Medford High School

Sustainability and MEP Systems Advisory Team Meeting

Meeting #4

04/29/2026



smma

LeftField

THE RIGHT CHOICE IN PROJECT MANAGEMENT

Meeting #4 Agenda

- Welcome
- Advisory Team Meeting #3 Recap
  - LEEDv5 Preliminary Overview
- Next Steps

Sustainability – LEEDv5 Overview

- Integrative Process, Planning, and Assessments
- Location and Transportation
- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Environmental Quality
- Project Priorities



Sustainability – LEEDv5 Overview

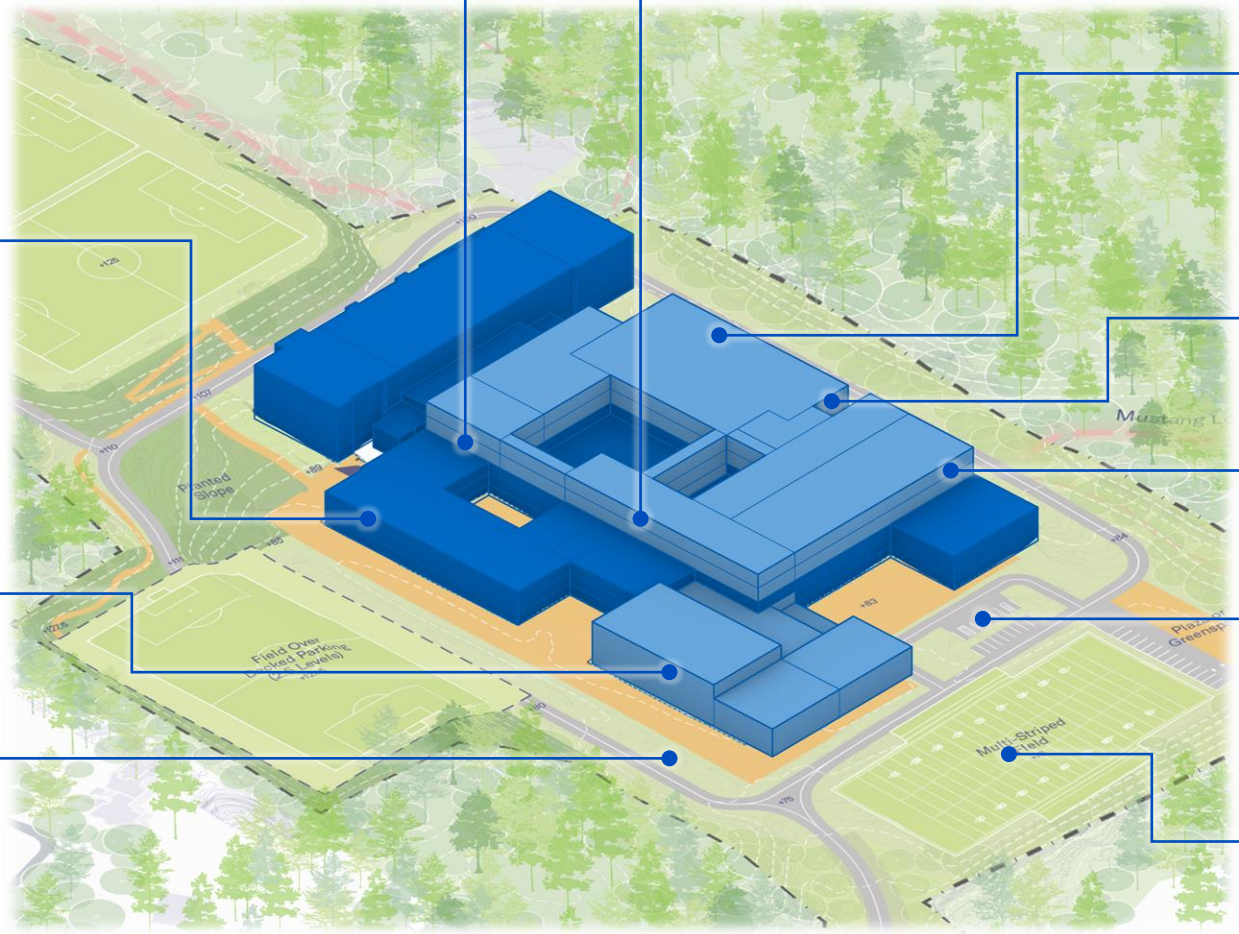
High-Efficient All-Electric HVAC Systems

