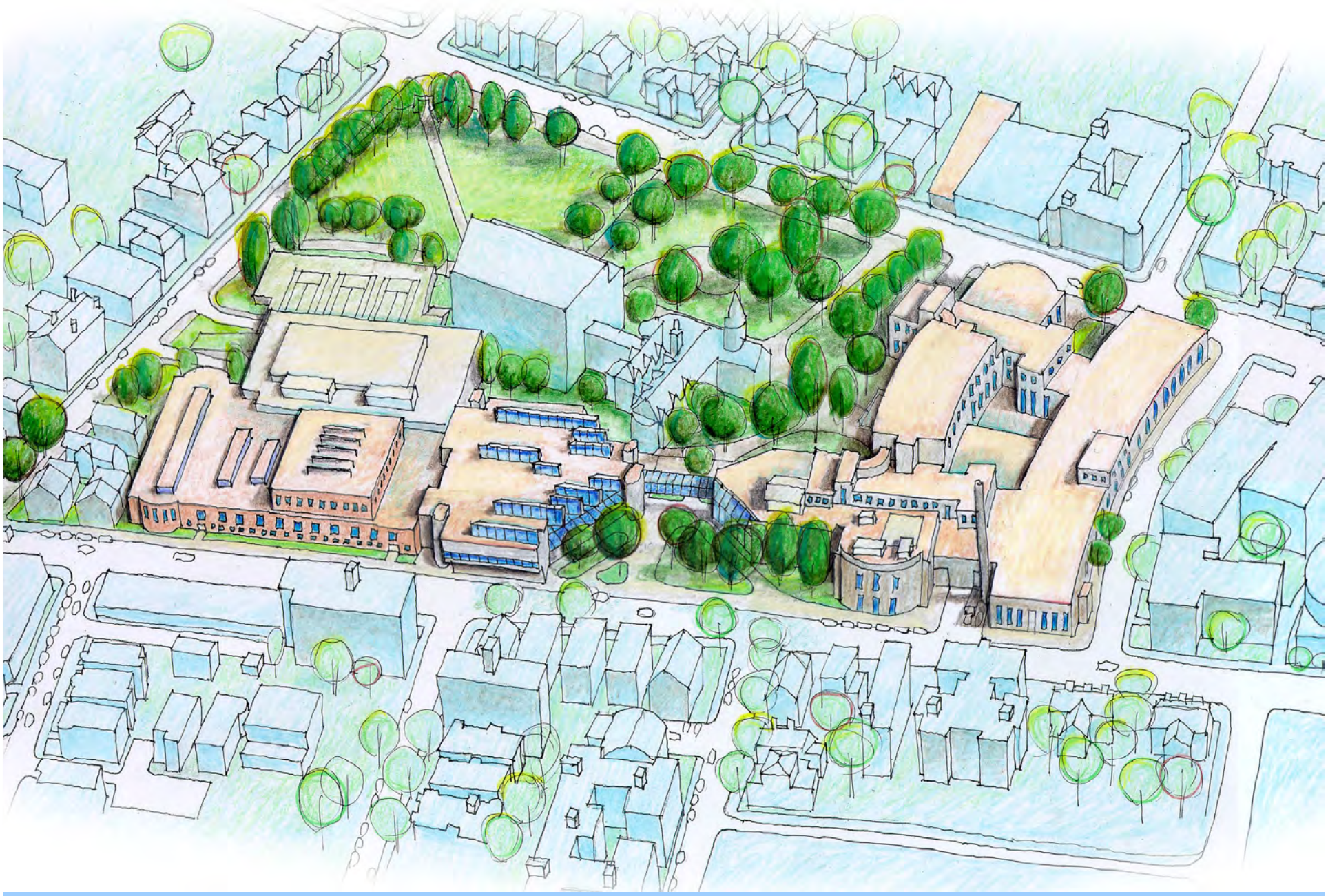
HMFH Architects, Inc.

