the initial SRI value.

Complete Table 1. Minimum solar reflectance index value, by roof slope

Table 1. Minimum solar reflectance index value, by roof slope			
	Slope	Initial SRI	3-year aged SRI
Low-sloped roof	≤ 2:12		
Steep-slope roof	> 2:12		

Vegetated Roof

Install a _____ roof.

OR

Option 2. Parking under Cover (1 point)

Place a minimum of _____ of parking spaces under _____. Any roof used to shade or cover parking must (1) have a three-year aged SRI of at least _____ (if three-year aged value information is not available, use materials with an initial SRI of at least _____ at installation), (2) be a _____ roof, or (3) be covered by _____, such as solar thermal collectors, photovoltaics, and wind turbines.

75. List examples of a project site's hardscape:

- 1.
- 2.
- 3.
- 4.

76. _____ areas can have temperatures 1.8° to 5.4°F (1° to 3°C) _____ than surrounding suburban and _____ areas, and as much as 22°F (12°C) warmer in _____.

77. Additionally, _____ increase _____ loads in the summer, necessitating larger, more powerful _____ that use more _____, in turn _____ cooling costs, producing more _____ gases, and generating pollution.

78. The most effective measure of a roofing material's ability to _____ solar heat is the _____ (SRI). However, to measure the solar heat rejection of components that are not roofing materials, or "nonroof"—for example, vegetation, shading devices, and other less reflective components—_____ (SR) is used in this credit instead. _____ is a more appropriate way to measure _____ materials, which have more _____ mass.

79. Hardscape area includes all _____, _____, _____, and _____ lots.
80. Applicable roof area excludes roof area covered by _____ equipment, solar energy _____, _____, and any other _____.
81. Read about extensive and intensive green roofs here, <http://www.greenrooftechnology.com/green-roof-types>
82. SS Credit Light Pollution Reduction requirements:
Meet _____ and light _____ requirements, using either the backlight-uplight-glare (_____) method (Option 1) or the _____ method (Option 2). Projects may use different options for _____ and light _____.

Meet these requirements for all _____ luminaires located inside the project _____ (except those listed under "Exemptions"), based on the following:
the photometric characteristics of each luminaire when mounted in the same _____ and _____ as specified in the project design; and
the lighting _____ of the project property (at the time construction begins). Classify the project under _____ lighting zone using the lighting zones definitions provided in the Illuminating Engineering Society and International Dark Sky Association (IES/IDA) Model Lighting Ordinance (MLO) User Guide.

Additionally, meet the internally illuminated signage requirement.

Abbreviation	Name
BUG	_____
MLO	_____

Uplight

OPTION 1. BUG Rating Method

Do not exceed the following luminaire uplight ratings, based on the specific light source installed in the luminaire, as defined in _____, Addendum A.

Complete Table 1. Maximum uplight ratings for luminaires

MLO lighting zone	Luminaire uplight rating

OR

OPTION 2. Calculation Method

Do not exceed the following percentages of total _____ emitted above _____.

Complete Table 2. Maximum percentage of total lumens emitted above horizontal, by lighting zones

MLO lighting zone	Maximum allowed percentage of total luminaire lumens emitted above horizontal

AND

Light Trespass

OPTION 1. BUG Rating Method

Do not exceed the following luminaire _____ and _____ ratings (based on the specific light source installed in the luminaire), as defined in IES TM-15-11, Addendum A, based on the _____ location and _____ from the lighting _____.

Complete Table 3. Maximum backlight and glare ratings

Luminaire mounting	MLO lighting zone				
	Allowed backlight ratings				
> __ mounting heights from lighting boundary	B1	B3	B4	B5	B5
__ to __ mounting heights from lighting boundary and properly oriented	B1	B2	B3	B4	B4
____ to __ mounting height to lighting boundary and properly oriented	B0	B1	B2	B3	B3
< ____ mounting height to lighting boundary and properly oriented	B0	B0	B0	B1	B2
	Allowed glare ratings				
Building-mounted > __ mounting heights from any lighting boundary	G0	G1	G2	G3	G4
Building-mounted __-__ mounting heights from any lighting boundary	G0	G0	G1	G1	G2
Building-mounted ____ to __ mounting heights from any lighting boundary	G0	G0	G0	G1	G1
Building-mounted < ____ mounting heights from any lighting boundary	G0	G0	G0	G0	G1
_____ other luminaires	G0	G1	G2	G3	G4

The _____ boundary is located at the _____ lines of the property, or properties, that the LEED _____ occupies.