High-Performance Envelope with Triple-Glazed Windows (Optimize Energy Performance)

Building Life-Cycle Impact (Embodied Carbon) Reduction

Low-Emitting and Sustainable Materials

Urban Heat Island Reduction



Renewable Energy (Solar PV)

Indoor Water Use Reduction

Daylight and Quality Views

Green Vehicles (Electric Vehicle Charging Stations)

Open Space

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Sustainability - LEEDv5 Overview

Integrative Process, Planning & Assessments		1
Prereq	Climate Resilience Assessment	Required
Prereq	Social Equity Assessment	Required
Prereq	Carbon Assessment	Required
Credit	Integrative Design Process	1

Location & Transportation		15
Credit	Sensitive Land Protection	1
Credit	Equitable Development	2
Credit	Compact and Connected Development	6
Credit	Active Travel Facilities	2
Credit	Transportation Demand Management	2
Credit	Electric Vehicles	2

Sustainable Sites		11
Prereq	Minimized Site Disturbance	Required
Prereq	Resilient Site Design	Required
Credit	Protect and Restore Biodiverse Habitat	2
Credit	Accessible Open Space	1
Credit	Rainwater Management	3
Credit	Enhanced Resilient Site Design	2
Credit	Heat Island Reduction	2
Credit	Light Pollution and Bird Collision Reduction	1

Water Efficiency		9
Prereq	Water Metering and Reporting	Required
Prereq	Minimum Water Efficiency	Required
Credit	Enhanced Water Efficiency	6
Credit	Water Reuse	2
Credit	Water Metering and Leak Detection	1

Energy & Atmosphere		33
Prereq	Operational Carbon Projection and Decarbonization Plan	Required
Prereq	Minimum Energy Efficiency	Required
Prereq	Fundamental Commissioning	Required
Prereq	Energy Metering and Reporting	Required
Prereq	Fundamental Refrigerant Management	Required
Credit	Electrification	5
Credit	Reduce Peak Thermal Loads	5
Credit	Enhanced Energy Efficiency	10
Credit	Renewable Energy	5
Credit	Enhanced and Ongoing Commissioning	4
Credit	Grid Interactive	2
Credit	Enhanced Refrigerant Management	2

Materials & Resources		18
Prereq	Planning for Zero Waste Operations	Required
Prereq	Assess Embodied Carbon	Required
Credit	Building and Materials Reuse	3
Credit	Reduce Embodied Carbon	6
Credit	Low Emitting Materials	2
Credit	Optimized Building Products	5
Credit	Construction and Demolition Waste Diversion	2

Indoor Environmental Quality		13
Prereq	Fundamental Air Quality	Required
Prereq	No Smoking or Vehicle Idling	Required
Prereq	Building Accessibility	Required
Credit	Enhanced Air Quality	1
Credit	Occupant Experience	6
Credit	Connecting with Nature	1
Credit	Enhanced Building Accessibility	1
Credit	Resilient Spaces	2
Credit	Air Quality Testing and Monitoring	2

Project Priorities & Innovation		10
Credit	Project Priorities	9
Credit	LEED Accredited Professional	1

Total	Possible Points:	110

Certified	40 points	Gold	60 points
Silver	50 points	Platinum	80 points

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Sustainability –LEEDv5 Overview

- Project registration during Design Development phase, in early 2027.
- LEEDv4 registration closing June 2026 and will not be available by the time of project registration.
- Project targets:
  - LEEDv5 Silver (MSBA)
  - Goal for LEEDv5 Gold.

LEEDv5	LEEDv5 Silver (MSBA Base Req.) [50-59 points]	LEED Gold [60-79 points]	LEEDv5 Platinum [80+ points]
Integrated Process, Planning and Assessments	1	1	1
Location & Transportation	7	7	10
Sustainable Sites	9	9	11
Water Efficiency	4	4	6
Energy & Atmosphere	16	17	22
Materials & Resources	8	10	12
Indoor Environmental Quality	6	7	8
Project Priorities	6	8	10
Total	**57**	**63**	**80**

Sustainability – LEEDv5 Overview

LEEDv4 Platinum Requirements

- 80+ points

LEEDv5 Platinum Requirements

- 80+ points AND the following:
  - Fully electrified
  - Maximize energy efficiency (achieve min 24% savings from ASHRAE 90.1-2019 baseline)
  - 100% Renewable Energy
  - 20% reduction in Embodied Carbon

LEEDv5 – Integrated Process, Planning, and Assessments (IP)