Sustainable measures in the renovation of Cambridge Rindge and Latin School

Chin Lin, AIA, LEED AP, Senior Associate

CRLS—an efficient, LEED Gold building



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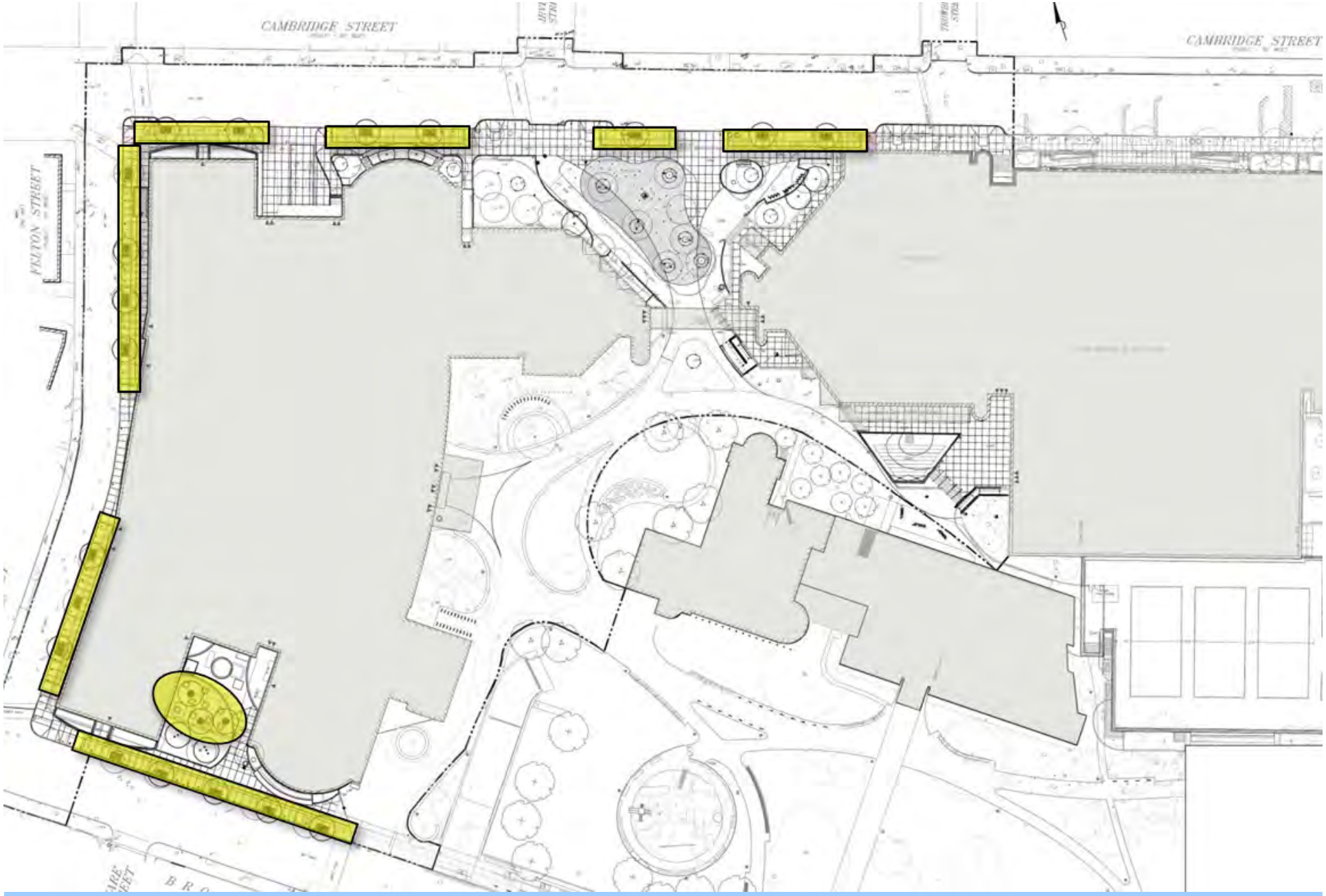

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Table - Energy Use and Environmental Impact

Cambridge Rindge and Latin High School - includes savings from co-generation or PV system

