



A 3D architectural rendering of a modern, multi-story building. The building features a prominent glass facade on the left side, reflecting the sky, and dark wood paneling on the right side. The structure has a flat roof and a balcony on the upper floor. The scene is set in a landscaped area with green grass, trees, and modern streetlights under a clear blue sky.

Gouda Build (How-duh) Build

**Architecture-Engineering-Construction Firm
Gouda, Netherlands
Let us show you Gouda Build for the Future!**

Our Team



Grace White
Mechanical &
Energy



Robert Cottingham
Site & Structure



Ryan O'Callaghan
Architecture &
Interior



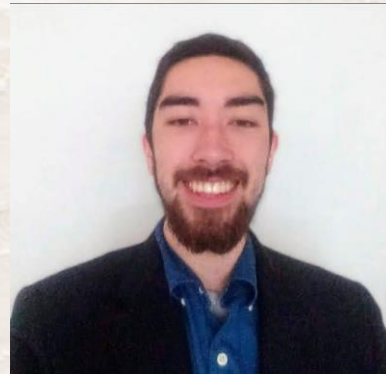
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Architecture &
Envelope



Will Harshberger
Electrical &
Construction



Josh Maile
Mechanical &
Energy



Joe Mak
Mechanical &
Embodied Energy



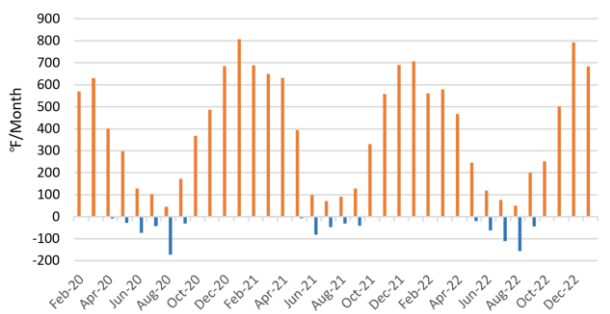
Anton Harfmann
Faculty Lead