New Requirements
Revised

Yes	Maybe	No	Integrative Process, Planning and Assessments (IP)	1
☑	☐	☐	IPp1 Climate Resilience Assessment	Required
☑	☐	☐	IPp2 Human Impact Assessment	Required
☑	☐	☐	IPp3 Carbon Assessment	Required
1	0	0	IPc1 Integrative Design Process	1

LEEDv5 vs. v4 Design & Certification Impacts

- Additional early carbon and climate assessments are required (prerequisites) - no contribution to LEED points

LEEDv4

Y	?	N			
1			Credit	Integrative Process	1

LEEDv5 – Location & Transportation (LT)

New Requirements
Revised

Yes	Maybe	No	Location and Transportation (LT)	15
1	0	0	LTc1 Sensitive Land Protection	1
1	1	0	LTc2 Equitable Development	2
1	1	4	LTc3 Compact and Connected Development	6
2	1	1	LTc4 Transportation Demand Management	4
2	0	0	LTc5 Electric Vehicles 10% installed	2

LEEDv5 vs. v4 Design & Certification Impacts

- Threshold increase from 4% to 10% EVs installed – additional 1 point from v4 (2 points total)

LEEDv4

Y	?	N			
2	2	26	**Location and Transportation**		15
		15	Credit	LEED for Neighborhood Development Location	15
1			Credit	Sensitive Land Protection	1
		2	Credit	High Priority Site	2
		5	Credit	Surrounding Density and Diverse Uses	5
		4	Credit	Access to Quality Transit	4
	1		Credit	Bicycle Facilities	1
	1		Credit	Reduced Parking Footprint	1
1			Credit	Green Vehicles - 5% Installed	1

LEEDv5 – Sustainable Sites (SS)

● *New Requirements*
○ *Revised*

	Yes	Maybe	No	Sustainable Sites (SS)	11
○	☑	☐	☐	SSp1 Minimize Site Disturbance	Required
○	1	1	0	SSc1 Biodiverse Habitat	2
●	1	0	0	SSc2 Accessible Outdoor Space	1
○	3	0	0	SSc3 Rainwater Management	3
●	2	0	0	SSc4 Enhanced Resilient Site Design	2
○	2	0	0	SSc5 Heat Island Reduction white-membrane roof	2
○	0	1	0	SSc6 Light Pollution Reduction	1
	Y	**?**	**N**		

7	**3**	**2**	**Sustainable Sites**		**12**
Y			Prereq	Construction Activity Pollution Prevention	Required
Y			Prereq	Environmental Site Assessment	Required
1			Credit	Site Assessment	1
	1	1	Credit	Site Development - Protect or Restore Habitat	2
1			Credit	Open Space	1
2		1	Credit	Rainwater Management	3
1	1		Credit	Heat Island Reduction	2
	1		Credit	Light Pollution Reduction	1
1			Credit	Site Master Plan	1
1			Credit	Joint Use of Facilities	1

LEEDv5 – Sustainable Sites (SS)

LEEDv5 vs. v4 Design & Certification Impacts

- Site Assessment no longer a credit in v5 (required as part of pre-requisite).
- Joint Use of Facilities no longer a credit in v5.
- Site Master Plan no longer a credit in v5.
- Bird-Friendly Glass – opportunity for additional 1 point from v4.
- Accessible Outdoor Space is new credit with modified criteria from v4 Open Space.
- Enhanced Resilient Site Design is new credit.

LEEDv5 – Sustainable Sites (SS)

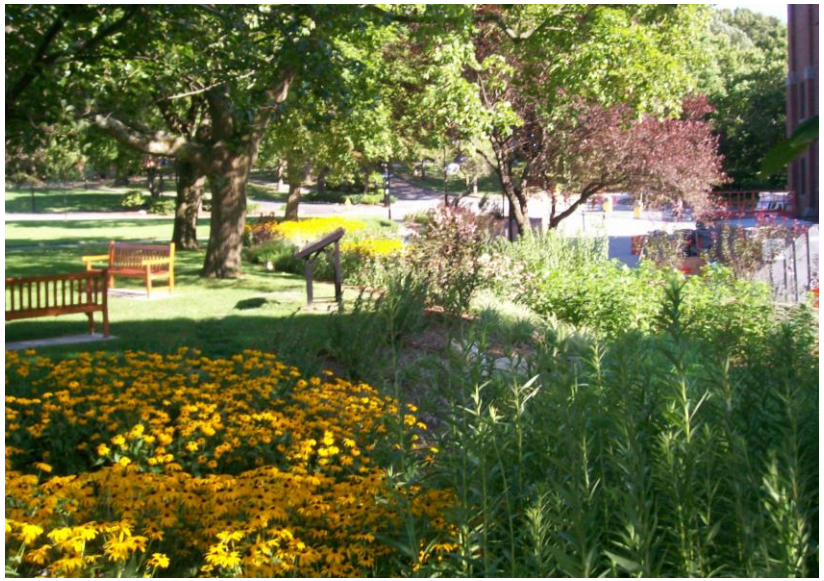
Accessible Outdoor Space, Rainwater Management, Enhanced Resilient Site, Heat Island Reduction (SSc2-SSc5)



