https://www.stoughtonschools.org

December 7, 2023

- Project Overview
- LEED Goals & MSBA Incentives
- Sustainable Sites
- Building Envelope
- Building Systems
- Incentives
- Building Materials

The New Elementary School | stoughton.ma
Stoughton Energy & Sustainability Meeting

DRA

VERTEX®

Tim Bonfatti
Senior Advisor

Chin Lin, AIA
Senior Project Manager
LEED AP BD+C

Eric Rubin
Assistant Project Manager

Carl Franceschi, AIA
Principal in Charge
LEED AP

Courtney Southwick
Project Manager-Associate
LEED AP BD+C | WELL AP

Ann Marie Procopio
Interior Designer IIDA

Massachusetts School Building Authority

Dr. Agnes Vorbrodt, RA
Architect, LEED AP, WELL AP

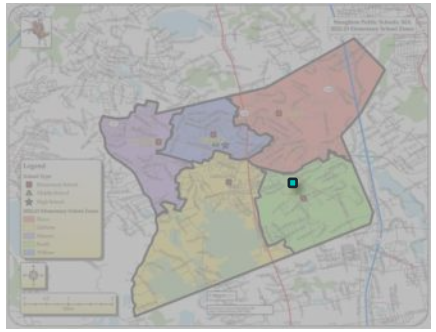
David Warner, PLA
Warner Larson
Landscape Architects

Wayne Mattson, PE
President – Mechanical Engineer

meet some of our **collaborative planning & design team members**

site considerations

topography & surroundings



park street | MA27

residential

Haynes rd.

residential

wetlands

28 acres

summer

perrenial stream

fano drive

15 acres

power lines

7.16 acres

residential

N

WARNER LARSON
LANDSCAPE ARCHITECTS

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PREFERRED OPTION

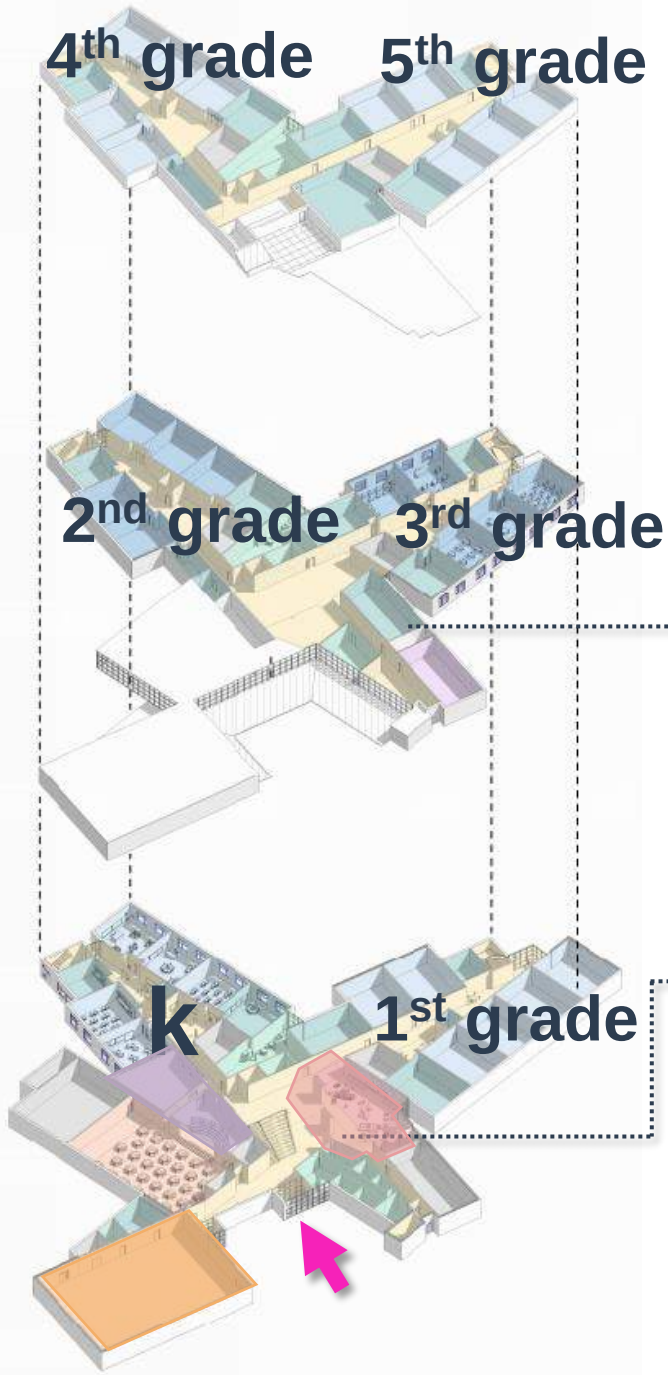
Breaking Down 3 Stories: Classroom Neighborhoods