Option	Annual building energy use				Energy savings				% energy savings				CO2 emission[2]	CO2 emission reduction	Tree equivalent[3]
	Electricity	Natural Gas	Total	Cost	Electricity	Natural Gas	Total	Cost	Electricity	Natural Gas	Total	Cost			
	kWh	therm	MMBtu (site)[1]	$	kWh	therm	MMBtu (site)	$	kWh	therm	MMBtu (site)	$	lbs/year	lbs/year	no. of trees
Baseline	3,486,152	242,432	36,138	1,146,108	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7,300,668	N/A	N/A
As Designed system combination	2,970,406	119,958	22,131	809,804	515,746	122,474	14,007	336,304	14.8%	50.5%	38.8%	29.3%	5,206,588	2,094,080	68,658

[1] Conversion factor for electricity 3,412 Btu/kWh to represent site energy
Conversion factor for electricity 10,000 Btu/kWh to represent source energy
Conversion factor for gas 100,000 Btu/therm

[2] CO2 emission factors
Electricity 1.28 lbs/kWh based on Massachusetts
Natural gas 117.08 lbs/MMBtu or 11.708 lbs/therm
These emission factors are from DOE Energy Information Administration

[3] CO2 emission to "Tree" conversion
13 - 48 lbs of CO2 per year is absorbed by an average tree - according to various sources
Value used in this analysis 30.5 lbs of CO2 per year per tree

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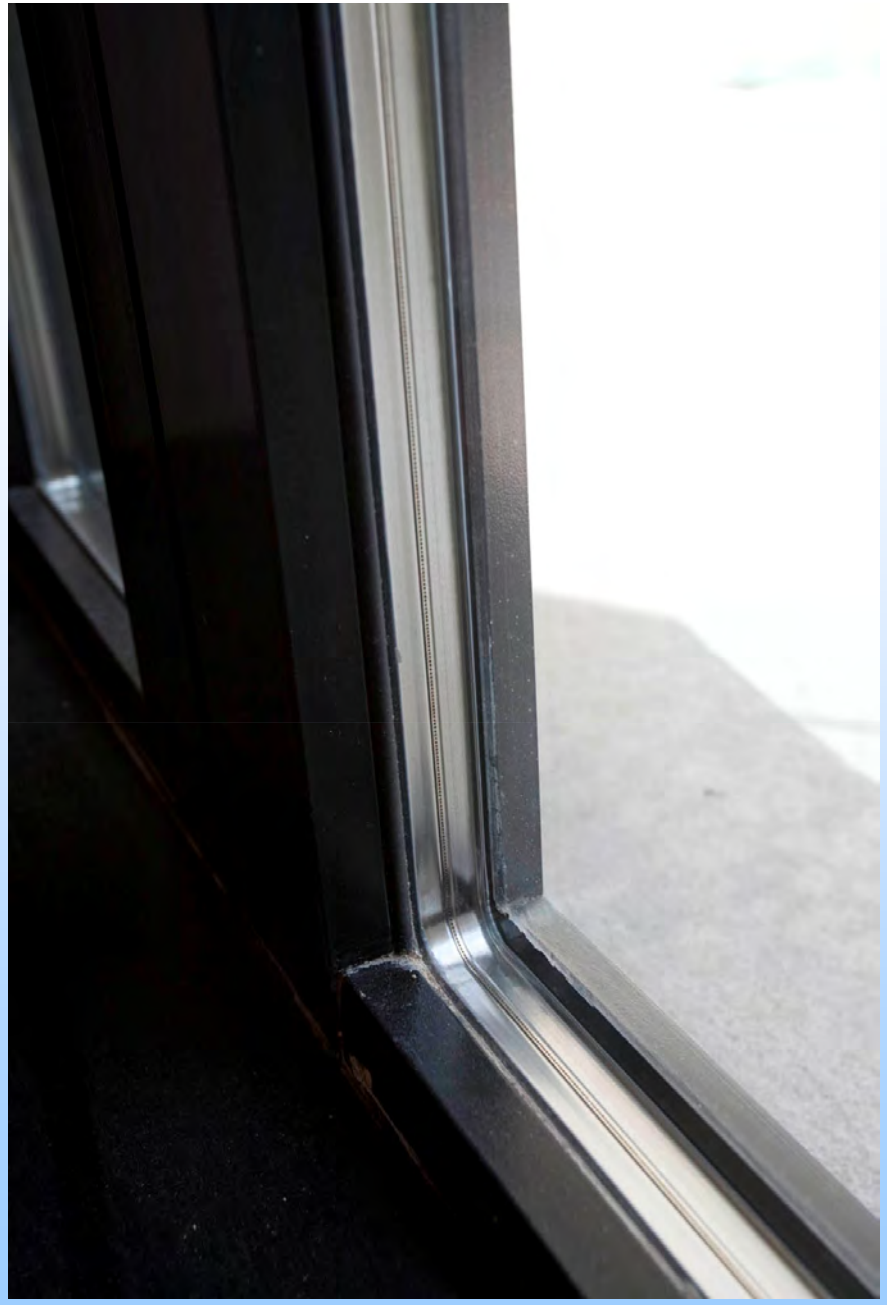