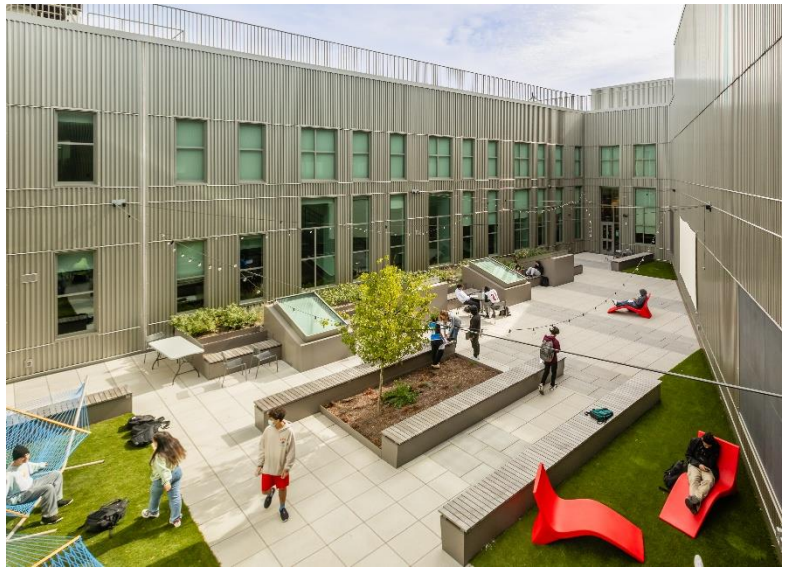
Outdoor Learning Classroom, Heat Island Reduction (Waltham HS)



Rainwater Harvesting (Somerville HS)



Bioswale



Outdoor Learning Classroom, Heat Island Reduction (Somerville HS)

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LEEDv5 – Water Efficiency (WE)

● *New Requirements*
○ *Revised*

Yes	Maybe	No	Water Efficiency (WE)		9
☑	☐	☐	WEp1	Water Metering and Reporting	Required
☑	☐	☐	WEp2	Minimum Water Efficiency	Required
1	0	0	WEc1	Water Metering and Leak Detection	1
3	2	3	WEc2	Enhanced Water Efficiency 30% indoor water reduction + outdoor potable water reduction	8

LEEDv5 vs. v4 Design & Certification Impacts

- Scope of metering revised to include both potable and alternative water sources.
- Indoor and Outdoor water use reduction criteria is Enhanced Water Efficiency in v5 – less points available in category.

LEEDv4

Y	?	N			
5	**2**	**5**	**Water Efficiency**		**12**
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
1	1		Credit	Outdoor Water Use Reduction	2
3	1	3	Credit	Indoor Water Use Reduction	7
		2	Credit	Cooling Tower Water Use	2
1			Credit	Water Metering	1

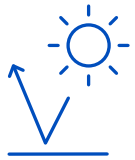
LEEDv5 – Energy & Atmosphere (EA)

● New Requirements
○ Revised

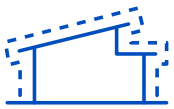
	Yes	Maybe	No	Energy and Atmosphere (EA)	33
●	☑	☐	☐	EAp1 Operational Carbon Projection and Decarbonization Plan	Required
○	☑	☐	☐	EAp2 Minimum Energy Efficiency	Required
○	☑	☐	☐	EAp3 Fundamental Commissioning MSBA mandated	Required
○	☑	☐	☐	EAp4 Energy Metering and Reporting	Required
○	☑	☐	☐	EAp5 Fundamental Refrigerant Management	Required
●	1	2	2	EAc1 Electrification	5
●	1	1	3	EAc2 Reduce Peak Thermal Loads	5
○	5	2	3	EAc3 Enhanced Energy Efficiency	10
○	3	1	1	EAc4 Renewable Energy Solar PV system	5
○	4	0	0	EAc5 Enhanced Commissioning MSBA mandated	4
○	1	0	1	EAc6 Grid Interactive Demand Response sequence of operations	2
○	1	0	1	EAc7 Enhanced Refrigerant Management	2