Program Key

- LEARNING COMMONS
- GYM / PE
- CLASSROOMS
- SPED CLASSROOMS
- BREAKOUT / CIRCULATION
- MUSIC / STAGE
- ADMINISTRATION
- CAFETERIA / KITCHEN
- IT / MECH /CUST
- OUTDOOR LEARNING

Upper Elementary
2-5

Lower Elementary
Kinder and First



STEM room
Overlooks Commons

learning commons
Heart of the School

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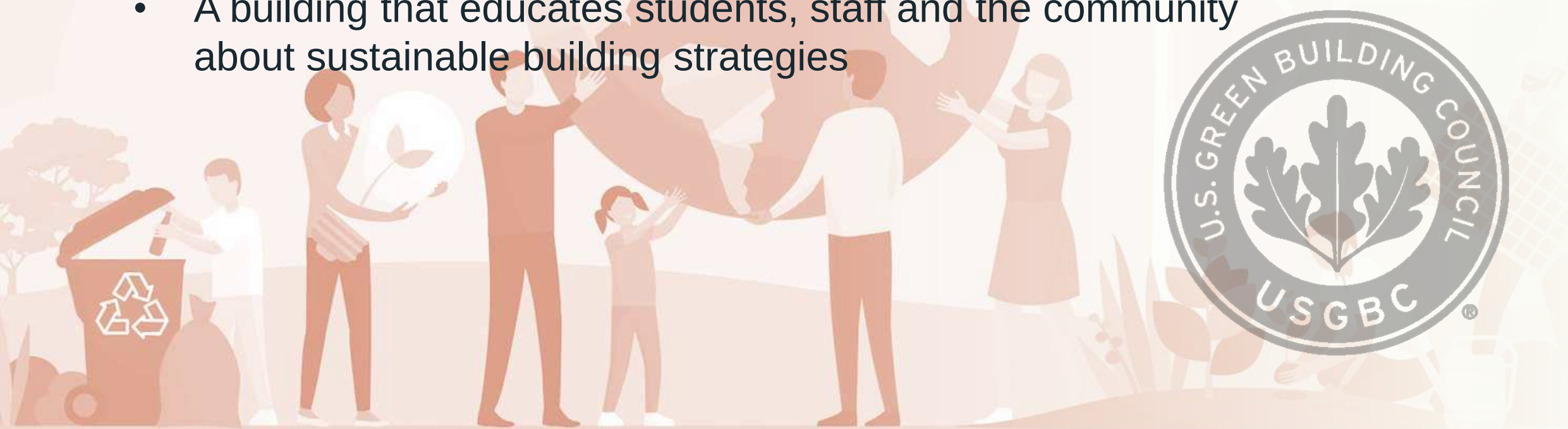
Project Goals | sustainable solutions

- Target 4% reimbursement as noted in Project Advisory 81
- LEED Silver (v4)
- All Electric Building: ‘Net Zero Ready’
- Air Quality Awareness
- Mindful Material Selection
- A building that educates students, staff and the community about sustainable building strategies



MSBA | 2023 Sustainable Policy (Project Advisory 81)

Using LEED-S, for no additional reimbursement, achieve a **minimum of "Silver,"**

including a **minimum total of three points from the following three categories**:

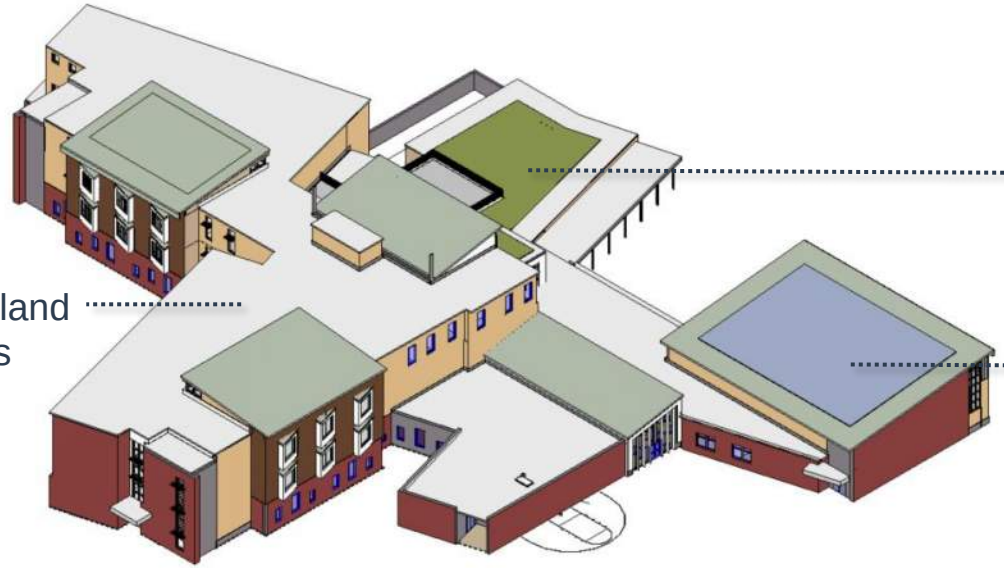
- **MR Building Product Disclosure and Optimization - Material Ingredients**
- **IEQ - Low Emitting Materials**
- **IEQ – Indoor Air Quality Assessment**

Meet the minimum energy efficiency requirements described in the MA DOER "Stretch Code Green Community" standards.

design patterns | envelope strategies

solar orientation

allows exposure for classrooms & pv facing south on the sloped roofs



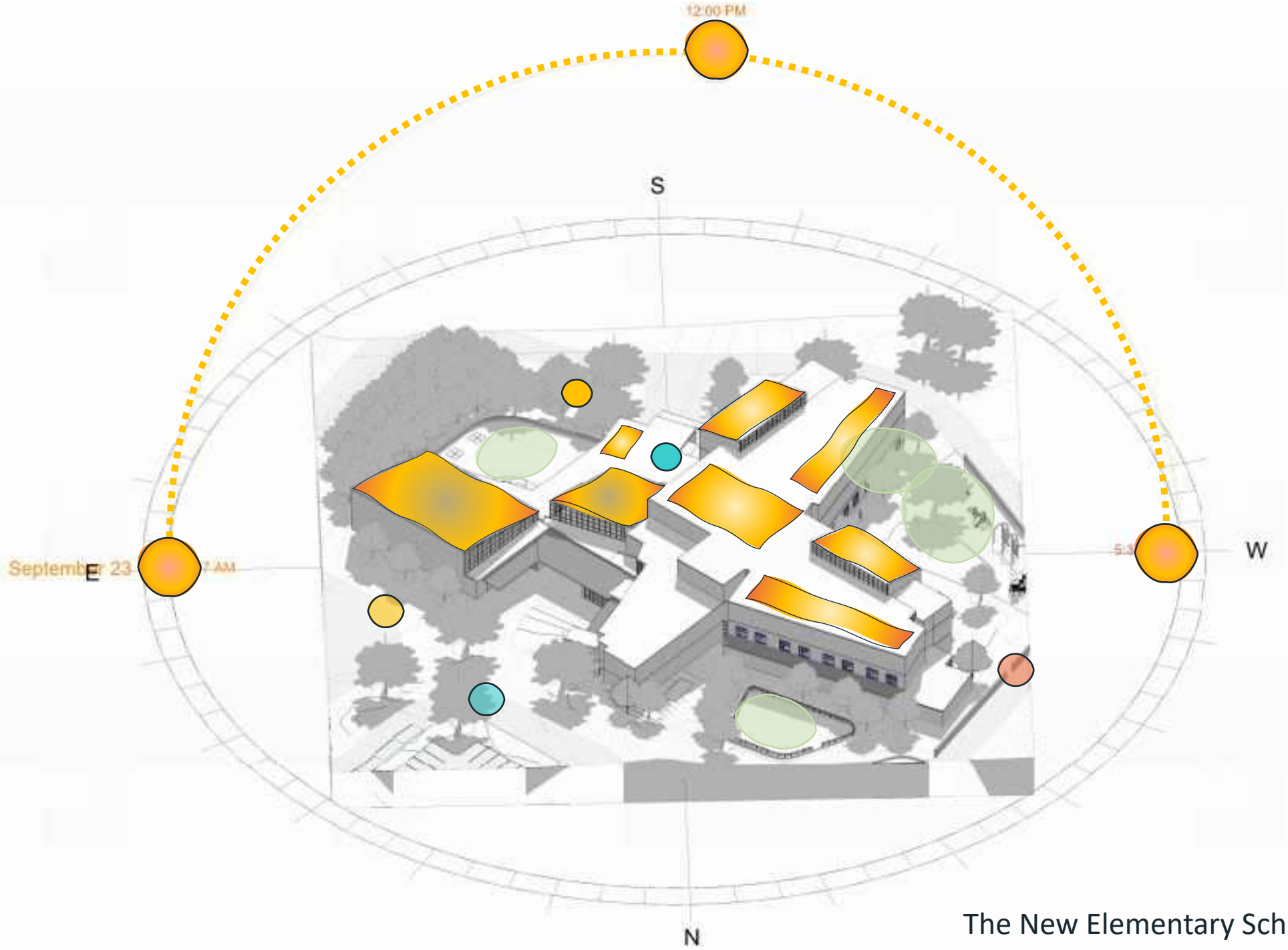
White roof minimizes heat island effect – minimizing utility bills

