


## **SELECT BOARD & SCHOOL COMMITTEE POLICY**

### ***INTEGRATED BUILDING DESIGN & CONSTRUCTION POLICY***

Date Approved by SB: June 21, 2023 Signature of Chair: 

Date Approved by SC: \_\_\_\_\_ Signature of Chair: \_\_\_\_\_

Supersedes: Integrated Building Design & Construction Policy, October 7, 2019

#### **I. Purpose of Policy**

1. To maximize the health and well-being of building occupants and the public at large.
2. To ensure the Town will design and construct its buildings to meet programmatic requirements while enabling operations to achieve the highest reasonably attainable and economically viable performance standards for health, energy, and resilience.
3. To guide the overall project delivery of a Town facility from a scope, schedule, and cost standpoint while maximizing sustainability objectives.
4. To evaluate and select optimal designs which (1) address the building's intended programmed use and which (2) minimize and mitigate the negative impacts of development, construction and building operations on the natural environment.
5. To maximize onsite renewable energy production given each building's respective site and site use, while minimizing energy use and operational costs of Town buildings.
6. To provide resilient and maintainable buildings.

#### **II. Responsibility**

The Select Board (SB) and School Committee (SC) are responsible for adopting this policy and goals for school buildings. The Select Board is responsible for adopting this policy and goals for all other Town buildings. The term "Elected Boards" is used to identify these two bodies throughout this policy and goals.

The Town Manager, Superintendent of Schools, Director of Public Facilities, and Permanent Building Committee (PBC) shall be responsible for the adherence to this policy and the Town Manager is authorized to adopt additional guidelines, objectives, and supplemental materials to effectuate this policy and goals.

The project "stakeholder" group referred to in this policy and goals shall be determined by the Town Manager and Superintendent of Schools, when appropriate, in consultation with the Elected Boards, but should include but not be limited to, representatives of the Department of Public Facilities, Permanent Building Committee, the building occupants, Sustainable Lexington Committee, and an invitation for a liaison from the Capital Expenditures Committee.

#### **III. Scope**

1. This policy and attached goals apply to all Town funded building projects.
2. To the extent possible, all renovation and new projects, undertaken by the Town should achieve the "LEED Lexington" goals in the Integrated Building Design and Construction Goals Checklist and strive to achieve the LEED Silver standards, at a minimum. The application for LEED™ certification is optional, subject to available funding and the discretion of the Elected Boards prior to schematic

designs. The Elected Boards may choose to exempt certain building projects under their respective purview from these standards.

#### **IV. Policy**

The Department of Public Facilities and Elected Boards will strive to achieve the highest reasonably attainable and economically viable performance standards for health, energy, and resilience for Town building projects in accordance with the policy of the Elected Boards as follows:

1. Prior to initiating building design activities or selection of the design team, the project stakeholders shall establish specific targets for the project that consider each of the Integrated Building Design and Construction Goals Checklist as defined in Attachment A. The targets for School Department Buildings shall be approved by the School Committee and the Select Board. The targets for all other Town buildings shall be approved by the Select Board.
2. Design teams selected for all facility projects that are subject to this policy shall at a minimum include LEED™ accredited professionals with demonstrated experience in designing buildings that would meet the requirements of this policy and goals.
3. Prior to design, the project stakeholder group will make a recommendation to the Elected Boards whether to pursue the optional application for formal LEED™ Silver certification.
4. The Integrated Building Design and Construction Goals Checklist shall be monitored by the Department of Public Facilities and the Permanent Building Committee throughout the project to ensure that requirements of this policy and the agreed upon, attainable goals are met.
5. At the end of every project phase (feasibility, schematic design, design development, construction documents, and construction), the project design team will prepare an end of Project Phase Report that addresses the design's adherence to or departure from approved scope, cost, schedule and the Integrated Building Construction Goals Checklist as attached. Project success requires that the design approval at the end of the schematic phase and design development phase meet the approved scope, cost and schedule requirements. The Director of Public Facilities will submit these reports to the Elected Board(s). It is recommended that Elected Board liaisons give regular updates to their respective Boards outside of the project phase reporting.
6. The Town shall implement a post occupancy commissioning process when roughly 20% of the one year warranty period remains.
7. Projects must commence with and maintain a sufficient overall project budget and schedule.
8. The Department of Public Facilities and the Permanent Building Committee shall provide the design team with guidance for developing a work plan (consistent with a project specific version of Attachment B) that the design team shall then use to develop a work plan for the project.