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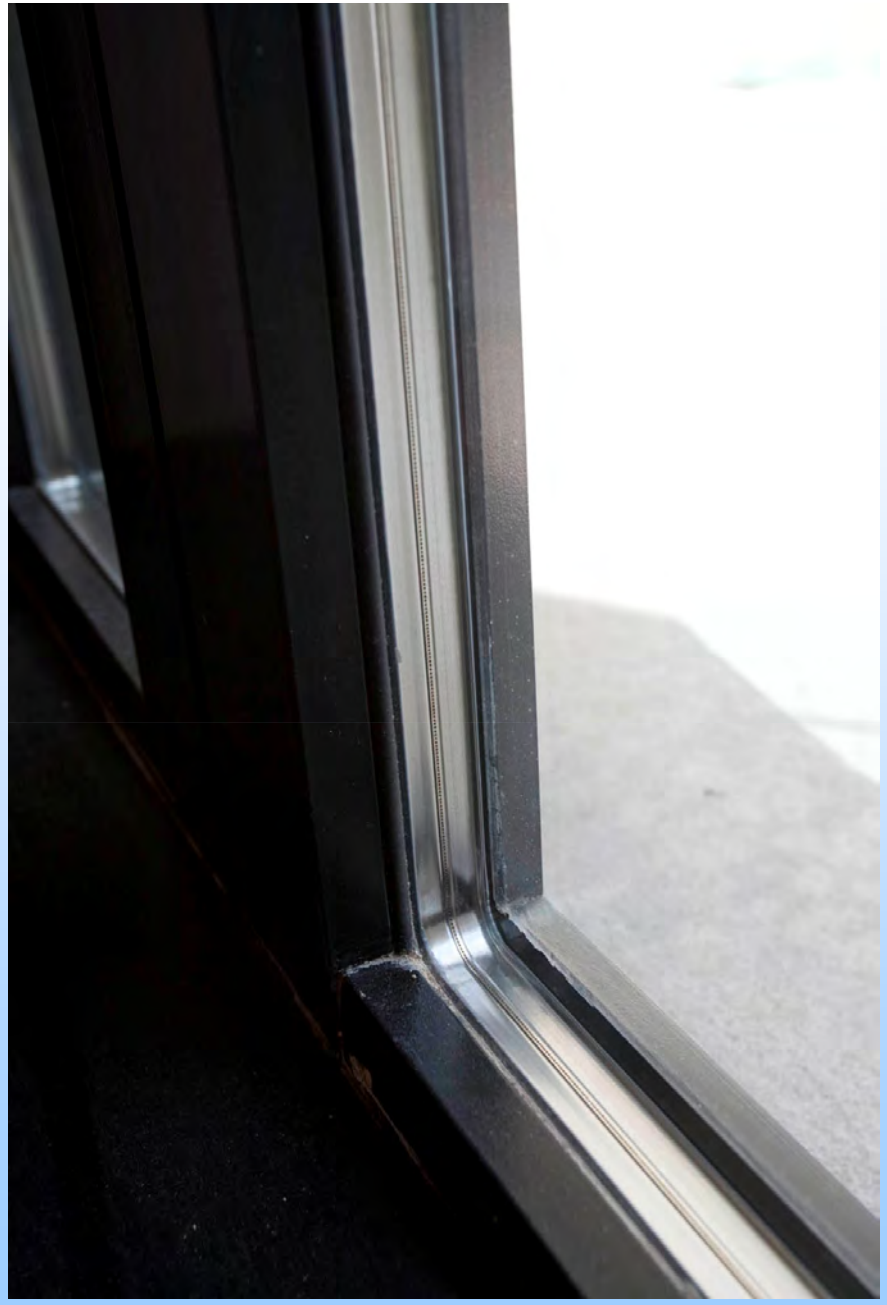