roof garden

Insulating, reduces stormwater runoff and minimizes heat island effect

photovoltaics

system reduces overall building demand on local utility company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integrated approach to system design

simplify

Efficient, Uncomplicated, Maintainable Systems

communicate

Involve the Owner at the Project Outset: Define Goals and Set Priorities

assess

Develop Cost Benefit Analysis Matrix for each Option

explore

Study Exterior Envelope, Glazing & Insulation to understand systems impacts

engage

Continue to engage the Owner throughout the Design Process
and encourage their participation

consistency

The MEP Design Team is a resource from Design through Closeout.

G&V CONSULTING ENGINEERS

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avoid systems that use **fossil fuels**

consider the application of **geothermal** and/or air source heat pumps

apply **energy recovery** units

fully utilize CO2 based **demand control** ventilation strategies

utilize **heat pump** domestic water heaters

LED lighting current design is *0.4 Watts/Sq. Ft.*

efficiency & sustainability

SOUTH elementary school | stoughton.ma

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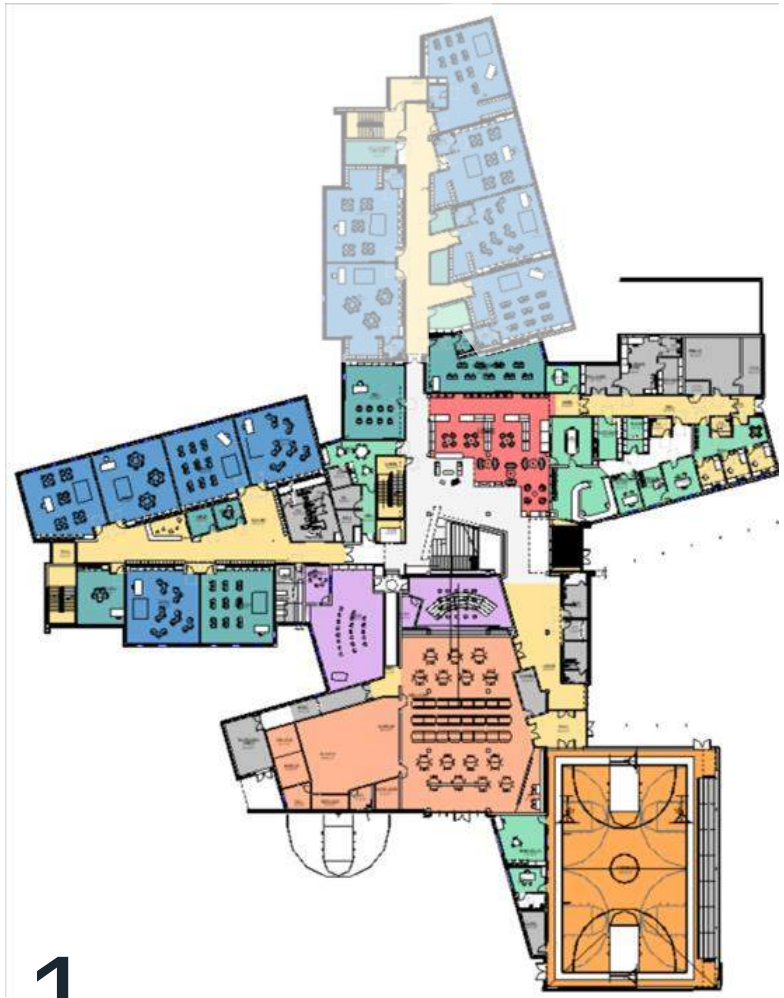
design patterns | geothermal opportunities