#### **V. Policy Revisions and Updates**

1. No changes to the policy, goals, or attachments may be made without the formal approval of both Elected Boards.
2. This policy and its attachments, shall be reviewed and updated by representatives of the Permanent Building Committee and the Sustainable Lexington Committee, at a minimum, for approval by the Elected Boards every three years or sooner as required to reflect current, best practices and performance standards for health, energy, and resilience and any updates to applicable codes and reference materials, as well as to improve stakeholder coordination and project management, budget, and schedule control.<sup>i</sup>

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<sup>i</sup> This policy is to meet the goals set out in Article 33 of ATM 2013: Climate Change Resolution.

# Attachment A

## Integrated Building Design and Construction Goals Checklist

# Integrated Building Design and Construction Goals Checklist

Consult Lexington's Integrated Building Design and Construction Policy for other requirements for New Construction and Major Renovation -Town Buildings

*This document is based on scope features defined in LEED 4.0 with additions / modifications driven by Town of Lexington requirements:*

*adopted 8/27/2018 (pages 9-11)*

*- Lifecycle costing shall be conducted using the Town of Lexington's costing tool.*

**Project Name:**

**Project Address:**

**Project Phase:**

**Report Date:**

**Resilience Level (Circle appropriate level per the Town's Emergency Preparedness and Response Plan maintained by the Town's Fire Chief.**

Note: performance of higher level resilience includes lower-level capabilities.

**Level 1: Public Safety (Police, Fire, Public Services)** -- No interruption of essential services.

**Level 2: Town Shelter** -- Full electrical and thermal power necessary for life safety, food prep / refrigeration, lighting, internet connectivity and charging stations. Operational 24/7. Islanded operation maximizing use of on-site solar and storage.

**Level 3: Continued Operation** -- Full electrical and thermal power necessary for providing healthy conditions during extreme heat/cold conditions, providing lighting, internet connectivity, and plug load charging. Operational during normal occupied hours. Smart load reduction in emergencies, mobile or on-site backup generation to carry load for continued operation.

**Level 4: Asset Preservation** -- Provide power to hold building temperature, provide light and manage building systems

Source	Explanation
1 LEED 4.0_()	Standard LEED items with standard LEED requirements and definitions (LEED Ref#)
2 LEED 4.0_()	Standard LEED items with specific Lexington definitions (LEED Ref #).
3 LEX_()	Specific Lexington requirements (Lex1 through Lex7)

Lex Goal	Explanation
1 Required	Lexington requires this outcome / scope item to be included in the base case project design.
2 Ev & Report	Evaluate the applicability of this item to the project/site and report on benefits and impacts of implementation

LEED SCORING				LEXINGTON MASTER - SCOPE CHECKLIST					
Expected Points		Max Points		Source	Scope Item / Feature / Outcome	Lex Goals	Comments	Cost Impact Scale	
Y	?	N							
			1	LEED 4.0	Integrative Process: This policy shall be integrated into the Planning and Design process from the project's inception. Evaluate the impact of the project on adjacent properties.	Required			
0	0	0	0	Resilience					
			0	LEX_1	Resilience: Buildings shall be designed to deliver services based on the resilience levels defined in the Integrated Design Procedure. The resilience level for a particular building shall be consistent with the planned use of the building in the Town's Emergency Management plan. The level of solar and storage incorporated into the design shall be appropriate to the level or resilience required.	Required			
0	0	0	16	Location and Transportation					
			16	LEED 4.0_LTC1	LEED for Neighborhood Development Location	Ev & Report			

