

# Williams College Sustainable Building Policy

## Part I—Capital Projects (>\$10million)

June 2023

### *Background*

Williams College operates more than 100 buildings and structures. This includes classroom and laboratory spaces, faculty and administrative offices, a museum, auditoriums, athletics and dining facilities, trades and equipment buildings, the central plant, and more. New construction and capital asset maintenance are the two main pathways to create, repair and upgrade buildings to serve the college's needs. They can involve a multitude of environmental and human health impacts, including soil disturbance and vegetation loss, noise, resource consumption and waste generation, as well as biodiversity and climate impacts. It is, therefore, important that the college seeks to minimize the negative impacts by adopting holistic sustainability principles for the design, construction, maintenance and ultimately decommissioning of buildings and structures and puts effective procedures in place for implementing and maintaining them.

Fortunately, Williams already has a history of using green building standards and practices, including the [Green Building Guidelines](#) (adopted in 2011 and updated in 2016), the 2003/4 [LEED Certification Policy](#) and the [Green Gauges](#) which have guided the process for measuring sustainable building efficacy. In addition, the [2021 Strategic Plan](#) sustainability goals (see below) provide additional guidance for managing and enhancing the college's building stock. This new Sustainable Building Policy therefore updates, expands and in some cases specifies in greater detail the goals of Williams' existing sustainability features and benchmarks building guidelines while also allowing for flexibility to set appropriate sustainability goals for various building types and projects.

The policy consists of two parts: Part I addresses capital projects and Part II focuses on asset maintenance projects.<sup>1</sup>

### *Strategic Plan Sustainability Goals Relevant for Sustainable Building Policy*

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<sup>1</sup> Capital projects refer to new building construction and gut renovations. Asset maintenance combines what were previously "annuals" such as painting, patching a roof, replacing worn out furniture, or making minor renovations for ADA compliance that typically cost less than \$50,000 and "renewals" that refer to bigger projects, such as replacing a roof, renovating an elevator, or building a small addition.

The Strategic Plan specifically calls for rigorous sustainability standards for new construction, maintenance, and renewal. In addition, the design, construction, and operation of buildings impacts several other sustainability priority areas, notably climate action, responsible consumption, and community, diversity, equity and inclusion:

- Buildings play a significant role in Williams' climate actions, including to become net-zero emissions, for reducing embodied carbon, pursuing energy conservation and efficiency, and expanding on-campus solar PV generation.
- Land use, and by extension habitat, campus landscape aesthetics, and its connection to the surrounding town, are all influenced by building maintenance and new construction.
- Our buildings, through their designs and accessibility features, also portray who is welcome to enter and occupy them.
- Building design also influences natural resource use such as water (e.g., through the use of high efficiency faucets and toilets), energy (e.g., through daylighting, shade trees, glazing, envelope tightness, and insulation), and waste reduction (designs that minimize waste generation in construction and operation and support materials sorting for reuse, recycling, and composting).

### *Campus Engagement and Education*

The new Sustainable Building Policy supports environmentally friendly, healthy, aesthetically pleasing building spaces that foster learning, community, and productivity. Educating the college community on the goals and scope of the Sustainable Building Policy and how its elements are integrated into a building's life cycle phases (design, construction, maintenance, and decommissioning) is important to promote awareness and understanding of the ways in which buildings can support or hamper our wellbeing and the college's environmental performance and climate action goals.

Community engagement has already been integrated into the post-occupancy information sharing strategy for new capital projects. This includes [brochures and self-guided tours](#) to learn about the sustainability features of new or renovated buildings. Representatives of college stakeholder groups also serve on building architectural and design committees and [students have engaged in research projects](#) addressing building and associated infrastructure.

As part of updating the [2016 Sustainable Building Guidelines](#), the new policy aims to increase the space and attention given to information sharing, stakeholder input, and iterative learning that allow us to create effective processes for capital projects and renewals, which in turn helps ensure that we have sustainable, accessible, healthy, and attractive spaces. We also want to foster the philosophy of "campus as a lab" by building into the policy opportunities to try and test sustainability features, materials, and building maintenance procedures (e.g., cleaning products). All of this requires close collaboration between the project managers in Planning Design and Construction (PD&C) and the staff in Facilities Operations and Maintenance, the Zilkha Center, the Provost's and VP of Finance and Operations' offices, and an open and intentional dialogue with the broader college community. We are also actively

engaged in peer-to-peer institutional exchanges to share knowledge, approaches, and best practices in sustainable building and campus infrastructure design and construction.