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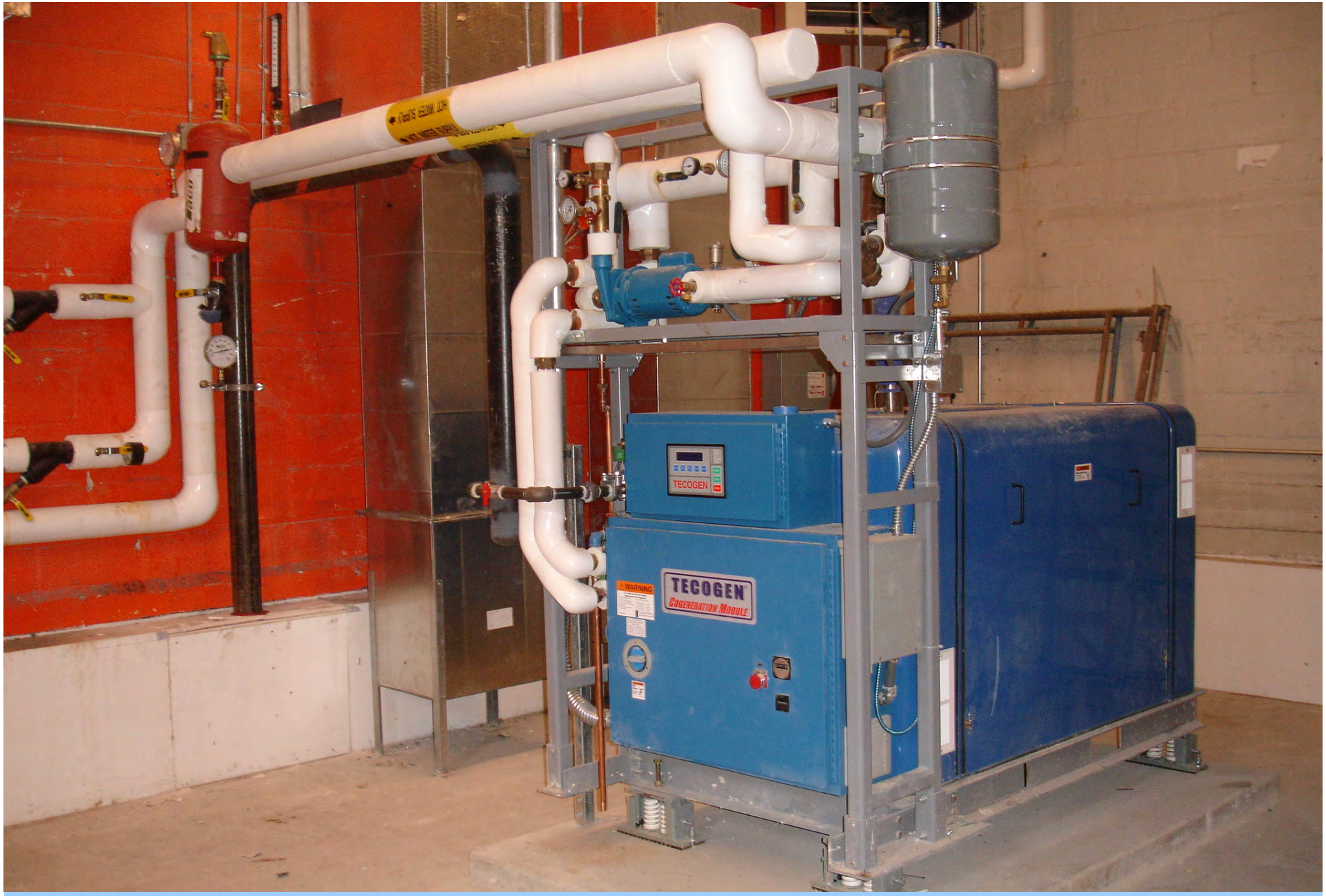