Predicted EUI Goal

30-35 kBtu/SF/Yr. [Goal]



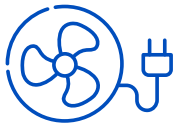
Passive Strategies



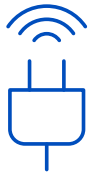
Super-insulated Enclosure



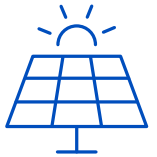
Triple Glazing



All-Electric HVAC



Plug Load Management



Solar PV

LEEDv5 – Energy & Atmosphere (EA)

LEEDv5 vs. v4 Design & Certification Impacts

- Moving from ASHRAE 90.1-2010 to ASHRAE 90.1-2019 or 2022 versions.
- Additional Fundamental and Enhanced Cx requirements - CxP must be designated during predesign or very early in design phase.
- Electrification and Reduce Thermal Peak Loads are new credits.
- Demand Response is now Grid interactive in v5 with modified criteria.

LEEDv4

Y	?	N			
23	**6**	**4**	**Energy and Atmosphere**		**31**
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
6			Credit	Enhanced Commissioning	6
14	2		Credit	Optimize Energy Performance	16
1			Credit	Advanced Energy Metering	1
1	1		Credit	Demand Response	2
1	2	2	Credit	Renewable Energy - v4.1 Green Energy credit (up to 5 points)	3
	1		Credit	Enhanced Refrigerant Management	1
		2	Credit	Green Power and Carbon Offsets - (see Renewable Energy)	2

LEEDv5 – Energy & Atmosphere (EA)

Renewable Energy (EAc4)

Solar PV Area Opportunities:

- Roof Mounted Array (Low angle)
- Parking Array Extensions [limited]
- Walkways, Outdoor Classrooms Arrays
- Roof High Canopy Array
- Roof Occupied Area (Patio) Canopy Array
- Building Mounted BIPV: Awnings, Wall, Roof screens

Preliminary Solar PV Assessment:

EUI 35

6.2-6.5 MW



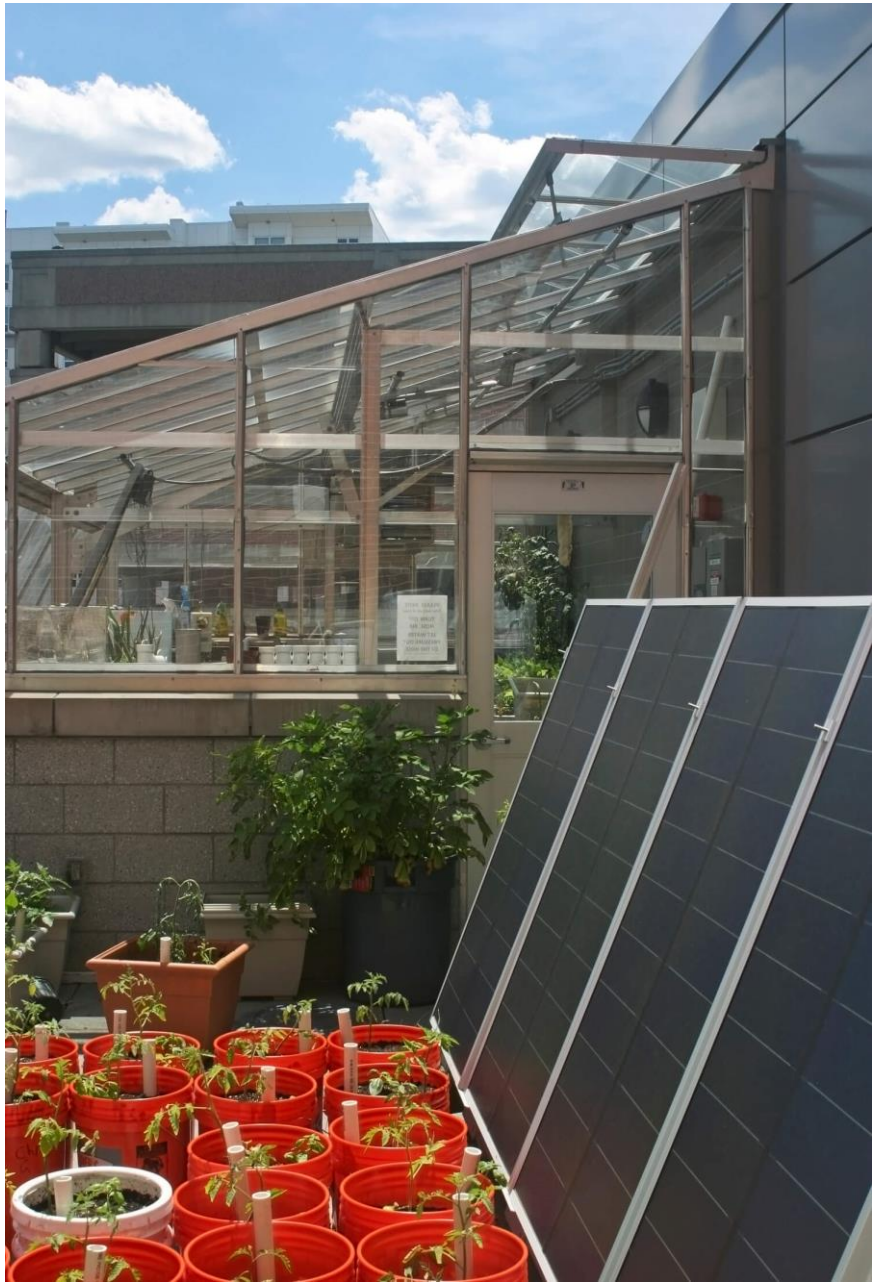
Solar Photovoltaic Panels on Roof (North Middlesex Regional High School)