Our experience with green building standards and policies has shown that a policy that is ambitious *and* flexible can accomplish strategic plan and climate objectives more efficiently than one that is tied to specific, rigid building certification standards.

## **Part I—Capital Projects (>\$10million)**

### *Process Integration*

The building life cycle starts with initial programmatic needs that result in the approval to commence project activities including project planning and design, construction, commissioning, recommissioning, and ultimately decommissioning (although careful design and maintenance can extend the lifespan of a building to 100 years and beyond).

*Note: Prior to initiating a capital project the college should always carefully examine the need for additional campus square footage in conjunction with continuously assessing existing space utilization and flexibility for multi-function. Every additional square footage added to campus carries initial environmental costs as well as the ongoing burden of energy, water and other resource consumption as well as maintenance. The most sustainable action the college can take is to optimize utilization of existing spaces and minimize any addition of new square footage.*

The college, with the leadership of PD&C and the Zilkha Center, developed and will continue to use [Green Gauges](#), a guided process to communicate and evaluate fundamental information about a project's green building characteristics and their effectiveness. Green Gauges is integrated into the standard architectural design and construction documentation to evaluate sustainability options early in the schematic phase so as to build the selected aspects effectively and efficiently into the final design. Green Gauges also helps with developing the assumptions of the energy model and its energy consumption predictions that form the basis of the design EUI and contains specific information on the building metering strategy. Post-occupancy is used to monitor building performance, optimize energy use, and troubleshoot system issues in the post-occupancy verification period and beyond.

<b>DELIVERABLE</b>	<b>WHEN DUE</b>
1: ESTABLISH PROJECT GOALS FOR ENERGY USE	10% SCHEMATIC
2: SYSTEMS AND METERING NARRATIVE	30% SCHEMATIC
3: VALUE ASSESSMENT	25% DESIGN DEVELOPMENT
4: METERING DIAGRAM	50% DESIGN DEVELOPMENT
5: OCCUPANCY MONITORING NARRATIVE	CONSTRUCTION COMPLETION
6: VERIFICATION	11 & 18 MONTHS POST-OCCUPANCY

Table 1: List of the six Green Gauges deliverables throughout the building design, construction and occupancy phases.

### *Establishing Sustainability Performance Goals for Capital Projects (>\$10million)*

The new Sustainable Building Policy expands the range of sustainability issue areas, broadens the set of green building standards and certifications from LEED to ILFI Living Building Challenge and Passive House, and adds more flexibility for Project Managers to determine the highest feasible set of performance goals for a given project. The new policy also emphasizes taking a systems perspective whenever relevant and possible.

*Note: At a minimum, capital projects should be designed to meet a LEED v. 4.1 Gold or equivalent certification level. Implementing the main policy elements laid out in the following tables, should enable the project to obtain a LEED v. 4.1 point score at the border of the Gold and Platinum levels.*

With regard to structure, the policy is organized by sustainability issue area and lays out relevant sustainability objectives and their operationalization. The below links can be used to jump directly to individual issue areas.

- [Space Management & Architectural Programming](#)
- [Energy & Climate](#)
- [Human Health](#)
- [Natural Resource Use Efficiency and Waste Reduction](#)

- [Place, Landscapes and Habitat](#)
- [Mobility](#)
- [Diversity, Equity, Inclusion and Accessibility](#)
- [Education](#)

## SPACE MANAGEMENT AND ARCHITECTURAL PROGRAMMING

Building Related Recommendations from the Strategic Plan Sustainability Working Group:

- 1.2.c Improve the efficiency of buildings and contain square footage growth. (See Built Environment section below).
- 2.4.c Constrain the growth of space in new projects through explicit design guidelines and encourage building committees to seek shared solutions to common spaces that might serve multiple constituencies and functions.