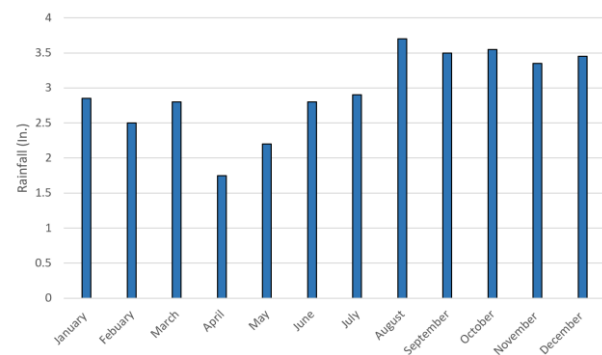
Site Context

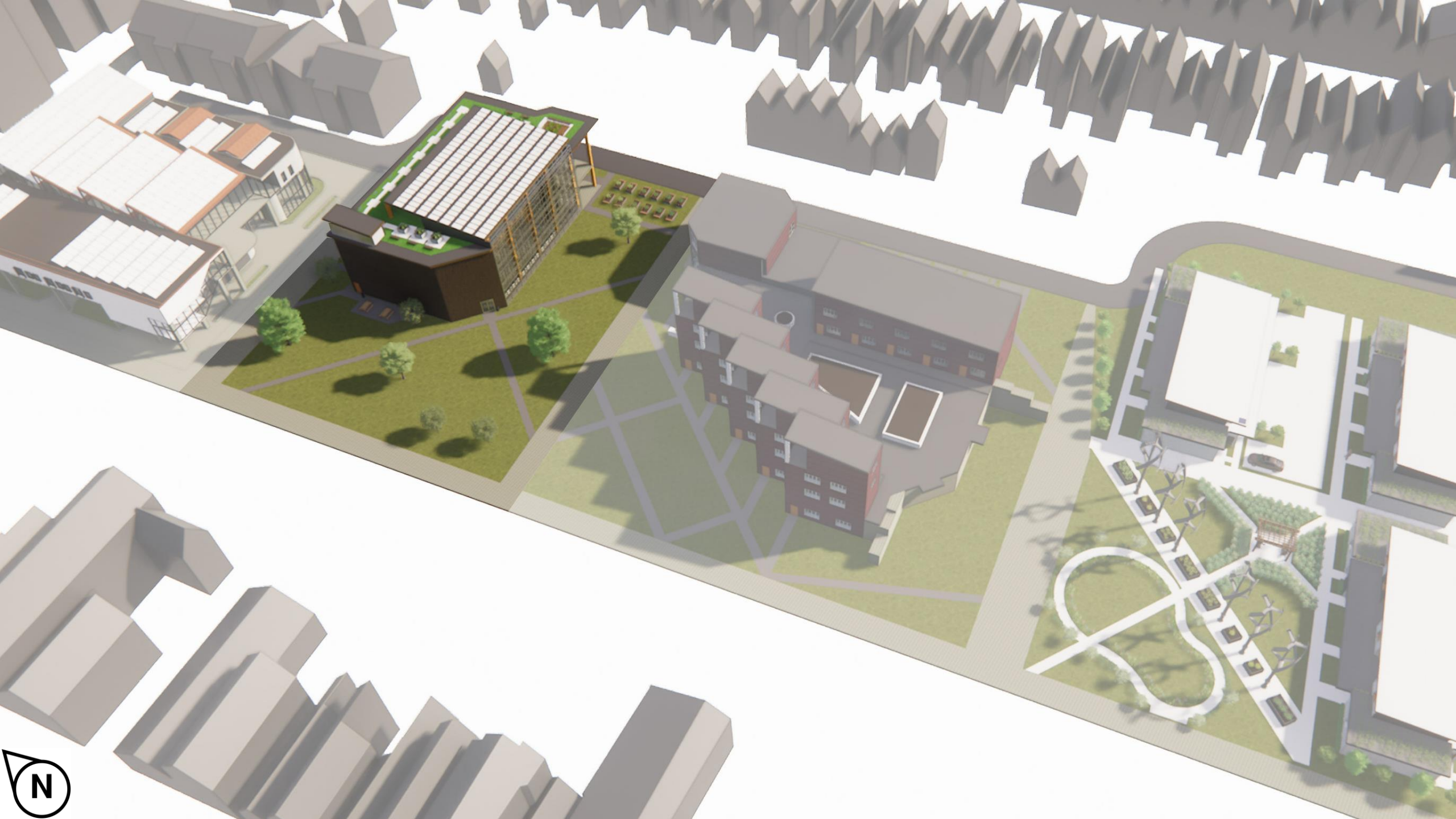


Heating and Cooling Degree Days - Gouda, Holland
Baseline of 65°F



Average Monthly Rainfall





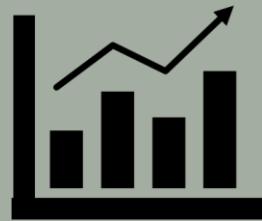
NET ZERO MISSION

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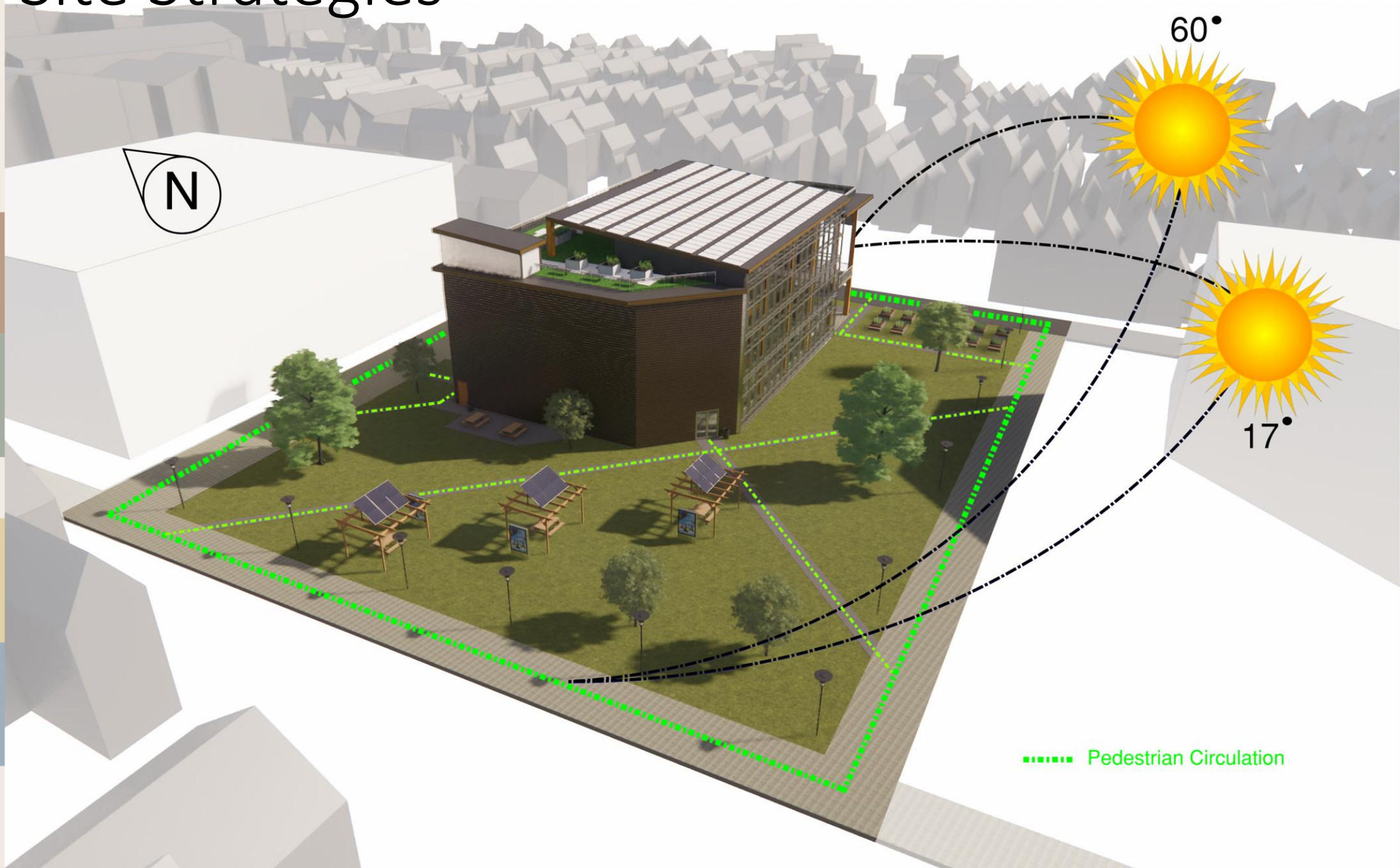
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Site Strategies



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Spaces Designed for Learning