- First Floor Coverage
- Target Areas anticipated for year-round use

1

2

3

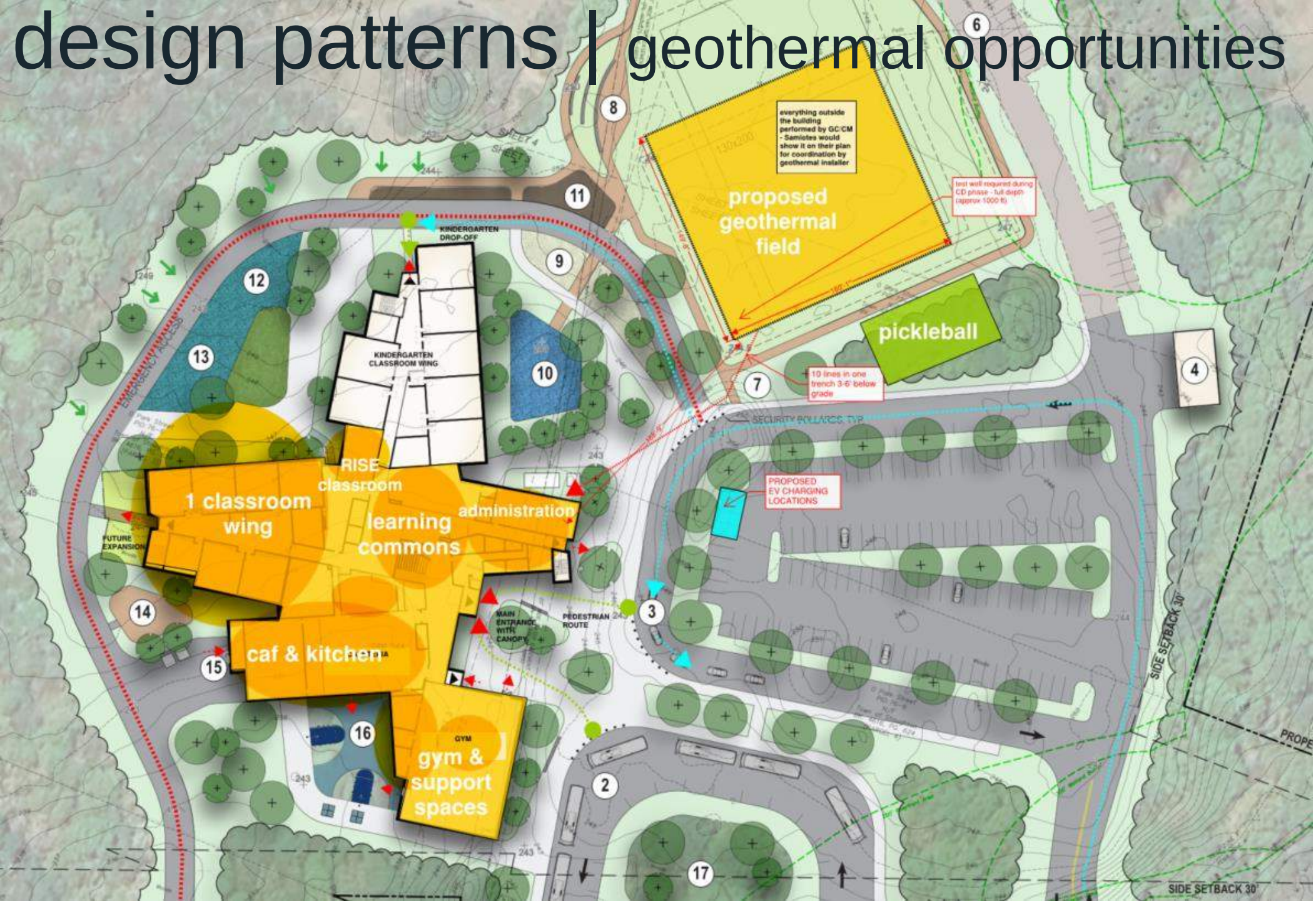
incentives | geothermal opportunities

1. Mass Save (NGrid/Eversource) is offering the following:
   - Air Source Heat Pumps: $2,500.00/ton
   - Variable Refrigerant Flow (VRF): $3,500.00/ton
   - Geothermal/Ground Source Heat Pump: $4,500.00/ton

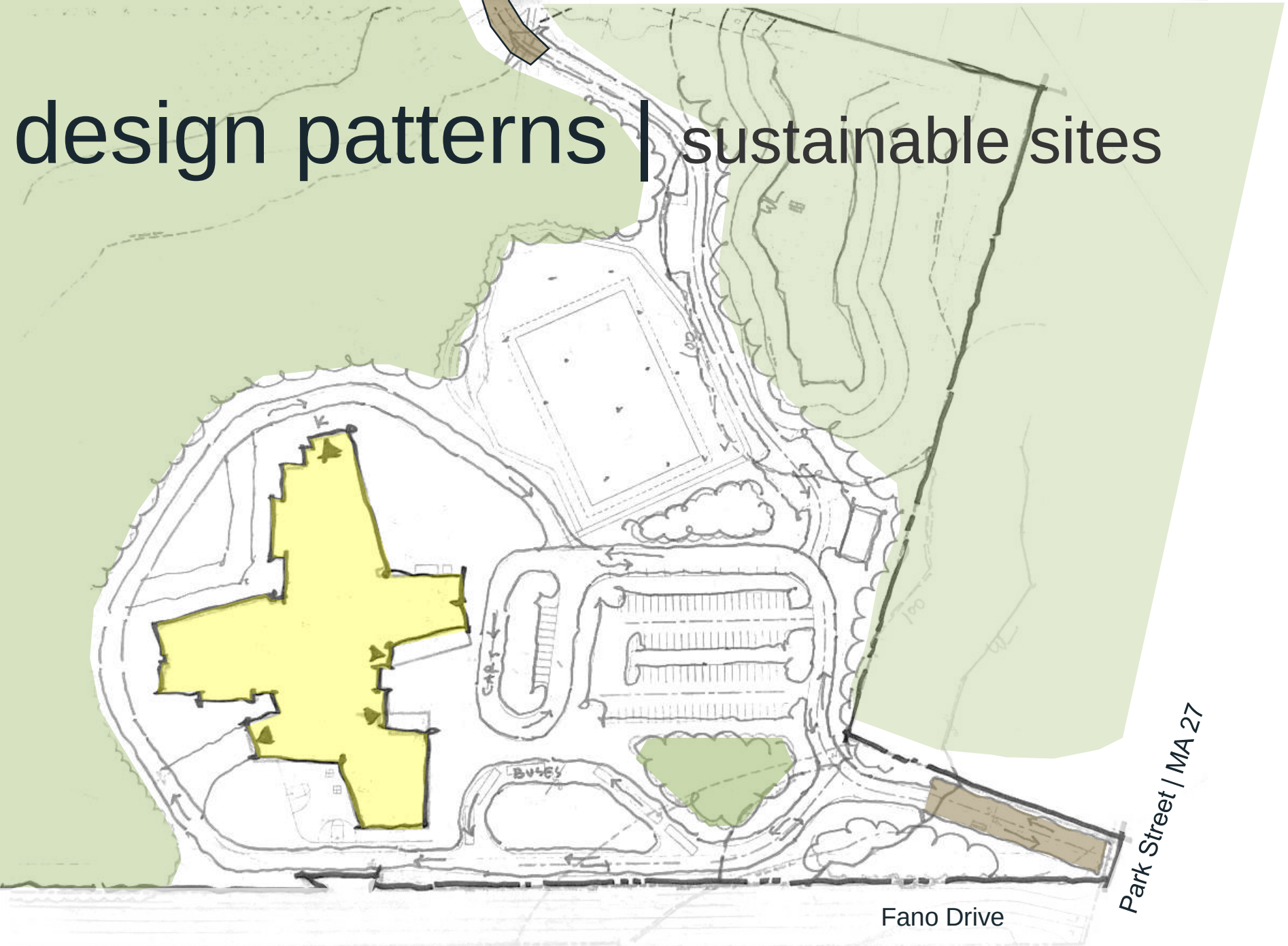
2. The Inflation Reduction Act also includes some really attractive tax incentives for geothermal. In the case of public school construction they are structured as a rebate through the direct payment option in the Investment Tax Credit (ITC). Essentially, the ITC has a 30% initial tax base credit based on the efficiency or generation measure's installed cost. There is more to it than that but that is a basic summary.