Priority Area/Goal	Targets and Commitments	Operationalization
<p>Space Management</p>	<p><i>Campus-wide Systems Perspective:</i></p> <p>Space management involves planning for and using your space in a more organized way. The greatest opportunity to impact sustainability is prior to design and construction, by managing existing space and containing (or reducing) square footage growth when possible. This can be supported by goals to do more with the existing space the college already has.</p> <ul style="list-style-type: none"> <li>• Set acceptable space metrics such as:               <ul style="list-style-type: none"> <li>○ Building square footage per student</li> <li>○ Net to Gross Ratios</li> <li>○ Classroom Utilization</li> <li>○ Lab sizes</li> <li>○ Office sizes</li> <li>○ Others</li> </ul> </li> <li>• Review projected expansion and contraction of student populations within               <ul style="list-style-type: none"> <li>Division I: Languages and the Arts</li> <li>Division II: Social Studies</li> <li>Division III: Science and Mathematics</li> </ul>               and prioritize space reallocation instead of adding square footage to campus without corresponding contraction.             </li> <li>• Review potential impact of remote/flexible hybrid work policies on space management.</li> <li>• Consider space flexibility options that allow for multi-functional spaces in lieu of rarely used single purpose spaces.</li> </ul> <p><i>Project-specific:</i></p>	<ol style="list-style-type: none"> <li>1. PD&amp;C, the Zilkha Center (ZC), Provost, and VP for Finance &amp; Operations identify space management goals for the campus and set acceptable space metrics.</li> <li>2. Audit, track and manage the college's existing physical space.</li> <li>3. Centralize space ownership; move away from departmental space ownership to allow for more flexibility in space assignments.</li> <li>4. Discuss if and how new building square footage might be offset by decommissioning existing square footage.</li> <li>5. Translate Space Metrics into detailed performance targets during architectural programming with input from the Design Team to establish the final Architectural Program.</li> <li>6. Document/justify any variations from the Space Metrics during Programming, Design Development and Construction Phases.</li> </ol>

	<p>Critically examine space expansion proposals</p> <ul style="list-style-type: none"> <li>Minimize increase in gross square footage, ideally by rightsizing and/or offsetting newly built square footage with a commensurate reduction in existing square footage elsewhere.</li> </ul> <p>Verification:</p> <ul style="list-style-type: none"> <li>Verify space metrics have been applied appropriately to projects.</li> <li>Verify campus space offsets.</li> </ul> <p>Benefits:</p> <ul style="list-style-type: none"> <li>Reductions in embodied (and potentially operational) carbon emissions, energy and water use and other resource use</li> <li>Reduction in soil, habitat and species impacts</li> <li>Likely lower capital cost expenditures</li> <li>Lower O+M costs</li> </ul>	
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<b>ENERGY &amp; CLIMATE</b>		
<p><b>Building Related Strategic Plan Goals:</b></p> <ul style="list-style-type: none"> <li>Sharply reducing emissions from campus combustion through energy conservation measures and shifting to renewable energy sources;</li> <li>Incorporating a carbon shadow price in decisions about energy use and buildings;</li> <li>Securing 100% renewable purchased electricity and continuing to increase on-campus solar generation;</li> <li>Pursuing opportunities to reduce the amounts of embodied carbon in building materials.</li> </ul>		
<b>Priority Area/Goal</b>	<b>Targets and Commitments</b>	<b>Operationalization</b>
Operational carbon	<p><i>Campus-wide Systems Perspective:</i></p> <ul style="list-style-type: none"> <li>Project energy systems should be selected and sized in a manner that aligns with the college's Energy &amp; Carbon Master Plan and Climate Action Plan. This requires looking beyond the project's energy needs to assess how the project will be integrated into the campus-wide energy systems for heating &amp; cooling, domestic hot water, and other process loads and to consider, in particular, if the project could be net energy positive (generates more energy than it consumes per year) and net negative carbon (removes/avoids more carbon than it releases per year)</li> </ul> <p><i>Project-specific:</i></p>	<ol style="list-style-type: none"> <li>7. PD&amp;C, the Zilkha Center (ZC), Provost, and VP for Finance &amp; Operations identify the initial sustainability goals for the project, including energy &amp; climate goals (EUI and carbon emissions), which are then further discussed and refined by the Building Committee             <ol style="list-style-type: none"> <li>a. During the initial planning specify EUI ranges appropriate for the building project category, climate region, and past experience from similar buildings at the college</li> <li>b. Determination of these early goals should include an evaluation of how the project's energy &amp; climate goals will support campus decarbonization goals. For example, for new construction projects that would allow for on-site energy generation in excess</li> </ol> </li> </ol>