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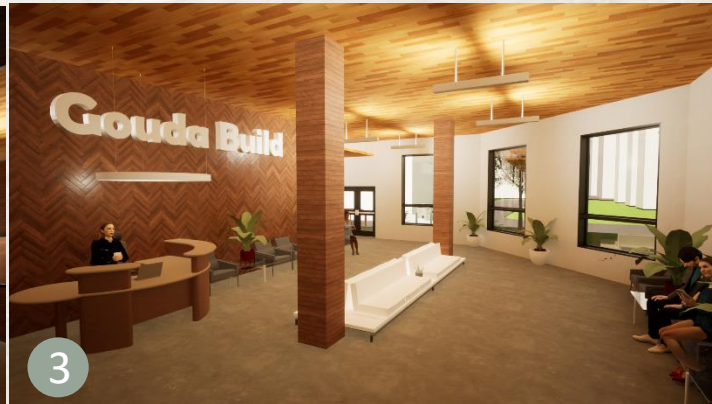
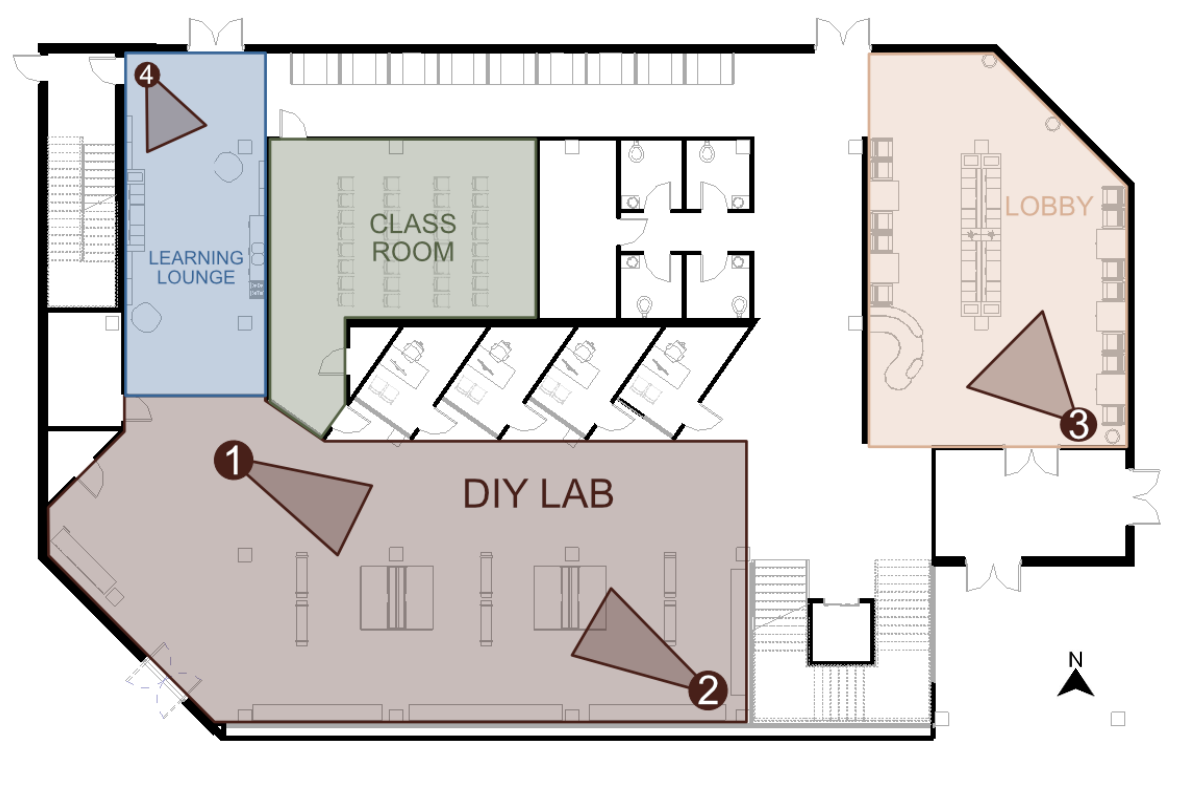
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Spaces Designed for Productivity



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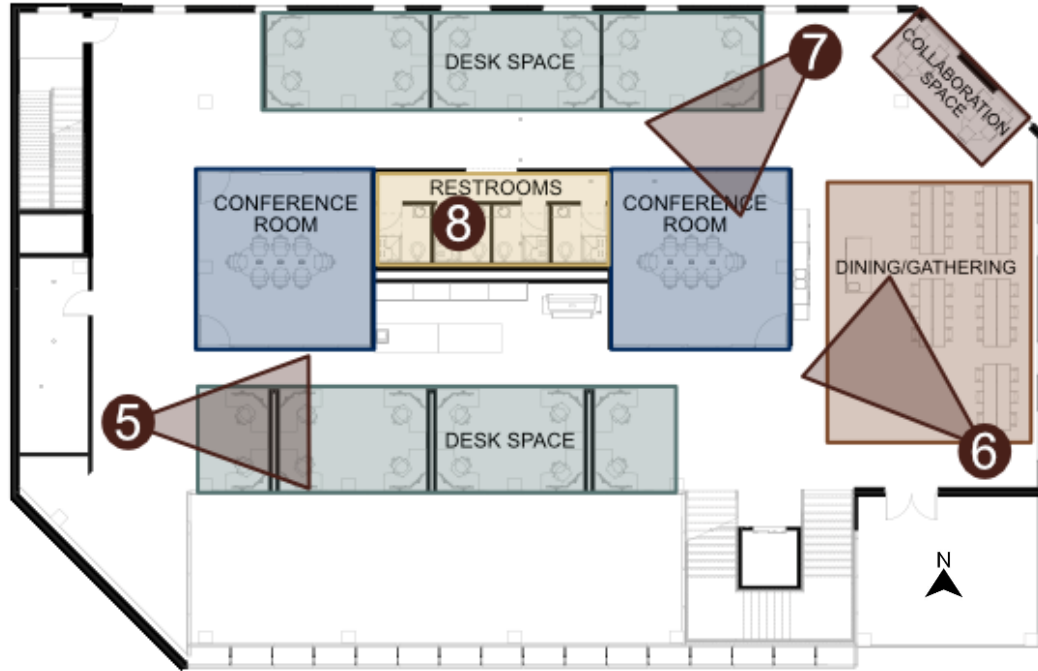
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Spaces Designed for Productivity