LEEDv5 – Energy & Atmosphere (EA)

Renewable Energy (EAc4)



Solar Photovoltaic Panels - Parking Canopies (Lincoln School)



Solar Thermal System – CTE Program (Quincy High School)

LEEDv5 – Materials & Resources (MR)

● *New Requirements*
○ *Revised*

	Yes	Maybe	No	Materials and Resources (MR)	18
○	☑	☐	☐	MRp1 Planning for Zero Waste Operations	Required
●	☑	☐	☐	MRp2 Quantify and Assess Embodied Carbon	Required
●	1	1	1	MRc1 Building and Materials Reuse	3
○	2	1	3	MRc2 Reduce Embodied Carbon	6
○	1	1	0	MRc3 Low-Emitting Materials	2
●	2	1	2	MRc4 Building Product Selection and Procurement Red List materials optimization	5
○	2	0	0	MRc5 Construction and Demolition Waste Diversion 95% diversion	2

LEEDv4

Y	?	N			
7	**4**	**2**	**Materials and Resources**		**13**
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
2	1	2	Credit	Building Life-Cycle Impact Reduction	5
1	1		Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
1	1		Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1	1		Credit	Building Product Disclosure and Optimization - Material Ingredients	2
2			Credit	Construction and Demolition Waste Management	2

LEEDv5 – Materials & Resources (MR)

LEEDv5 vs. v4 Design & Certification Impacts

- Requirement to provide space for organics/food waste diversion post-occupancy.
  - Collection required for all batteries, mercury-containing lamps, and e-waste.
  - Added requirement for Zero Waste Operations Planning
- Quantify and Assess Embodied Carbon (Building Life-Cycle Assessment) is prerequisite in v5.
- Building Materials and Reuse is new credit.
  - 20% - 1 point, 35% - 2 points, 50% - 3 points
- Building Product Disclosure – EPDs, Sourcing of Raw Materials (Recycled Content), HPDs combined in Common Materials Framework in v5.
- Low-Emitting Materials credit now in v5 MR category– less available points.

LEEDv5 – Materials & Resources (MR)

Reduce Embodied Carbon, Low-Emitting Materials, Building Product Selection & Procurement (MRc2-4)

- Optimization of Healthy Materials
  - Red List Approved/Free
  - Common Materials Framework (CMF)
  - Six Classes of Harmful Chemicals

- Interior Materials Focus: Areas where humans are interacting with materials from the built environment.
  - Floors
  - Walls
  - Ceilings

- Embodied Carbon Reduction Strategies
  - High Recycled Content in Steel and Concrete
  - Low-Carbon Exterior Building Materials (insulation, brick)
  - Low-Carbon Interior Materials (flooring, finishes, gypsum)
  - Exposed Ceilings (where applicable)





LEEDv5 – Indoor Environmental Quality (EQ)