	<p>Energy Efficiency:</p> <ul style="list-style-type: none"> <li>• Aim for one of the following building certification: <a href="#">ILFI 4.0 Living Building certification</a> (most ambitious), <a href="#">ILFI LBC 4.0 Core</a>, <a href="#">ILFI Zero Energy certification</a> (energy-focused), <a href="#">ILFI Zero Carbon certification</a> (embodied and operational carbon focused) , or <a href="#">PHIUS+2021 Zero Passive House</a> (energy-focused), <a href="#">LEED v.4.1 Gold or higher with 80+% of EA credits</a></li> <li>• Set an aggressive Energy Use Intensity (EUI) target in line with the above standards or, if no certification is pursued, specific to the project but informed by the campus-wide decarbonization goal (i.e., calculate additional emissions due to the project and how they will be offset or curtailed within the 80% decarbonization goal and towards net-zero emissions by 2050). Consider using the <a href="#">Net Zero Tool</a> and/or the <a href="#">EnergyStar Portfolio Manager</a> to obtain reference values.</li> </ul> <p>GHG Emissions:</p> <ul style="list-style-type: none"> <li>• Preferred: Net-zero carbon, no on-site fossil fuel combustion or connection to the central plant. Use <a href="#">ILFI Zero Energy certification</a> (energy-focused), <a href="#">ILFI Zero Carbon certification</a> (embodied and operational carbon focused) , or <a href="#">PHIUS+2021 Zero Passive House</a> (energy-focused). For renewables, the order of preference is 1. on-site, 2. on-campus, 3. off-campus.</li> <li>• Alternatively: Meet the certification standard being pursued (if less aggressive) and minimize on-site fossil fuel combustion.</li> </ul> <p>Verification:</p> <ul style="list-style-type: none"> <li>• Monitoring and verification in line with building certification pursued or, if no certification, for 1 year for energy and carbon emissions</li> <li>• Re-commissioning of projects every 5 years post-occupancy</li> </ul>	<p>of the building's projected needs, such additional capacity should be evaluated with regard to offsetting/providing fossil fuel use at other buildings</p> <ol style="list-style-type: none"> <li>8. The initial climate &amp; energy goals are translated into detailed performance targets during early planning and design phases by PD&amp;C in consultation with the ZC and with input from the Design Team to establish final project goals at the start of the schematic design phase       <ol style="list-style-type: none"> <li>a. Develop specific EUI goal</li> <li>b. Identify the energy and carbon goals the project will meet</li> <li>c. Develop Green Gauges criteria</li> </ol> </li> <li>9. Project costing should include an LCCA with 2 scenarios: one with and one without the selected cost of carbon (e.g., SCC values, market price for carbon offsets, internally set abatement price)</li> <li>10. Document/justify any modifications of the climate &amp; energy targets during Design Development and Construction Phases</li> <li>11. For O&amp;M: Verify performance goals in line with certification standard and, at minimum, during first 18 months of occupancy and take remediative action if goals are not met</li> </ol> <p>Resources to cross reference:</p> <ul style="list-style-type: none"> <li>• <a href="#">Strategic Plan</a></li> <li>• <a href="#">Climate Action Plan</a></li> </ul>
Embodied carbon	<ul style="list-style-type: none"> <li>• Projects should include an estimate of the embodied carbon and use it to compare new construction v. renovation/updating of existing space where appropriate</li> <li>• Reduce embodied carbon emissions by choosing lower embodied carbon materials and minimizing construction, demolition, and other waste through reuse and repurposing materials (salvage) and recycling</li> <li>• Reduce embodied carbon emissions operational waste in accordance with the ZWAP and through design for zero-waste (e.g., <a href="#">NYC Zero Waste design guidelines</a>)</li> <li>• Projects should develop a plan for recovering as much material</li> </ul>	<ol style="list-style-type: none"> <li>1. The Design Team estimates the embodied carbon of the project during the design phase using an appropriate embodied carbon estimation methodology or calculator (e.g., ILFI's or <a href="#">EC3</a>)</li> <li>1. Identify and use materials with lower embodied carbon to meet certification requirements</li> <li>2. Purchase offsets for estimated remaining embodied carbon.</li> <li>3. For building decommissioning: identify on or off-campus reuse opportunities or divert to recycling</li> </ol> <p>Resources to cross reference:</p>