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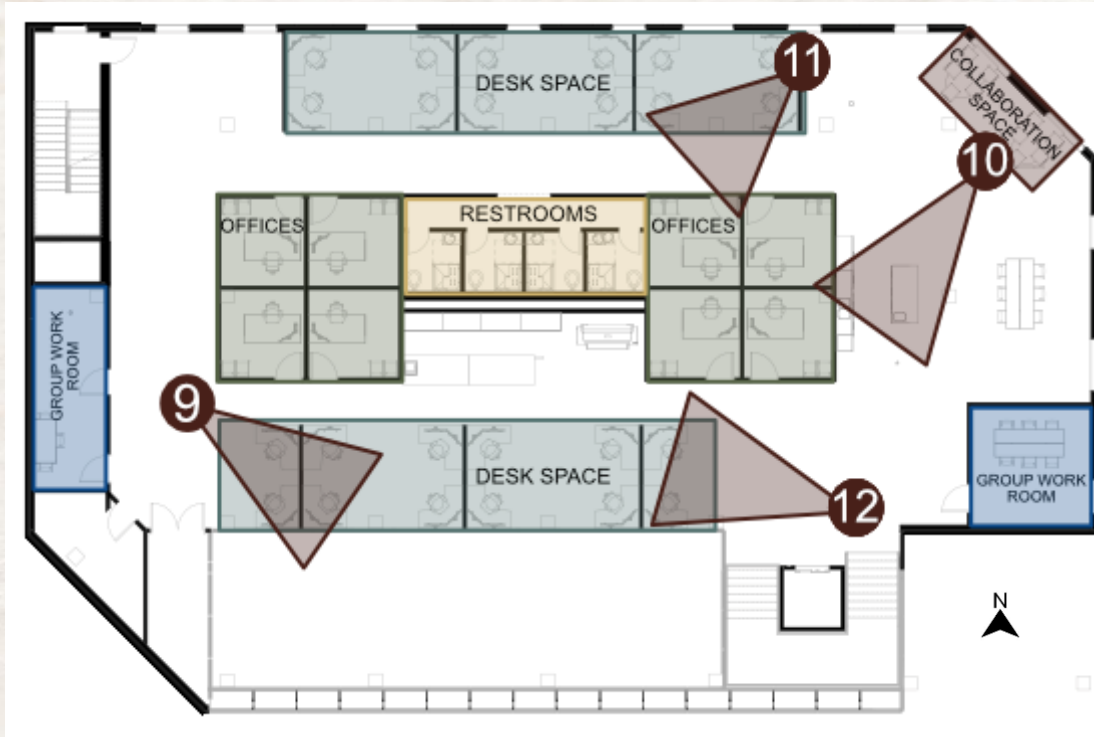
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Green Roof Application



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Double Skinned Façade and Enclosure