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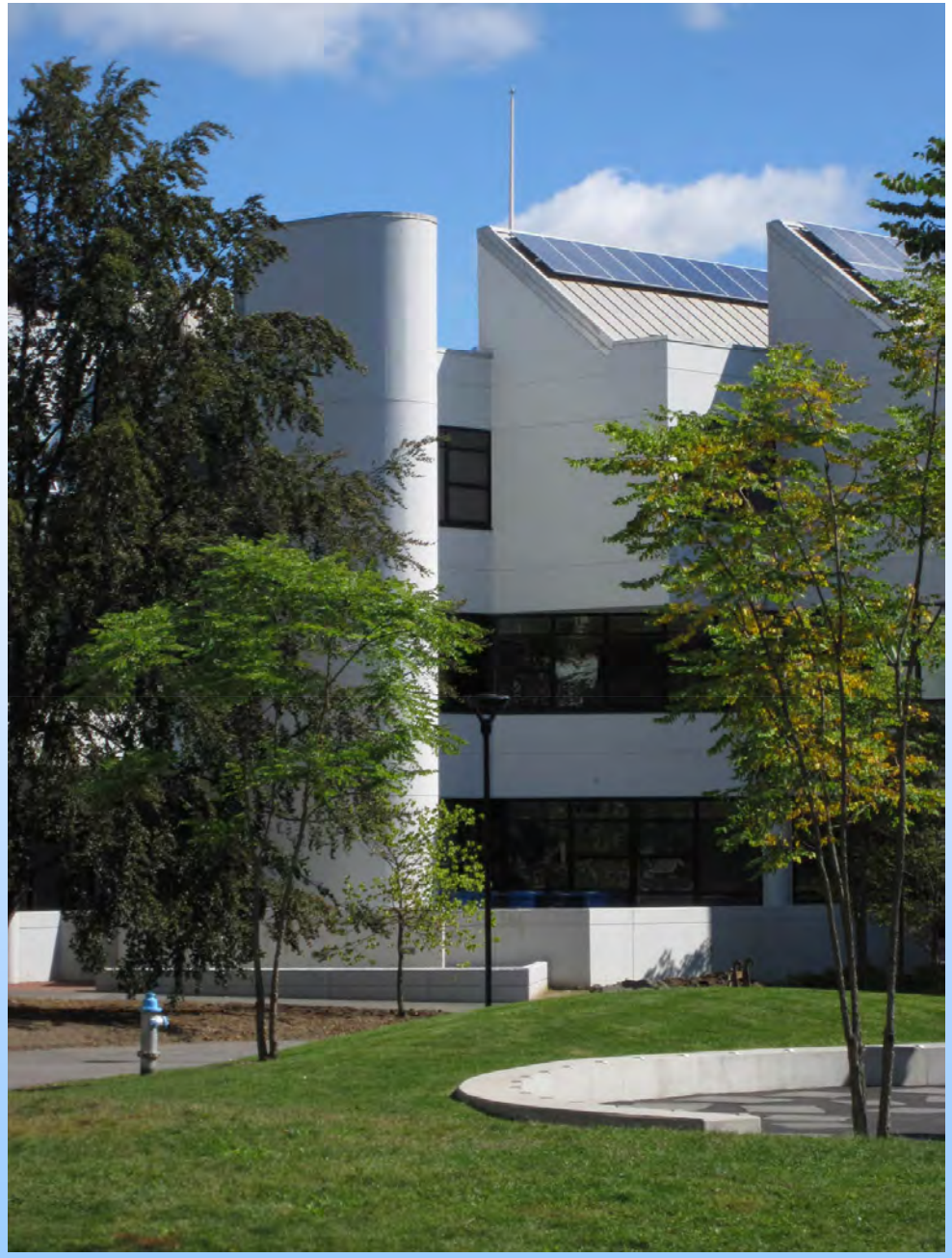

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