	<p>and hence embodied carbon when the building/structure will be decommissioned and, if applicable, the building or structure it replaces</p> <p>Certification Options:</p> <ul style="list-style-type: none"> <li>- <a href="#">ILFI Zero Carbon</a>, <a href="#">ILFI 4.0 Living Building certification</a>, <a href="#">ILFI LBC 4.0 Core</a>, all of which include reductions in embodied carbon compared with base case; offset 100% of calculated embodied carbon if no certification pursued</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Strategic Plan</a></li> <li>• <a href="#">Climate Action Plan</a></li> </ul>
<p><b>Climate Resilience</b></p>	<p>The following criteria should be reviewed and evaluated during planning and design phases:</p> <ul style="list-style-type: none"> <li>• Site selection: avoid sites that are prone to high winds, flooding, or have high-sensitivity ecologies (see <a href="#">BioMap2 areas of high ecological sensitivity</a>)</li> <li>• Integrate into design as applicable: <ul style="list-style-type: none"> <li>○ Natural flood protection, e.g., using blue-green infrastructure such as wetlands, bioswales, trees, and restoration of straightened or channeled river and creek beds</li> <li>○ Rainwater harvesting in underground cisterns</li> <li>○ Natural groundwater recharge through bioswales and rain gardens</li> <li>○ Blue-green infrastructure for stormwater management</li> <li>○ Use of native and climate adaptive plantings and sustainable landscape maintenance practices such as avoidance of synthetic fertilizers, pesticides, and intensive landscape management methods</li> <li>○ Select, size, and place HVAC and other building equipment to align with local climate predictions, e.g., plan for additional cooling, place HVAC and other equipment above levels that might flood, opt for micro-grid enabled energy supply</li> <li>○ Reduce heat island effects through reflective or green roofs</li> </ul> </li> </ul> <p>Certification Options:</p> <ul style="list-style-type: none"> <li>• Preferred: <a href="#">ILFI 4.0 Living Building certification</a>, <a href="#">ILFI LBC 4.0 Core</a></li> <li>• Alternatively: meet 80+% of <a href="#">LEED v.4.1 Sustainable Sites requirements</a>.</li> <li>• The <a href="#">LEED Climate Resilience Screening Tool for LEED v4</a> Projects offers a framework to help identify climate-related effects on projects, and to determine effective strategies for enhanced resilience. <ul style="list-style-type: none"> <li>○ Relevant LEED credits: Site Assessment, Rainwater Management, Heat Island Reduction, Sensitive Land</li> </ul> </li> </ul>	<ol style="list-style-type: none"> <li>1. PMs identify areas of relevance for the project</li> <li>2. PM in collaboration with ZC determine how the project can address the identified items</li> <li>3. Review and further detailing during Design Development Phase by Building Committee</li> <li>4. Monitoring during Construction Phase</li> <li>5. Conduct post-construction review to determine whether criteria have been met, lessons learned</li> <li>6. O&amp;M: ongoing monitoring and maintenance of resilience features</li> </ol> <p>Resources to cross reference:</p> <ul style="list-style-type: none"> <li>• <i>Our future Climate Adaptation and Resilience Plan</i></li> </ul>

	Protection, Surrounding Density and Diverse Uses, Building Life Cycle Impact Reduction, Energy Use Optimization, Renewable Energy, Innovation Credit <ul style="list-style-type: none"> <li>• <a href="#">RELi rating system and standard</a> by the Institute for Market Transformation to Sustainability (MTS)</li> </ul>	
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**HUMAN HEALTH**

Building Related Strategic Plan Goals:

- Recommendation 2.6 from the Strategic Planning Sustainability Working Group: Reduce the community's exposure to toxics in materials and the maintenance of our physical plant, and transparently track the use of high-risk chemicals on campus.

Priority Area/Goal	Targets and Commitments	Operationalization
Indoor environmental quality	<ul style="list-style-type: none"> <li>• Ensure healthy indoor environmental quality, especially with regard to air quality and thermal comfort</li> <li>• Maximize use of natural, healthy materials through use of the <a href="#">Red2Green Healthier Materials Management System</a></li> <li>• Ensure adequate daylighting and exterior natural view access for work areas inside the building in alignment with building purpose, e.g., classrooms, offices, museums, labs</li> <li>• Minimize excessive noise levels for different space use types (e.g., office, classroom, kitchen, community space) through appropriate sound proofing and other mitigation measures as needed</li> <li>• Provide for community spaces that are accessible and welcoming as appropriate for the project, e.g., lounge space, kitchen</li> </ul> <p>Certification Options:</p> <ul style="list-style-type: none"> <li>• <a href="#">ILFI 4.0 Living Building certification</a>, <a href="#">ILFI LBC 4.0 Core</a>, <a href="#">ILFI LBC Healthy Materials Petal</a></li> <li>• <a href="#">WELL</a> certification and standard</li> <li>• <a href="#">LEED v. 4.1 certification</a> with 80%+ credits for Indoor Air Quality</li> </ul>	<ol style="list-style-type: none"> <li>1. ZC in consultation with the Provost, PD&amp;C and the VP of Finance &amp; Operations identify the high-level appropriate human health and wellbeing criteria during Initial Planning Phase</li> <li>2. PM in collaboration with ZC determine how the project can address the identified, relevant sustainability criteria</li> <li>3. Review and further detailing during Design Development Phase by Building Committee             <ol style="list-style-type: none"> <li>a. For healthy building materials use the Volume framework during the Design Development Phase - if pursuing ILFI certification</li> </ol> </li> <li>4. O&amp;M: ongoing monitoring and maintenance of measures in support of human health, e.g., cleaning protocols</li> </ol>
Outdoor environmental quality	<ul style="list-style-type: none"> <li>• Minimize excessive ambient noise levels outdoors for outdoor gathering and reflection areas by siting noise-emitting equipment such as ASHP away from such spaces or by protecting them with noise barriers</li> </ul>	<ol style="list-style-type: none"> <li>1. ZC in consultation with the Provost, PD&amp;C and the VP of Finance &amp; Operations identify the high-level appropriate human health and wellbeing criteria during Initial Planning Phase</li> </ol>