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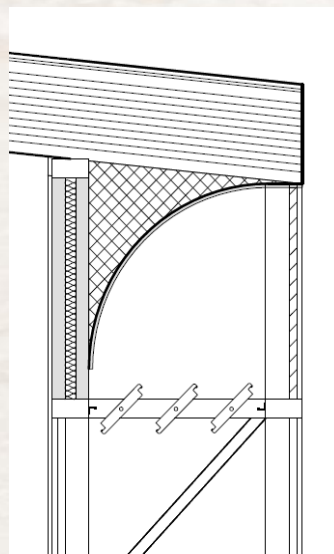
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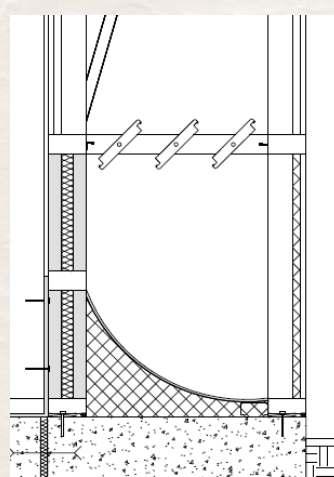
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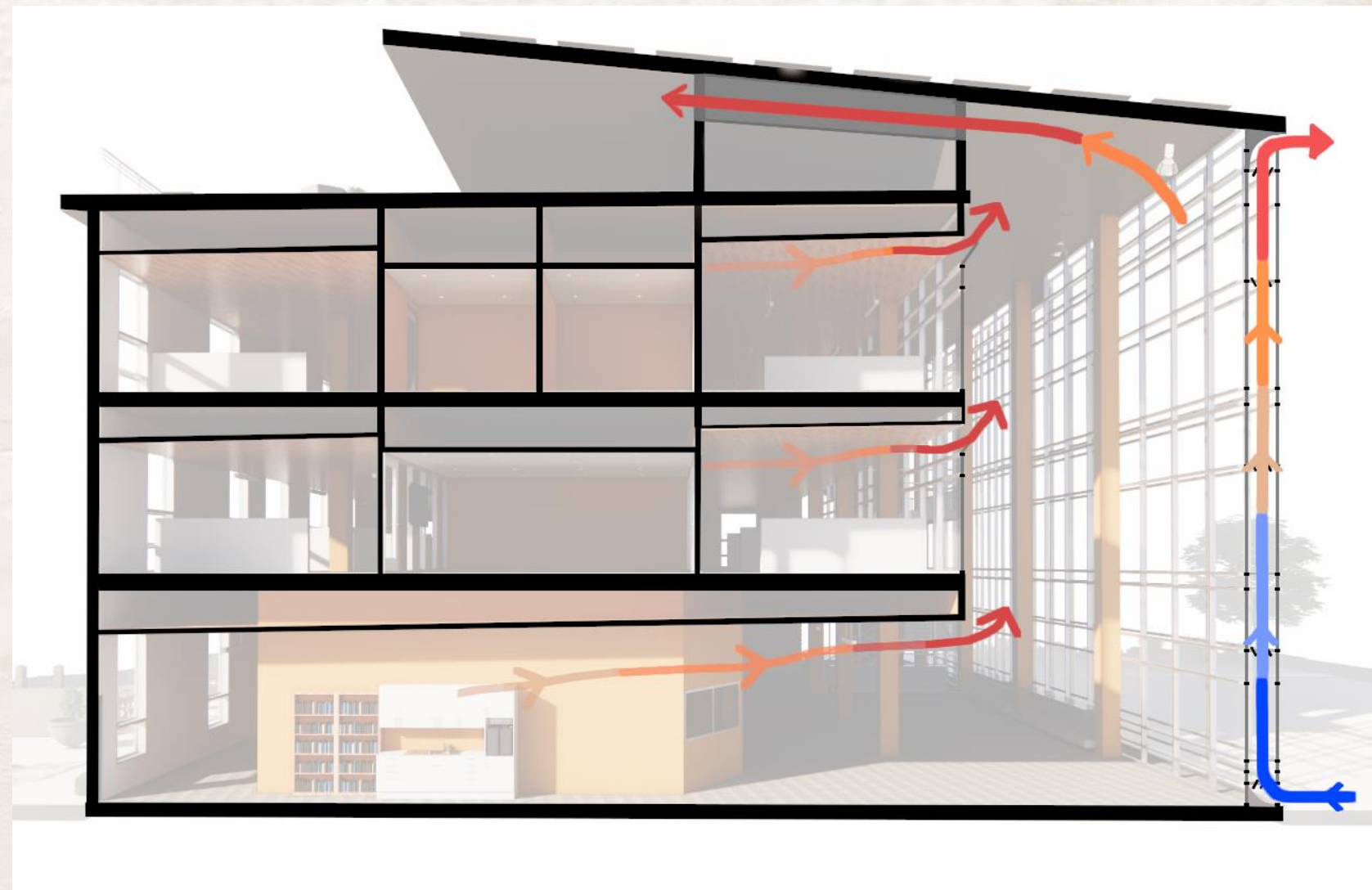