			1	LEED 4.0_LTc2	Sensitive Land Protection	Ev & Report		
			2	LEED 4.0_LTc3	High Priority Site	Ev & Report		
			5	LEED 4.0_LTc4	Surrounding Density and Diverse Uses	Ev & Report		
			5	LEED 4.0_LTc5	Access to Quality Transit	Ev & Report		
			1	LEED 4.0_LTc6	Bicycle Facilities	Ev & Report		
			1	LEED 4.0_LTc7	Reduced Parking Footprint	Ev & Report		
			1	LEED 4.0_LTc8	Green Vehicles: a) Installation of EV chargers per Lexington bylaw 135-5.1.13-11, Electric vehicle (EV) charging. b) Provide renewable energy to support EV charging requirements in kW/kWh.	a) Required by Town bylaw b) Ev & Report		
<b>0 0 0 10 Sustainable Sites</b>								
Y			Req.	LEED 4.0	Construction Activity Pollution Prevention	Required		
Y			Req.	LEED 4.0	Environmental Site Assessment	Required		
			1	LEED 4.0	Site Assessment	Ev & Report		
			2	LEED 4.0_SS4 and LEX_6	Site Development - Protect or Restore Habitat: Site development and landscaping shall comply with the standards defined in Chapter 176, Section 12.6 Landscaping. (Note: the Lexington Planning Department is not involved in reviewing or approving plans or performance.)	Ev & Report		
			1	LEED 4.0_SS5	Open Space	Ev & Report		
			3	LEED 4.0_SS6	Rainwater Management	Ev & Report		
			2	LEED 4.0_SS7 and LEX_7	Heat Island Reduction: In addition to LEED 4.0 SS7, the site design (including building and solar canopy siting) will utilize shading from pre-existing healthy mature trees and new plantings to maximize heat island reduction and will also consider other ecological services provided by trees and their benefits).	Ev & Report		
			1	LEED 4.0_SS8	Light Pollution Reduction	Ev & Report		
			1	LEED 4.0	Site Master Plan	Ev & Report		
			1	LEED 4.0	Joint Use of Facilities	Ev & Report		
<b>0 0 0 11 Water Efficiency</b>								
Y			Req.	LEED 4.0_WE1	Outdoor Water Use Reduction	Required		
Y			Req.	LEED 4.0_WE2	Indoor Water Use Reduction	Required		
Y			Req.	LEED 4.0_WE3	Building-Level Water Metering	Required		
			2	LEED 4.0_WE4	Outdoor Water Use Reduction	Ev & Report		
			6	LEED 4.0_WE5	Indoor Water Use Reduction	Ev & Report		
			2	LEED 4.0_WE6	Cooling Tower Water Use	Ev & Report		
			1	LEED 4.0_WE7	Water Metering	Ev & Report		
<b>0 0 0 33 Energy and Atmosphere</b>								
Y			Req.	LEED 4.0	Fundamental Commissioning and Verification	Required		
Y			Req.	LEED 4.0	Minimum Energy Performance shall be assessed using Lexington's total lifecycle cost model.	Required		
Y			Req.	LEED 4.0	Building-Level Energy Metering	Required		
Y			Req.	LEED 4.0	Fundamental Refrigerant Management	Required		
IBDP 3.4			6	LEED 4.0_EAc1	<b>Enhanced Commissioning - Pursue:</b> Option 1 of this credit: HVAC Commissioning Option 2 of this credit: Building Envelope Commissioning	Required		
IBDP 1.1			18	LEED 4.0_EAc2	<b>Optimize Energy Performance:</b> Target onsite building energy use intensity (kBtu/sq ft) for new buildings of 30% less energy use than ASHRAE 90.1 (current) or better; and for renovations, 20% less energy use than ASHRAE 90.1 (current) or better.	Required		
IBDP 1.2			1	LEED 4.0_EAc3	<b>Advanced Energy Metering:</b> Use advanced metering and sub-metering to report and track hourly interval electricity use data by end-use categories that exceed 10% of total annual electricity consumption and maintain said records for rolling two year periods. (LEED V.4 requires 3 yrs.)	Required		
			2	LEED 4.0_EAc4	<b>Demand Response:</b> Install and properly maintain building management system to track and manage peak demand for energy cost reduction and emergency load shedding.	Required		