The lighting boundary can be _____ under the following conditions:

When the property line is adjacent to a _____ area that is a _____, _____, _____, or _____ lot, the lighting boundary may be moved to _____ feet (1.5 meters) beyond the property line.

When the property line is _____ to a _____ street, _____, or _____ corridor, the lighting boundary may be moved to the _____ line of that street, alley, or corridor.

When there are _____ properties owned by the _____ entity that are _____ to the property, or properties, that the LEED project is within and have the same or higher _____ lighting zone designation as the LEED project, the lighting boundary may be _____ to include those properties.

Orient all luminaires less than _____ mounting heights from the lighting boundary such that the _____ points toward the nearest lighting boundary line. Building-mounted luminaires with the backlight oriented toward the building are _____ from the backlight rating requirement.

OR

OPTION 2. Calculation Method

Do not exceed the following _____ illuminances at the lighting boundary (use the definition of lighting boundary in Option 1). Calculation points may be no more than _____ feet (1.5 meters) apart. Vertical illuminances must be calculated on vertical planes running _____ to the lighting boundary, with the _____ to each plane oriented toward the _____ and _____ to the lighting boundary, extending from grade level to _____ feet (10 meters) above the height of the _____ luminaire.

Complete Table 4. Maximum vertical illuminance at lighting boundary, by lighting zone

Table 4. Maximum vertical illuminance at lighting boundary, by lighting zone	
MLO lighting zone	Vertical illuminance

FC = _____

AND

Internally Illuminated Exterior Signage

Do not exceed a luminance of _____ cd/m² (nits) during _____ hours and _____ cd/m² (nits) during _____ hours.

Exemptions from Uplight and Light Trespass Requirements

The following exterior lighting is exempt from the requirements, provided it is controlled _____ from the nonexempt lighting:
specialized signal, directional, and marker lighting for _____;

lighting that is used solely for _____ and _____ lighting in MLO lighting zones ___ and ___, and is _____ turned off from _____ until _____ a.m.;

lighting for _____ purposes for stage, film, and video performances;

government-mandated _____ lighting;

_____ emergency departments, including associated _____;

lighting for the national _____ in MLO lighting zones ___, ___, or ___; and _____ illuminated signage.

83. List the three forms of light pollution that good lighting design reduces:

- 1.
- 2.
- 3.

84. List examples of lighting controls:

- 1.
- 2.
- 3.
- 4.

85. List what must be identified for each luminaire type in the project:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

86. List examples of exempt lighting:

- 1.
- 2.
- 3.
- 4.

87. If no lighting is required except what is listed in exemptions (see credit requirements) the project _____ the credit, provided the team _____ the exemptions.

88. Complete the following:

Lighting Zone	Ambient lighting description
LZ0	_____
LZ1	_____
LZ2	_____
LZ3	_____
LZ4	_____

89. List the exceptions that would allow a project to modify the lighting boundary 5 feet beyond the project's property boundary when the property boundary abuts a public area that is a:
- 1.
 - 2.
 - 3.
 - 4.

90. List the exceptions that would allow a project to modify the lighting boundary to the center line when the property boundary abuts a:
- 1.
 - 2.

91. To more easily meet the credit requirements, avoid _____ luminaire types as a _____ lighting source.

92. A _____ (whiter) light source (above _____ degrees Kelvin color temperature) with higher _____ (above 80 CRI) makes it easier for people to _____ and to distinguish detail.

93. The vertical illuminance calculation points must be no more than _____ feet (1.5 meters) apart and extend from grade level up to at least _____ feet (10 meters) above the _____ luminaire in the project.

94. Illuminance is the total quantity of light, or luminous flux, that falls on a surface, as measured in _____ or _____.

95. SS Credit Site Master Plan applies to: _____

96. SS Credit Site Master Plan requirements

The project must achieve at least _____ of the following six credits, using the associated calculation methods. The achieved credits must then be _____ using the data from the master plan.