TOP



BASE

INSULATED LOUVERS



Double Skinned Façade and Enclosure



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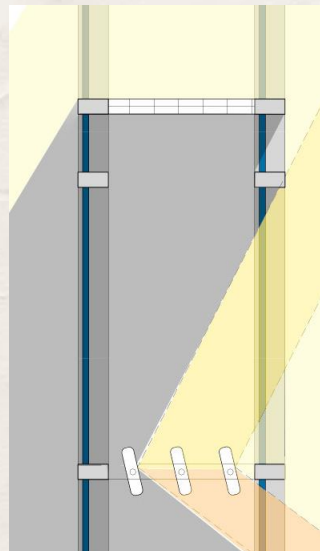
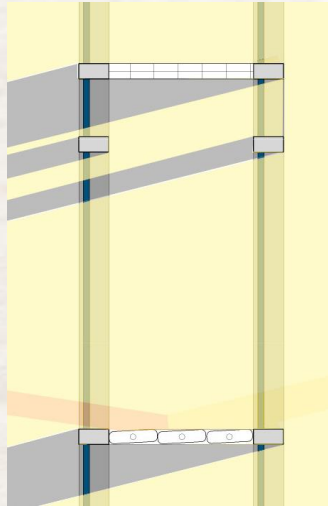
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LIGHT SHELF