IBDP 1.3				3	LEED 4.0_EAc5	<b>Renewable Energy Production (LEED 10%):</b> Maximize onsite renewable energy.	Required		
'IBDP 3.3				-	LEX_2	Utilize energy storage when cost effective to lower peak demand charges and integrate with onsite solar. Evaluate and report on options for campus micro-grids.	Required		
				1	LEED 4.0_EAc6	Enhanced Refrigerant Management	Ev & Report		
				2	LEED 4.0_EAc7	Green Power and Carbon Offsets	Ev & Report		
'IBDP 1.4				-	LEX_3	Evaluate and present options for achieving net zero energy use.	Required		
'IBDP 2.3				-	LEX_4	All electric, zero emissions on site design (excluding fuel for emergency backup power generators). Backup fossil fuel heating systems will require specific approval.	Required		
0				0	0	13	<b>Materials and Resources</b>		
	Y			Req.	LEED 4.0	Storage and Collection of Recyclables: The operation of the completed building should support reuse/zero waste operations with attention to material flows and incorporate design features to achieve these ends. Present design options that meet Lexington's zero waste targets.	Required		
	Y			Req.	LEED 4.0	Construction and Demolition Waste Management Planning	Required		
				5	LEED 4.0	Building Life-Cycle Impact Reduction: Using LEED criteria as well as an embodied carbon calculation, calculate and disclose the carbon impact of selected design options at each design phase, starting with feasibility. Include embodied carbon in the total life-cycle analysis for each design option, including renovations if applicable.	Ev & Report		
				2	LEED 4.0	Building Product Disclosure and Optimization - Environmental Product Declarations	Ev & Report		
				2	LEED 4.0	Building Product Disclosure and Optimization - Sourcing of Raw Materials	Ev & Report		
				2	LEED 4.0	Building Product Disclosure and Optimization - Material Ingredients	Ev & Report		
				2	LEED 4.0	Construction and Demolition Waste Management	Ev & Report		
0				0	0	16	<b>Indoor Environmental Quality</b>		
	Y			Req.	LEED 4.0	Minimum Indoor Air Quality Performance	Required		
	Y			Req.	LEED 4.0	Environmental Tobacco Smoke Control	Required		
	Y			Req.	LEED 4.0	Minimum Acoustic Performance <a href="#">(Schools)</a>	Required		
IBDP 2.2, IBDP 2.4				2	LEED 4.0_IEQc1	<b>Enhanced Indoor Air Quality Strategies :</b> Enhanced Filtration – Install and properly maintain particulate matter filters to protect health of the occupants and as appropriate for building type and use. Maintain indoor CO2 levels per Lexington Board of Health guidelines (BOH Memo dated December 18, 2015, Table 1).	Required		
				3	LEED 4.0_IEQc2	Low-Emitting Materials	Ev & Report		
				1	LEED 4.0_IEQc3	Construction Indoor Air Quality Management Plan	Ev & Report		
				2	LEED 4.0_IEQc4	Indoor Air Quality Assessment	Ev & Report		
				1	LEED 4.0_IEQc5	Thermal Comfort	Ev & Report		
				2	LEED 4.0_IEQc6	Interior Lighting	Ev & Report		
				3	LEED 4.0_IEQc7	Daylight	Ev & Report		
				1	LEED 4.0_IEQc8	Quality Views	Ev & Report		
				1	LEED 4.0_IEQc9	Acoustic Performance	Ev & Report		
				-	LEX_5	<b>Toxics</b> – Avoid the use of red list substances as recommended by Lexington Board of Health (memo dated March 4, 2018), except when no practical alternative is available. Utilize Healthy Building Network (or the equivalent) information in the design and selection of materials and consider using products and services established by the Environmentally Preferable Purchasing program or other successor program of the Commonwealth of Massachusetts or other similar cooperative purchasing programs.	Ev & Report		

0	0	0	6	<b>Innovation</b>				
			5	LEED 4.0	Innovation	Ev & Report		
			1	LEED 4.0	LEED Accredited Professional	Ev & Report		
0	0	0	4	<b>Regional Priority</b>				
			1	LEED 4.0	Regional Priority: Specific Credit	Ev & Report		
			1	LEED 4.0	Regional Priority: Specific Credit	Ev & Report		
			1	LEED 4.0	Regional Priority: Specific Credit	Ev & Report		
			1	LEED 4.0	Regional Priority: Specific Credit	Ev & Report		
0	0	0	110					

Certified: 40 to 49 points

Silver: 50 to 59 points

Gold: 60 to 79 points

Platinum: 80 to 110

## Attachment B

# Integrated Design Policy Early Design Phase Workplan



## **Integrated Design Policy Attachment B**

### **Early Design Phase Workplan**

#### **Introduction:**

Lexington seeks excellence on its capital projects. A truly excellent project for Lexington will be one that provides an extraordinary functional and social environment that is sustainable, healthful, and resilient. Further, it is expected to be forward looking and flexible enough to be adaptable for new work models, maintainable, and expandable.