	<ul style="list-style-type: none"> <li>● Provide for outdoor community spaces that are accessible and welcoming as appropriate for the project, e.g., outdoor seating or picnic area, outdoor game space, quiet meditation space</li> <li>● Consider access to nature in project design</li> </ul> <p>Certification Options:</p> <ul style="list-style-type: none"> <li>● <a href="#">ILFI 4.0 Living Building certification</a>, <a href="#">ILFI LBC 4.0 Core</a>, <a href="#">ILFI LBC Healthy Materials Petal</a></li> <li>● <a href="#">WELL</a> certification and standard</li> <li>● <a href="#">LEED v. 4.1 certification</a> with 80%+ credits for Location &amp; Transportation</li> </ul>	<ol style="list-style-type: none"> <li>2. PM in collaboration with ZC determine how the project can address the identified, relevant sustainability criteria</li> <li>3. Review and further detailing during Design Development Phase by Building Committee       <ol style="list-style-type: none"> <li>a. For healthy building materials use the Volume framework during the Design Development Phase - if pursuing ILFI certification</li> </ol> </li> <li>4. O&amp;M: ongoing monitoring and maintenance of measures in support of human health, e.g., checking functioning bike lockers, outdoor equipment such as ASHP meet noise ratings</li> </ol>
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## NATURAL RESOURCE USE EFFICIENCY AND WASTE REDUCTION

### Building Related Strategic Plan Goals:

- Increasing the use of sustainable products throughout the college;
- Developing a hard goods management system to reduce new purchases and encourage reuse and decrease waste; and
- Educating our community about the importance of water conservation and management.

Priority Area/Goal	Targets and Commitments	Operationalization
<p>Natural Resource Use Efficiency and Waste</p>	<ul style="list-style-type: none"> <li>• Minimize site disturbance during construction and protect against erosion, soil contamination, and loss of mature trees and other established, high-value vegetation</li> <li>• Implement water conservation measures as appropriate, e.g., low flow fixtures and high-efficiency toilets, bioswales and rain gardens, rainwater harvesting</li> <li>• Reduce construction, demolition, and other waste through reuse and repurposing materials (salvage) and recycling</li> <li>• Reduce operational waste in accordance with the ZWAP and through design for zero-waste (e.g., <a href="#">NYC Zero Waste design guidelines</a>)</li> <li>• Projects should develop a plan for recovering as much material and hence embodied carbon when the building/structure will be decommissioned and, if applicable, the building or structure it replaces</li> </ul> <p>Certification Options:</p> <ul style="list-style-type: none"> <li>• <a href="#">ILFI 4.0 Living Building certification</a>, <a href="#">ILFI LBC 4.0 Core</a>, <a href="#">ILFI LBC Healthy Materials Petal</a></li> <li>• <a href="#">LEED v. 4.1 certification</a> with 80%+ credits for Sustainable Sites, Water Efficiency, and Materials and Resources</li> </ul>	<ol style="list-style-type: none"> <li>1. ZC identifies the high-level natural resource conservation and land use &amp; landscaping goals during Initial Planning phase             <ol style="list-style-type: none"> <li>a. Include how the project's natural resource and land use &amp; landscaping goals would advance/impede Strategic Plan goals for Buildings, Landscaping and Land Use and Responsible Consumption goals</li> </ol> </li> <li>2. The Project Team then develops the more detailed approaches for meeting them during the Design Phase</li> <li>3. Document/justify any modifications during Design Development and Construction Phases</li> <li>4. Verify performance goals (as applicable, e.g., for water consumption) during first year of occupancy and take remediative action if goals are missed</li> <li>5. For building decommissioning: identify reuse and recycling opportunities.</li> <li>6. O&amp;M: ongoing monitoring and maintenance of natural resource use features, e.g., tree maintenance and ZWAP operations</li> </ol> <p>Resources to cross reference</p> <ul style="list-style-type: none"> <li>• <a href="#">Zero Waste Action Plan</a></li> <li>• Stormwater Management policy (to be created)</li> </ul>

