

Codes for the Future

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Nelson Place School

Photo credit: Fontaine Brothers, used with permission



City of Worcester

Lamoureux Pagano

Fontaine Brothers

Tishman Construction

Seaman Engineering

The Green Engineer

TNZ Energy Consulting

Eversource

National Grid

- *efficiency first*
- *maintenance friendly*
- *readily available*



wall
roof
wwr
window

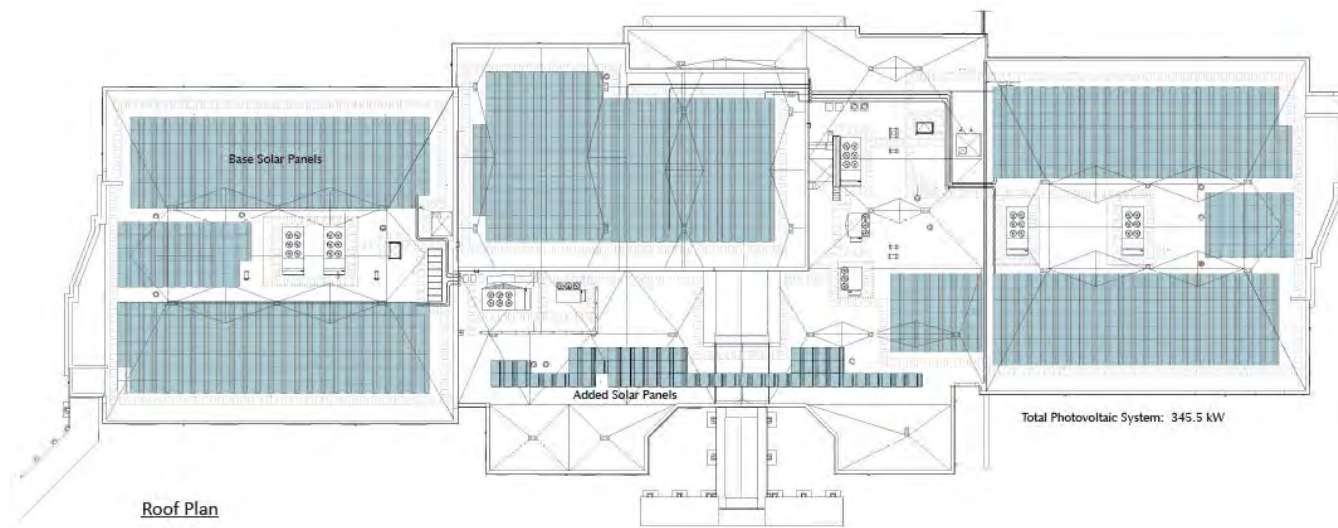
R19+21ci
R45ci
20%
U=0.21

External shading
Condensing heating
Displacement ventilation
Energy recovery

345 kW



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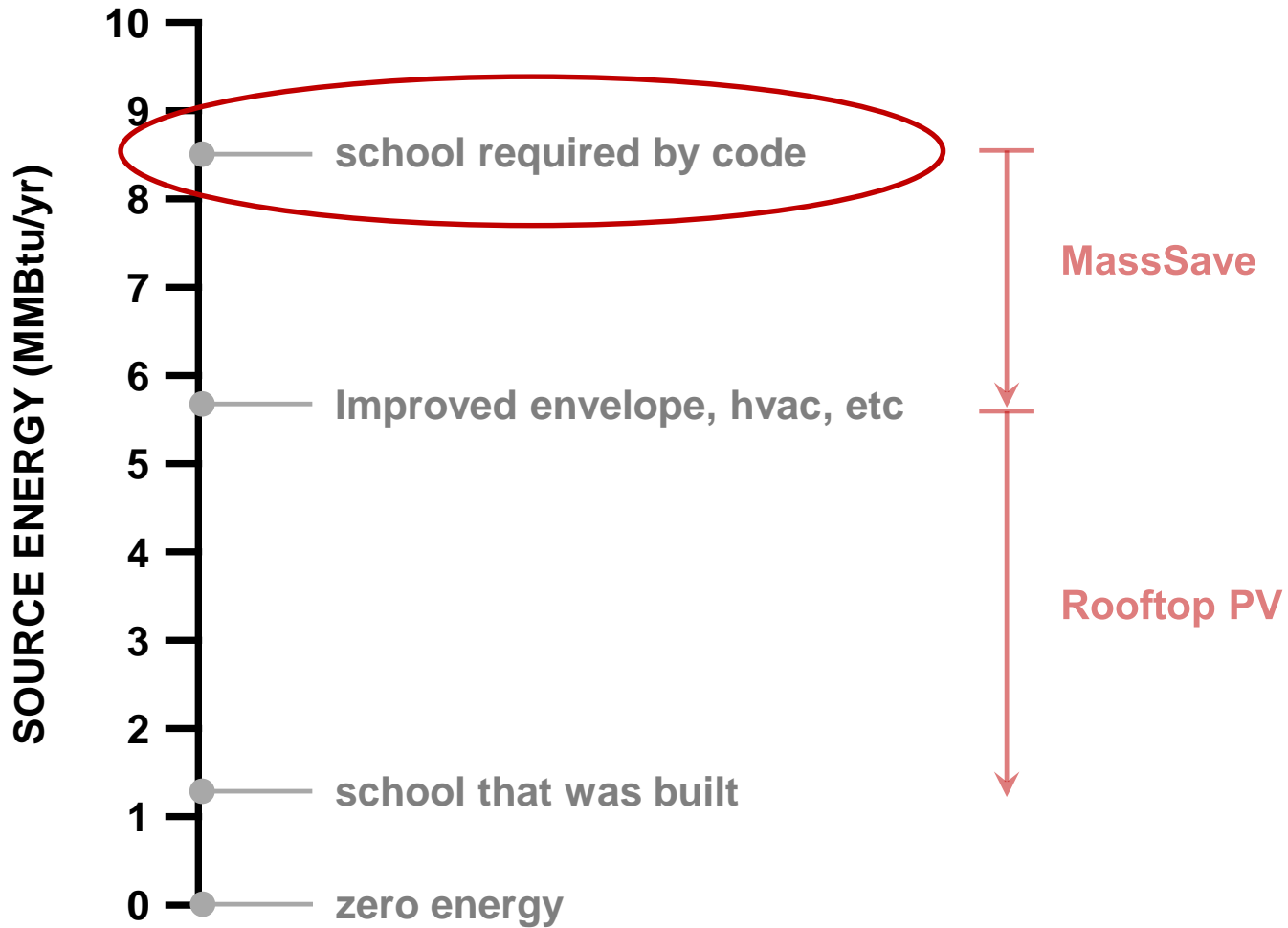