   *incentive $$ are a rebate that is paid after work is complete

design patterns | geothermal opportunities



design patterns | sustainable sites



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LANDSCAPE ARCHITECTS

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focus on **wellness**

mindful

material selection

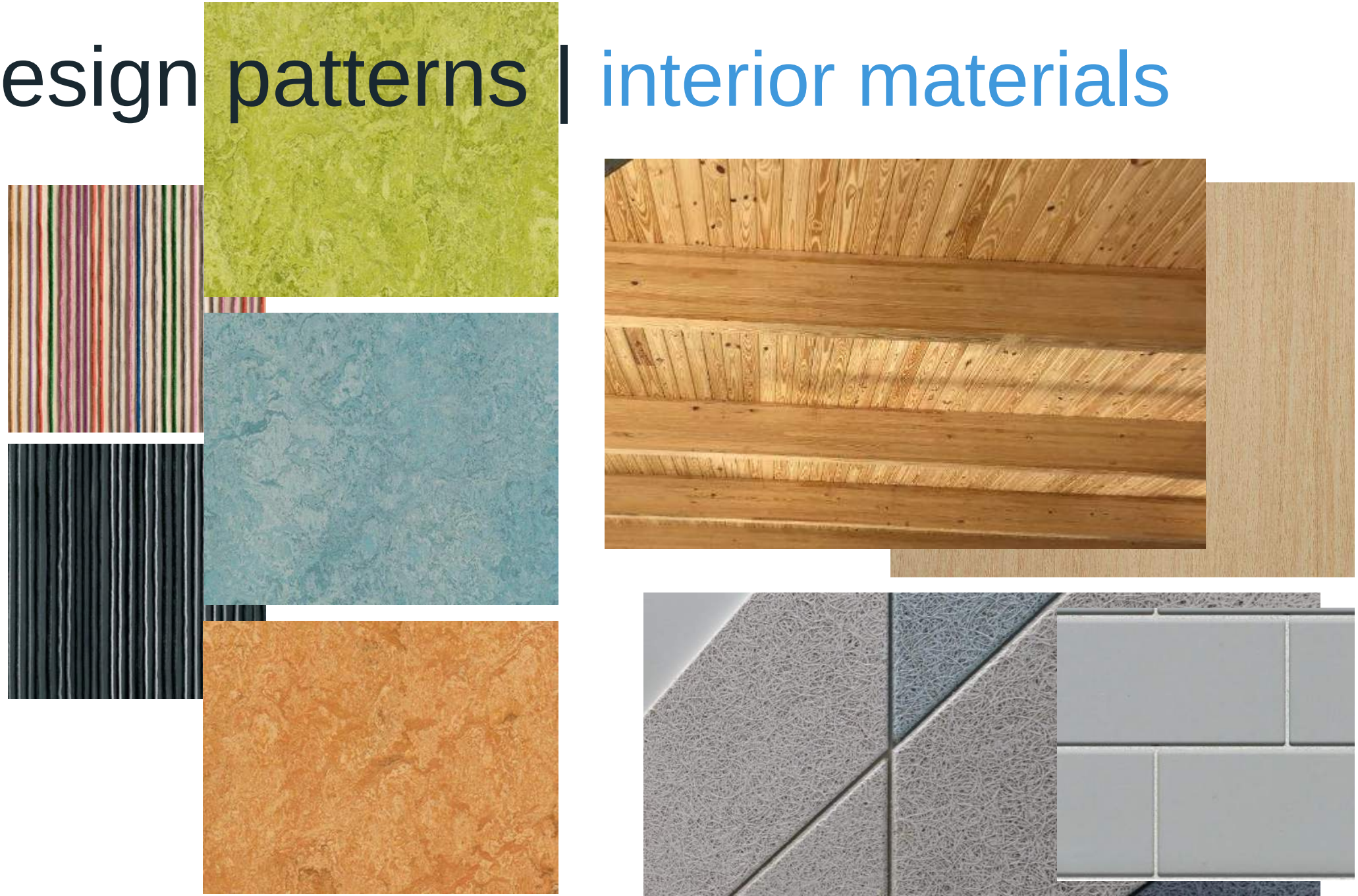
- indoor air quality
- low emitting – no VOC materials
- cradle to cradle materials
- low carbon offsets
- Reduce Embodied Carbon
- red list free materials when possible