**PLACE, LANDSCAPES AND HABITAT**

**Building Related Strategic Plan Goals:**

- Creating a campus planning framework to make the most efficient use of resources and to limit or contract campus square footage;
- Developing a comprehensive landscape design and management plan that addresses sustainability, access, aesthetics, equity and connections between campus and town; and
- Protecting college lands, such as Hopkins Forest, for research, teaching and recreation.

<b>Priority Area/Goal</b>	<b>Targets and Commitments</b>	<b>Operationalization</b>
Place	<ul style="list-style-type: none"> <li>• incorporate recognition of the history and cultural use of the project site, e.g., through signage, restoration, replenishment or revival of site-specific features or artifacts</li> </ul> <p>Certification Options:</p> <ul style="list-style-type: none"> <li>• <a href="#">ILFI 4.0 Living Building certification</a>, <a href="#">ILFI LBC 4.0 Core</a></li> </ul>	<ol style="list-style-type: none"> <li>1. OIDEI/Davis Center, ZC and PD&amp;C identify issues of historical and cultural significance for the project</li> <li>2. Develop plan for protecting, honoring, acknowledging them or otherwise ensure that they are adequately considered in the project's design</li> <li>3. The Project Team and Building Committee develops the more detailed approach to meeting the Place criteria during the Design Phase</li> <li>4. Document/justify any modifications during Design Development and Construction Phases</li> </ol>
Landscapes and Habitat	<ul style="list-style-type: none"> <li>• Minimize site disturbance during construction and protect against erosion, soil contamination, and loss of trees and plants by using established best practices in construction site management and establishing plans for post-construction plant and tree health monitoring for at least 5 years</li> <li>• Protect natural/wild landscapes, e.g., by reducing landscape fragmentation and preserving/regenerating/creating habitat for pollinator species</li> <li>• Use native, climate-adaptive plants in landscaping</li> <li>• Design for pesticide-free, synthetic fertilizer free, drought tolerant, and lower intensity landscape management</li> <li>• Use blue-green infrastructure for stormwater management and enhance natural flood protection, e.g., using blue-green infrastructure such as wetlands, bioswales, trees, and restoration of straightened or channeled river and creek beds</li> <li>• Support natural groundwater recharge through bioswales and rain gardens</li> <li>• Use exterior lighting design that minimizes light pollution and is highly energy efficient</li> </ul>	<ol style="list-style-type: none"> <li>1. PD&amp;C and ZC identify high-level land use &amp; landscaping goals during Initial Planning phase             <ol style="list-style-type: none"> <li>a. Include how the project's land use &amp; landscaping goals would advance/impede Strategic Plan goals for Buildings, Landscaping and Land Use</li> </ol> </li> <li>2. The Project Team then develops the more detailed approach to meeting them during Design Phase</li> <li>3. Document/justify any modifications during Design Development and Construction Phases</li> <li>4. Verify performance goals, e.g., whether plants and/or trees are successfully established during the first 2-3 years post-occupancy</li> <li>5. O&amp;M: ongoing monitoring and maintenance of landscape and habitat, e.g., landscaping, tree and plant health (5 years minimum), bioswale function</li> </ol> <p>Resources to cross reference</p> <ul style="list-style-type: none"> <li>• <a href="#">Sasaki Campus Framework Plan</a></li> <li>• <a href="#">Landscaping Study by Reed Hilderbrand</a></li> </ul>