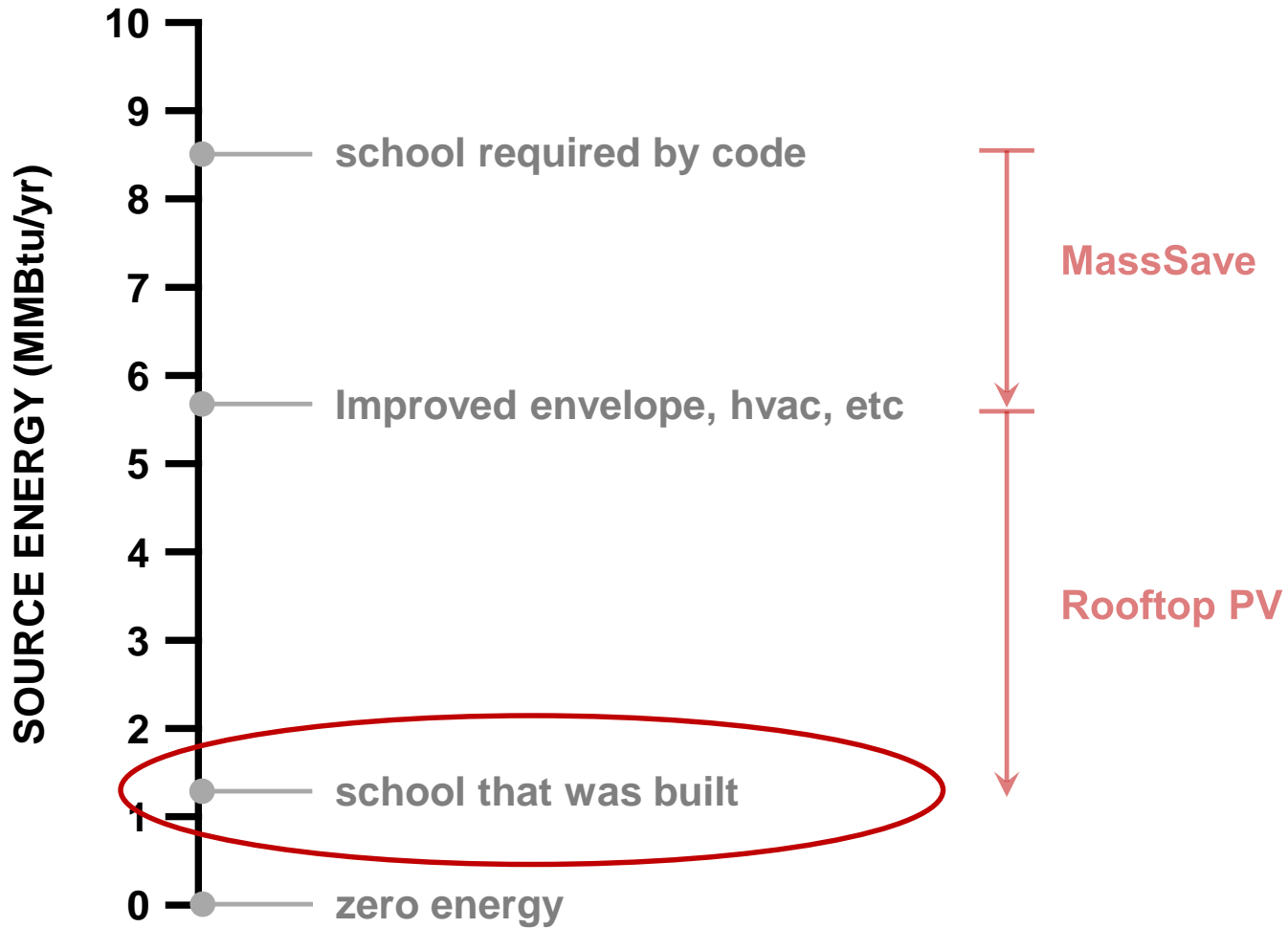
Roof Plan

	Site Energy (MBtu/yr)		Site to Source Factor		Source Energy (Mbtu/yr)
Gas	1,318,800	→	1.09	→	1,437,492
Electric	1,360,695	→	3.15	→	4,286,190
Total					5,723,682

PV	1,817,042	←	3.15	←	5,723,682
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434 kW → 80% ZERO ENERGY







Lamoureux Pagano, used with permission

Codes of the future

Buildings are already closer to zero energy than they are to the energy consumption of the “last code”

Focus on envelope and rooftop PV

Avoid envelope tradeoff

Learning from passivehouse

EUI requirement?

EUI requirement for regulated loads