#### **Early-Phase Design:**

The Town of Lexington firmly believes that the **very early Phases of design** are crucial to a project's success and attaining excellence. This is the time when concepts and expectations need to be brainstormed in an **uninhibited** manner, explored, and evaluated. Near the beginning of the project, the full A/E [Architect/Engineer] team needs to contribute on issues related to massing, orientation, MEPFP infrastructure, sustainability, maintainability, healthfulness, and resilience. The Project needs to brainstorm learning opportunities, what physical environments enhance the function of the building being designed, technology, flexibility, future expansion options, phasing, constructability, plus granting and reimbursement opportunities.

This early phase process will require careful management, inclusion, tabulation, evaluation, and presentation. Conceptual pricing and comparing options at the conceptual Phase take ingenuity. The mechanics and logistics of this process need to be part of a negotiation with the A/E ultimately selected for the project as well as the OPM [Owners Project Manager, if any].

#### **Integrated Design Policy**

The Town strives for excellence on all its capital projects. Some of the performance criteria are spelled out in the "LEED Lexington" Appendix A to the Town's "Integrated Design Policy." Other criteria are project specific and are flushed out as projects evolve; Lexington is striving to have this done early in the project.

#### **Feasibility Module Workplan**

The Consultant Team shall develop and then review a draft **Early Design Phase** workplan with the Department of Public Facilities (DPF) and the Permanent Building Committee (PBC) by the end of the first month under contract. The purpose of the plan is for the consultant team to communicate with the Town (staff, committees, commissions, boards, and residents) what is to be done when, so the process can be executed more efficiently, and the outcome can be the best it can be. The Work Plan is to reflect the requirements of the Town of Lexington as expressed in the Integrated Design Policy and other documents provided by the Town as well as funding agency requirements [if any].

Required revisions to the workplan will be presented for review and acceptance by DPF and PBC by the end of the second month of contract. The accepted workplan will be the roadmap for the Early Design Phase—revisions to the workplan will require written approval by DPF and PBC.

Similar workplans will be required for subsequent Design Phases.

The Consultant Team services and therefore the Workplan needs, as needed, to include activities to address issues and concerns as follows:

- All activities, milestones, meetings, and deliverables related to the project including funding agency requirements [if any].
- Early Design Phase to include studies for new construction options and/or add/reno options that include:
  - Conceptual schedules for the full project and specifically for the design phase under contract.
    - Create a draft project master schedule showing each project phase through project closeout. It shall include a projection of when major construction bid(s) will be advertised.
    - Workplan shall be in the form of a cpm schedule and not an excel graphic. Progress shall be updated and reported monthly. Consultant to provide schedule data file for Town review.
    - 4-week workplan look ahead shall be submitted monthly
  - Conceptual costs escalated to bid date(s) contained in the conceptual full project schedule,
  - Review and evaluation of program,
  - Establishment of key project objectives and criteria,
  - Building massing and orientation studies,
  - Conceptual analysis of photovoltaic (PV) potential (building and site),
  - Building and land use showing construction phasing and land usage for laydown, building construction, pedestrian & vehicular traffic, and onsite recreation facilities.
  - Construction logistics and phasing
  - Evaluation of suitability of budget versus program.
  - The A/E team must offer sufficient information to use as a basis to conduct an Early Design Phase Value Management workshop that systematically gathers information, creatively brainstorms, and evaluates options to arrive at a consensus with the public, staff, committees, commissions, and boards. The aim is to maximize input in a timely manner on appropriate Integrated Design Process items and project “uses” beyond the traditional uses scope, engage voter support early, and maximize project aims within a reasonable budget.
- Early Design Phase studies to include analysis of draft building space program, conceptual costs, conceptual schedules.
- Early Design Phase options matrix comparing options
- Executive Summary Reports