LT Credit: _____

SS Credit: _____

SS Credit: _____

SS Credit: _____

SS Credit: _____

SS Credit: _____

A site _____ plan for the school must be developed in collaboration with school _____. Previous sustainable site design measures should be considered in all master-planning efforts so that existing infrastructure is _____ whenever possible. The master plan must therefore include _____ construction activity plus _____ construction (within the building's lifespan) that affects the site. The master plan development footprint must also include _____, _____, and _____.

Projects where no _____ development is planned are _____ eligible for this credit.

97. SS Credit Tenant Design and Construction Guidelines applies to: _____

98. SS Credit Tenant Design and Construction Guidelines requirements:

Publish for tenants an _____ document with the following content, as applicable:
 a description of the sustainable design and construction features incorporated in the core and shell project and the project’s sustainability _____ and _____, including those for tenant spaces; recommendations, including examples, for sustainable strategies, products, materials, and services; and information that _____ a tenant to _____ space design and construction with the building systems when pursuing the following LEED v4 for _____ Design and Construction prerequisites and credits:

WE Prerequisite: Indoor _____ Use Reduction

WE Credit: Indoor _____ Use Reduction

EA Prerequisite: _____ Energy Performance

EA Prerequisite: _____ Refrigerant Management

EA Credit: _____ Energy Performance

EA Credit: _____ Energy Metering

EA Credit: _____ Energy Production

EA Credit: _____ Refrigerant Management

MR Prerequisite: Storage and Collection of _____

EQ Prerequisite: _____ Indoor Air Quality Performance

EQ Prerequisite: Environmental Tobacco _____ Control

EQ Credit: _____ Indoor Air Quality Strategies

EQ Credit: _____-Emitting Materials

EQ Credit: _____ Indoor Air Quality Management Plan

EQ Credit: _____ Air Quality Assessment

EQ Credit: _____ Comfort

EQ Credit: _____ Lighting

EQ Credit: _____

EQ Credit: _____ Views

EQ Credit: _____ Performance

Provide the guidelines to all tenants _____ signing the _____.

99. List the information that depending on the Core and Shell design and scope, projects should consider including in the tenant guidelines:

1.	10.
2.	11.
3.	12.
4.	13.
5.	14.
6.	15.
7.	16.
8.	17.
9.	18.

100. SS Credit Places of Respite applies to: _____

101. SS Credit Places of Respite requirements:

Provide places of respite that are accessible to _____ and _____, equal to _____ of the net usable program area of the building.

Provide additional dedicated places of respite for _____, equal to _____ of the net usable program area of the building.

Places of respite must be _____, or be located in interior _____, _____, _____, or _____ spaces; such interior spaces may be used to meet up to _____ of the required area if _____ of each qualifying space's gross floor area achieves a direct line of sight to _____ views of _____.

All areas must meet the following requirements.

The area is accessible from within the building or located within _____ feet (60 meters) of a building _____ or _____ point.

The area is located where no _____ intervention or direct medical care is delivered.

Options for _____ or _____ sun are provided, with at least one seating space per _____ square feet (18.5 square meters) of each respite area, with one _____ space per _____ seating spaces.

Horticulture therapy and other specific clinical or special-use gardens unavailable to all building occupants may account for no more than _____ of the required area.

Universal-access natural trails that are available to _____, _____, or _____ may account for no more than _____ of the required area, provided the trailhead is within _____ feet (60 meters) of a building _____.

Additionally, outdoor areas must meet the following requirements.

A minimum of _____ of the total outdoor area must be _____ at the ground plane (not including turf grass) or have overhead vegetated _____.

The area is open to _____ air, the _____, and the _____ elements.

Signage must meet the 2010 FGI Guidelines for Design and Construction of Health Care Facilities (Section 1.2-6.3 and Appendix A1.2-6.3: _____).

Places of respite may not be within _____ feet (7.6 meters) of a _____ area (see EQ Prerequisite Environmental Tobacco Smoke Control).

_____ places of respite on the hospital campus may qualify if they otherwise meet the credit requirements.

102. This credit rewards quality spaces that include _____, have exposure to the elements, and allow opportunities for _____ and _____.

103. Calculate the net usable _____ area of the project by summing all the _____ areas available to house the project's program. Exclude areas for building _____, vertical _____, or structural _____.