New Requirements
Revised

	Yes	Maybe	No	Indoor Environmental Quality (EQ)		13
○	☑	☐	☐	EQp1	Construction Management	Required
○	☑	☐	☐	EQp2	Fundamental Air Quality	Required
○	☑	☐	☐	EQp3	No Smoking or Vehicle Idling	Required
○	1	0	0	EQc1	Enhanced Air Quality	1
●	2	1	4	EQc2	Occupant Experience thermal comfort, daylight optimization	7
●	1	0	0	EQc3	Accessibility and Inclusion	1
●	1	1	0	EQc4	Resilient Spaces operable windows in occupied spaces	2
○	1	0	1	EQc5	Air Quality Testing and Monitoring	2

LEEDv5 – Indoor Environmental Quality (EQ)

LEEDv5 vs. v4 Design & Certification Impacts

- Mandated No Vehicle Idling and Construction IAQ Management Plan are prerequisites. (IAQ = no pts.)
- Low-Emitting Materials credit no longer in this category – 3 points not available
- Thermal Comfort, Interior Lighting, Daylight, Quality Views credits incorporated to “Occupant Experience”
- Air Quality Testing & Monitoring (required for MSBA reimbursement)

LEEDv4

Y	?	N			
8	**5**	**3**	**Indoor Environmental Quality**		**16**
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
Y			Prereq	Minimum Acoustic Performance	Required
2			Credit	Enhanced Indoor Air Quality Strategies	2
2	1		Credit	Low-Emitting Materials	3
1			Credit	Construction Indoor Air Quality Management Plan	1
1	1		Credit	Indoor Air Quality Assessment	2
1			Credit	Thermal Comfort	1
1	1		Credit	Interior Lighting	2
	1	2	Credit	Daylight	3
	1		Credit	Quality Views	1
		1	Credit	Acoustic Performance	1

LEEDv5 – Indoor Environmental Quality (EQ)

Occupant Experience (EQc2)



Biophilic Environment (Lincoln K-8 School)



Quality Views & Daylight (Lincoln K-8 School)



Sound Environment / Acoustic Comfort (Quincy High School)



Daylight, Interior Lighting in Interiors Spaces (Waltham High School)

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LEEDv5 – Indoor Environmental Quality (EQ)

Accessibility & Inclusion (EQc3)



Differentiated spaces to support different learning styles



Multi-lingual signage give students a sense of belonging

LEEDv5 – Project Priorities (PR)

Yes	Maybe	No	Project Priorities (PR)	10
			PRc1 Project Priorities	9
1	0	0	Project Priority 1: *PRINc4 Ingrating Energy Modeling in the Design Process*	
1	0	0	Project Priority 2: *PRINc2 Joint Use of Facilities*	
1	0	0	Project Priority 3: *MRpc183 Design for Circularity*	
1	0	0	Project Priority 4: *MPRpc180 Triple Bottom Line-Informed Design*	
1	0	0	Project Priority 5: *MRpc181 Multi-Attribute Structure, Enclosure, Hardscape*	
0	1	0	Project Priority 6: *MRpc185 Multi-Attribute Mechanical and Electrical and Plumbing Products (TBD)*	
0	1	0	Project Priority 7: *Exemplary Performance - Construction and Demolition Waste Diversion (TBD)*	
0	1	0	Project Priority 8 *Exemplary Performance - Reduce Embodied Carbon (TBD)*	
0	1	0	Project Priority 9: *PRpc168 Resilience Information Summary or Regional Priority*	
1	0	0	PRc2 LEED AP	1

LEEDv5 – Project Priorities (PR)

LEEDv5 vs. v4 Design & Certification Impacts

- Still up to 10 points, however Regional Priority credits removed
- Exemplary Performance for EPDs & HPDs no longer available
- Combined set of old and new innovative credits

LEEDv4

Y	?	N			
6	**0**	**0**	**Innovation**		**6**
5			Credit	Innovation: **95% CWMP, Low Merc. Lamps, Exempl. HPDs & EPDs,MRpc103 pilot cr.**	5
1			Credit	LEED Accredited Professional	1
4	**0**	**0**	**Regional Priority**		**4**
1			Credit	Regional Priority: Building LCA - MR credit (Tally)	1
1			Credit	Regional Priority: Optimize energy performance (8 points min)	1
1			Credit	Regional Priority: Rainwater Management (2 pts min)	1
1			Credit	Regional Priority: Renewable energy (2 pts min)	1

Sustainability –LEEDv5 Overview

Project target:

- LEEDv5 Silver (MSBA)
- LEEDv5 Gold: Goal
- LEEDv5 Platinum: additional 20+ points

LEEDv5	LEEDv5 Silver (MSBA Base Req.) [50-59 points]	LEEDv5 Gold [60-79 points]	LEEDv5 Platinum [80+ points]
Integrated Process, Planning and Assessments	1	1	1
Location & Transportation	7	7	10
Sustainable Sites	9	9	11
Water Efficiency	4	4	6
Energy & Atmosphere	16	17	22
Materials & Resources	8	10	12
Indoor Environmental Quality	6	7	8
Project Priorities	6	8	10
Total	**57**	**63**	**80**

Thank you.



Sustainability and MEP Systems – LEEDv5 Silver Certification

Sustainable Sites

Stormwater Management Optimization

Urban Heat Island Reduction

- Light Colored Roof & Paving
- Green Vegetated Roofs
- Trees for Shading

Optimizing green/vegetated areas

Transportation Demand Management

- Bicycle Storage

Green Vehicles

- Carpooling
- EV Charging Station (2% installed)

Water Efficiency

Outdoor Water Reduction

- Low/No Irrigation
- Native Plants

Indoor Water Reduction

- 20% Min. Reduction [MSBA]
- 30-40% Reduction Goal [LEEDv5 Silver]

Water Sub-Metering

Energy and Renewables

40% > ASHRAE 90.1-2019/2022

- MSBA required threshold (# points)
- LEEDv5 is Source Energy Based
- Supported through the MA Specialized Stretch Code
- Siting/Orientation
- Passive Strategies

Electrification

Advanced Energy Metering

Grid Interactive

- Demand Response Readiness

Enhanced Ozone-Friendly Refrigerants

Commissioning –MEP/BE Cx [MSBA/LEEDv5]

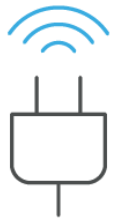
Renewable Energy

Predicted EUI Goal

25-35

kBtu/SF/Yr. [Goal]

Realistic impact of vocational trade programs consideration



Plug Load Management



Super-insulated Enclosure



Triple Glazing



Passive Strategies



All-Electric HVAC

Sustainability and MEP Systems – LEEDv5 Silver Certification

Healthy/Low Carbon Materials

Reduce Embodied Carbon
- LEEDv5 LCA credit
- ***Medford: TBD % Goal***
- Low Carbon Materials
- Environmental Product Declarations (EPDs)

Construction Waste Management
- 95% Goal

Building Products Selection
- Recycled Content
- FSC Wood
- Regional Materials
- Health Product Declaration (HPDs)
- Declare/ Red List

Low-Emitting Materials

Zero Waste Operations
- Recycling Planning and Program

Indoor Environmental Quality

Daylight Optimization

Enhanced Air Quality Strategies

Occupant Experience
- Interior Lighting Design
- Acoustical Performance
- Thermal Comfort
- Access to Views

Construction IAQ Practices, including Flush Out

Project Priorities/Innovative Design

Joint Use of Facilities
Integrating Energy Modeling in the Design Process
Multi-Attribute Structure, Enclosure, Hardscape, and other Building Materials
Triple-Bottom Line Informed Design
Design for Circularity
LEED AP

Sustainability and MEP Systems – Proposed Additional Goals

Resiliency/Healthfulness

Climate Resiliency

- Passive Strategies
- Solar PV and Battery Storage Installation
- EV charging beyond LEED - **Medford % TBD Goal**
- Embodied Carbon Reduction - **Medford % TBD Goal**
- Others ?

Healthfulness: *[Beyond LEED]*

- Access and Interaction with Nature
- Red List Materials Screening *[beyond LEED]*
- Biophilia
- Ventilation Flush Out at/prior occupancy

Environmental Literacy

- Outdoor Classrooms
- Educational Program Integration:
  - Signage
  - STEM & Comprehensive Programs



URBAN FOREST
Heat island mitigation
Habitat Connectivity
Air Quality Improvement

URBAN MEADOW
Habitat Connectivity
Pollinator Habitat





EMERGENT WETLAND
Flood Control
Water Quality Improvement
Biodiversity Support

Environmental Literacy

- Green Educational Program
- Outdoor Classrooms
- Occupant Behaviors and Monitoring

- Green Charrette & Workshops
- **Students' Engagement in the Design Process**
- **Vocational Trade Programs integration with Sustainable design/renewable energy trades**