	<ul style="list-style-type: none"><li>• Use bird-friendly design and material choices to reduce bird mortality from window strikes based on findings of the <a href="#">Yale Bird Friendly Buildings Initiative</a></li></ul> <p>Certification Options:</p> <ul style="list-style-type: none"><li>• <a href="#">ILFI 4.0 Living Building certification</a>, <a href="#">ILFI LBC 4.0 Core</a>, <a href="#">ILFI LBC Water Petal</a></li><li>• <a href="#">LEED v. 4.1 certification</a> with 80%+ credits for Sustainable Sites and Water Efficiency</li><li>• Apply the <a href="#">5 Principles for Responsible Outdoor Lighting</a></li></ul>	<ul style="list-style-type: none"><li>• <a href="#">Tree Inventory</a> and <a href="#">tree management plan</a></li></ul>
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<b>MOBILITY</b>		
Building Related Strategic Plan Goals: <ul style="list-style-type: none"> <li>Reducing travel emissions through reduced vehicle and air miles and improved vehicle fleet efficiency;</li> </ul>		
<b>Priority Area/Goal</b>	<b>Targets and Commitments</b>	<b>Operationalization</b>
Mobility	<ul style="list-style-type: none"> <li>Design for active and clean mobility, including bicycle racks, safe pedestrian walkways, preferred parking for high-efficiency and carpool vehicles and access to EV charging stations as well as showers and locker spaces whenever possible</li> <li>Provide preferred parking spaces for high-efficiency vehicles as defined in the college's HEV policy</li> <li>Enhanced connectivity to area public transit systems and/or Williams College sponsored transportation options</li> </ul> Certification Options: <ul style="list-style-type: none"> <li><a href="#">ILFI 4.0 Living Building certification, ILFI LBC 4.0 Core</a></li> <li><a href="#">LEED v. 4.1 certification</a> with 80%+ credits for Location and Transportation</li> </ul>	<ol style="list-style-type: none"> <li>ZC identifies the high-level goals for active, low-carbon mobility during the Initial Planning Phase</li> <li>The Project Team then develop more detailed approaches for meeting them during Design Development Phase</li> <li>Document/justify any modifications during Design Development and Construction Phases</li> <li>O&amp;M: ongoing monitoring and maintenance of mobility features, e.g., pedestrian walkways, bicycle racks, enforce preferred parking rules</li> </ol> Resources: <ul style="list-style-type: none"> <li><a href="#">HEV Parking Policy</a></li> </ul>

**DIVERSITY, EQUITY, INCLUSION AND ACCESSIBILITY**

**Building Related Strategic Plan Goals:**

- Developing inclusive decision-making processes, which clarify how decisions are made, ensure a range of perspectives are represented and heard at the table, and provide opportunities for feedback;
- Making clear connections between our environmental actions and social justice; and
- Strengthening diversity and inclusion in campus sustainability programs and initiatives.

<b>Priority Area/Goal</b>	<b>Targets and Commitments</b>	<b>Operationalization</b>
DEIA	<ul style="list-style-type: none"> <li>• ADA and ABA compliant and apply universal design principles whenever possible</li> <li>• Support the culturally and historically sensitive engagement with the project's site (e.g., by acknowledging and honoring prior use of and displacement from the site by Native American tribes, communities of color, and other marginalized populations)</li> <li>• Support inclusion and equity in building design and use/accessibility (e.g., culturally sensitive choices in the design and furnishing of interior spaces and the design of exterior spaces)</li> </ul> <p>Certification Options:</p> <ul style="list-style-type: none"> <li>• <a href="#">ILFI 4.0 Living Building certification</a>, <a href="#">ILFI LBC 4.0 Core</a></li> </ul>	<ol style="list-style-type: none"> <li>1. OIDEI/Davis Center identifies the high-level DEIA relevant criteria during the Initial Planning Phase</li> <li>2. The Project Team then develops the more detailed approaches for meeting them during the Design Development Phase</li> <li>3. Document/justify any modifications during Design Development and Construction Phases</li> <li>4. Post-occupancy evaluation of success of implementation</li> </ol> <p>Resources:</p> <ul style="list-style-type: none"> <li>• Strategic Planning Working Group on the Built Environment <a href="#">recommendations</a> for accessibility</li> </ul>

**EDUCATION**

**Building Related Strategic Plan Goals:**

- Expanding opportunities for students to engage with climate change and the environment through internships, on-campus research and community projects;
- Increasing ways for students to engage with projects in our regional communities; and
- Educating the entire campus community about sustainable practices;.

**Education**

Develop educational opportunities for:

- Building Committee members about sustainability of the built environment, mainstream sustainability theory, and the college's Strategic Planning goals for buildings and landscapes
- Sustainability trainings for sustainable building design and maintenance for PMs in PD&C and staff in Facilities Operations and Maintenance
- Occupants and other campus users that illustrate the college's approach to sustainable buildings, highlights buildings' sustainability features, and offer opportunities for further engagement with them, including signage

1. ZC in collaboration with PD&C develop building sustainability information to share with Building Committee members
1. ZC in collaboration with PD&C develop building informational materials (e.g., brochure, website content, signage in and around building) informing readers about the sustainability features of the project
2. PD&C and Facilities Operations leadership determines ongoing training needs and opportunities for PMs and Facilities Maintenance Crews about advances in sustainable design and building operations