Experience with :

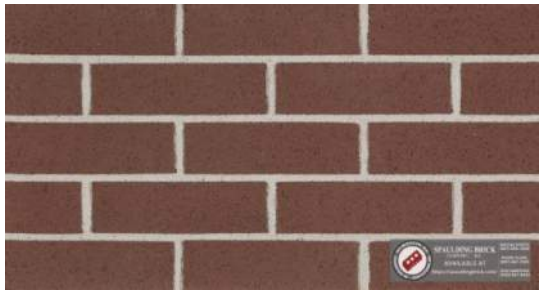
- Living Building Challenge
- WELL
- Fitwel
- LEED
- MA CHPS

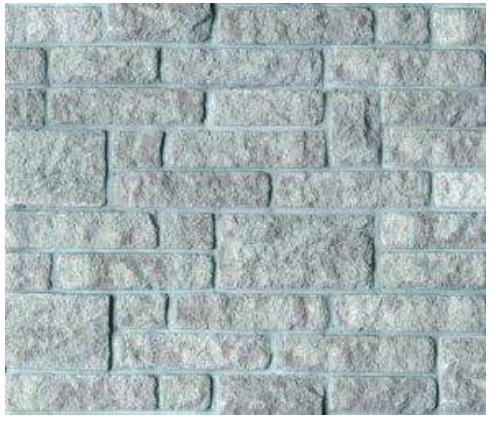
scranton library| madison.ct

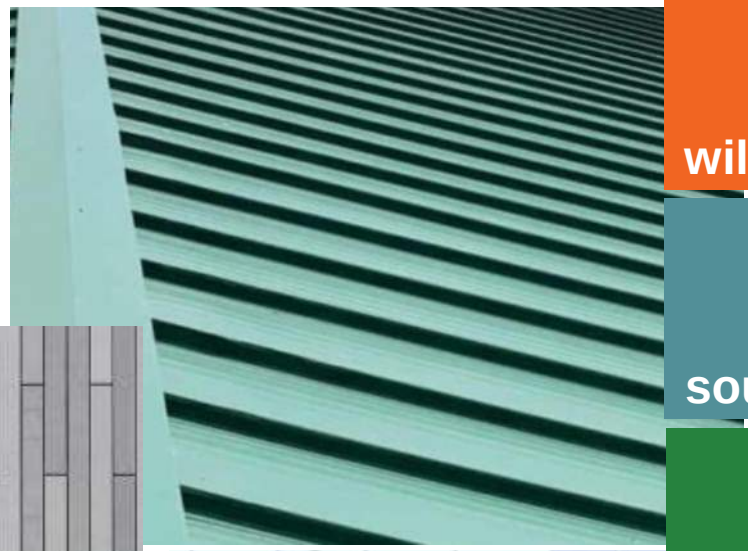
design patterns | interior materials



design patterns | exterior







hansen

wilkins

south

dawe

gibbons

DRA

design patterns | new school

a building that teaches

Sunita Williams elementary school | Needham, MA | Dore + Whittier Architects | Brown + Sardina

Ivan smith elementary school | danvers, ma Tappe Architects

design patterns | exterior

End of Presentation | thank you

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