104. Complete Table 1. Places of respite criteria

Table 1. Places of respite criteria		
Type of Space	Maximum % of total places of respite area	Special conditions
		_____ of each qualifying space's gross floor area must achieve direct line of sight to unobstructed views of nature
		Trailhead access must be within _____ (60 meters) of building entrance

105. Qualifying Spaces

All areas must meet these requirements:

The area is _____ from within the building or located within _____ feet (60 meters) of a building _____ or _____ point. Areas outside the project boundary can qualify as places of respite, provided they are within _____ feet (60 meters).

No medical intervention or direct medical care is _____ in the respite area.

For each _____ square feet (18 square meters) of respite area, at least _____ seating space and _____ wheelchair space for every _____ seating spaces are placed in _____ or _____ sunlight.

Examples of qualifying features include _____ and tree-shaded, wheelchair-accessible seating areas.

Outdoor spaces must meet these additional requirements:

At least _____ of the total outdoor area must be vegetated at the _____ plane (not including _____ grass) or have vegetated canopy (_____ and _____).

The area is open to _____ air, the _____, and the natural _____.

_____ must meet the 2010 FGI Guidelines for Design and Construction of Health Care Facilities (Section 1.2- 6.3 and Appendix A1.2-6.3, Wayfinding).

Places of respite may not be within _____ feet (7.5 meters) of a smoking area (see EQ Prerequisite Environmental Tobacco Smoke Control).

106. Projects may earn exemplary performance by demonstrating both of the following:

Provide _____ of net usable program area as places of respite for _____ and _____

Provide _____ of the net usable program area as places of respite for _____

107. SS Credit Direct Exterior Access applies to: _____

108. SS Credit Direct Exterior Access requirements:

Provide direct _____ to an exterior _____, _____, _____, or _____. The space must be at least _____ square feet (0.5 square meters) per patient for _____ of all _____ and _____ of qualifying _____ whose clinical length of stay (LOS) exceeds _____ hours. Patients whose length of stay exceeds four hours, and whose treatment makes them unable to _____, such as emergency, stage 1 surgical recovery, and critical care patients, may be _____.

Places of respite outside the building _____ that meet the requirements of SS Credit Places of Respite that are immediately _____ to clinical areas or with direct access from _____ units may be included.

Qualifying spaces must be designated as _____. The spaces must also meet the requirements for outdoor air contaminant concentrations enumerated in EQ Credit Enhanced Indoor Air Quality Strategies, Option 2 and be located more than _____ feet (30 meters) from building _____ air locations, loading _____, and roadways with _____ vehicles.

109. _____ whose length of stay is less than _____ hours are considered nonqualifying. Do _____ include these outpatients in credit calculations

110. Complete Equation 1. Required outdoor area

Required outdoor area = _____ ft² X (_____) peak inpatients + _____ ft² X (_____) qualifying outpatients

111. SS Credit Joint Use of Facilities applies to: _____

112. SS Credit Joint Use of Facilities requirements:

OPTION 1. Make Building Space Open to the General Public (1 point)

In collaboration with the school _____, ensure that at least _____ of the following types of spaces in the school are _____ to and available for shared use by the general _____:

_____;

_____;

_____;

one or more _____;

_____ fields and _____; and

joint _____.

Provide access to _____ in joint-use areas after normal school hours.

OR

Option 2. Contract with Specific Organizations to Share Building Space (1 point)

In collaboration with the school authorities, contract with _____ or other organizations to provide at least _____ types of _____-use spaces in the building, such as the following:

commercial _____;

_____ clinic;

_____ service centers (provided by state or local offices);

_____ office;

_____ or _____ center;

_____ lot; and

one or more _____ businesses.

Provide access to _____ in joint-use areas after normal school hours.

OR

Option 3. Use Shared Space Owned by Other Organizations (1 point)

In collaboration with the school authorities, ensure that at least _____ of the following six types of spaces that are owned by _____ organizations or agencies are accessible to _____:

_____;

_____;

_____;

one or more _____;

_____ pool; and

_____ fields and stadiums.

Provide _____ pedestrian access to these spaces from the school. In addition, provide

_____ joint-use _____ with the other organizations or agencies that stipulate how these spaces will be shared.