Structure



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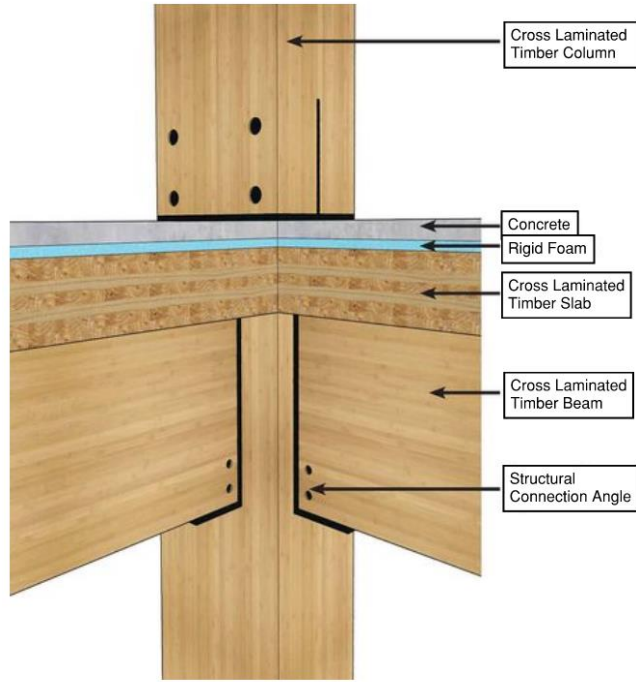
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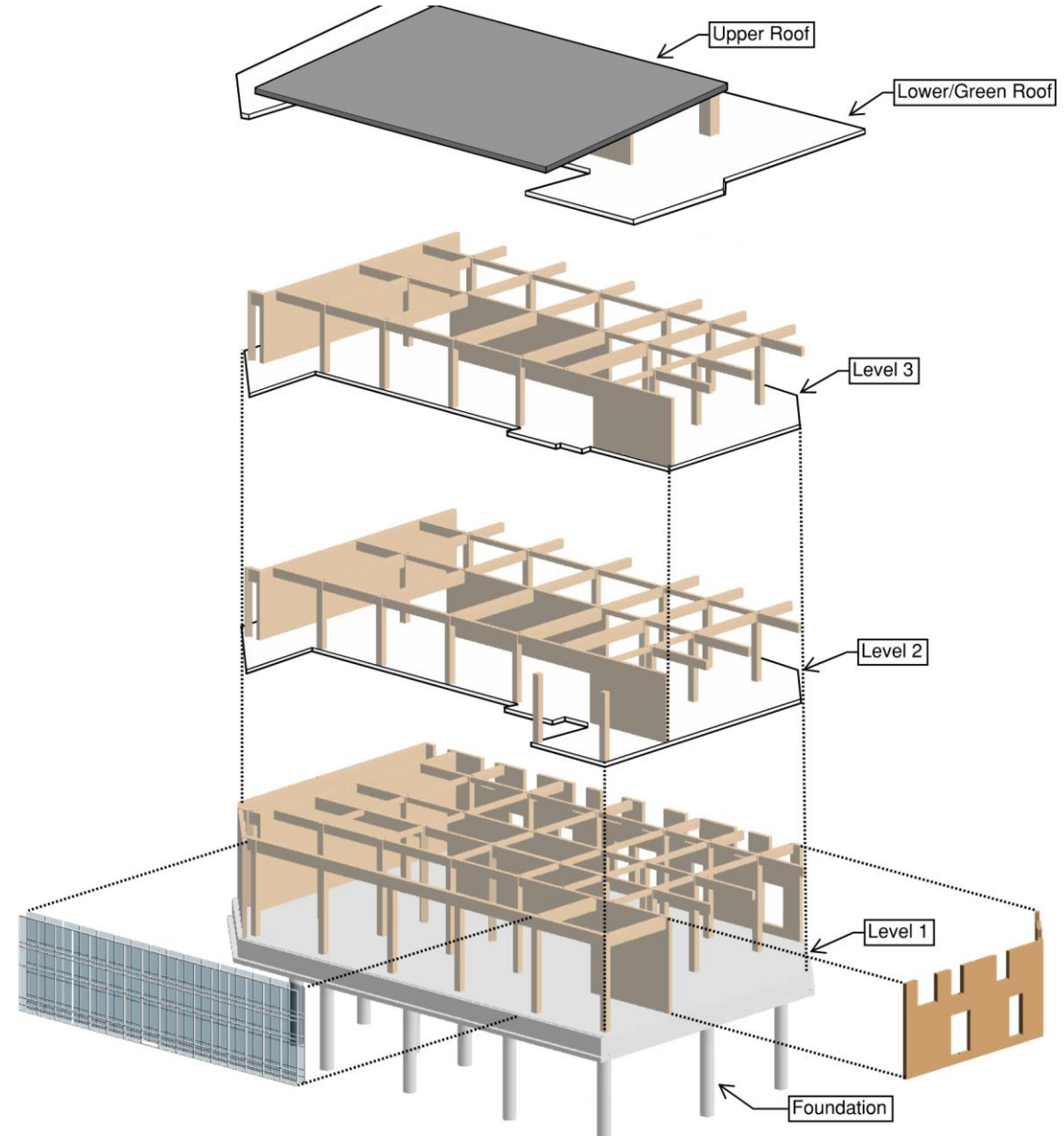
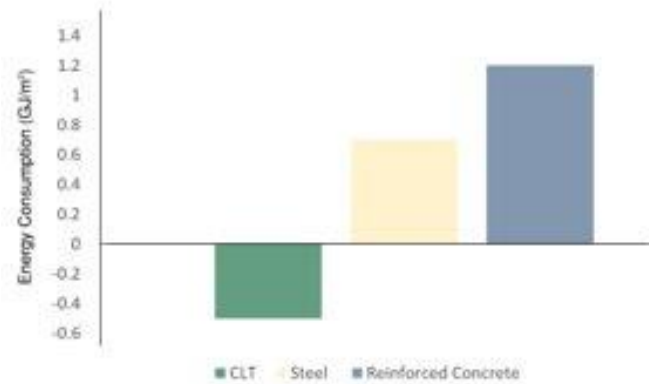
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Energy Consumption During Production





Harnessing the Sun to Offset Building Consumption

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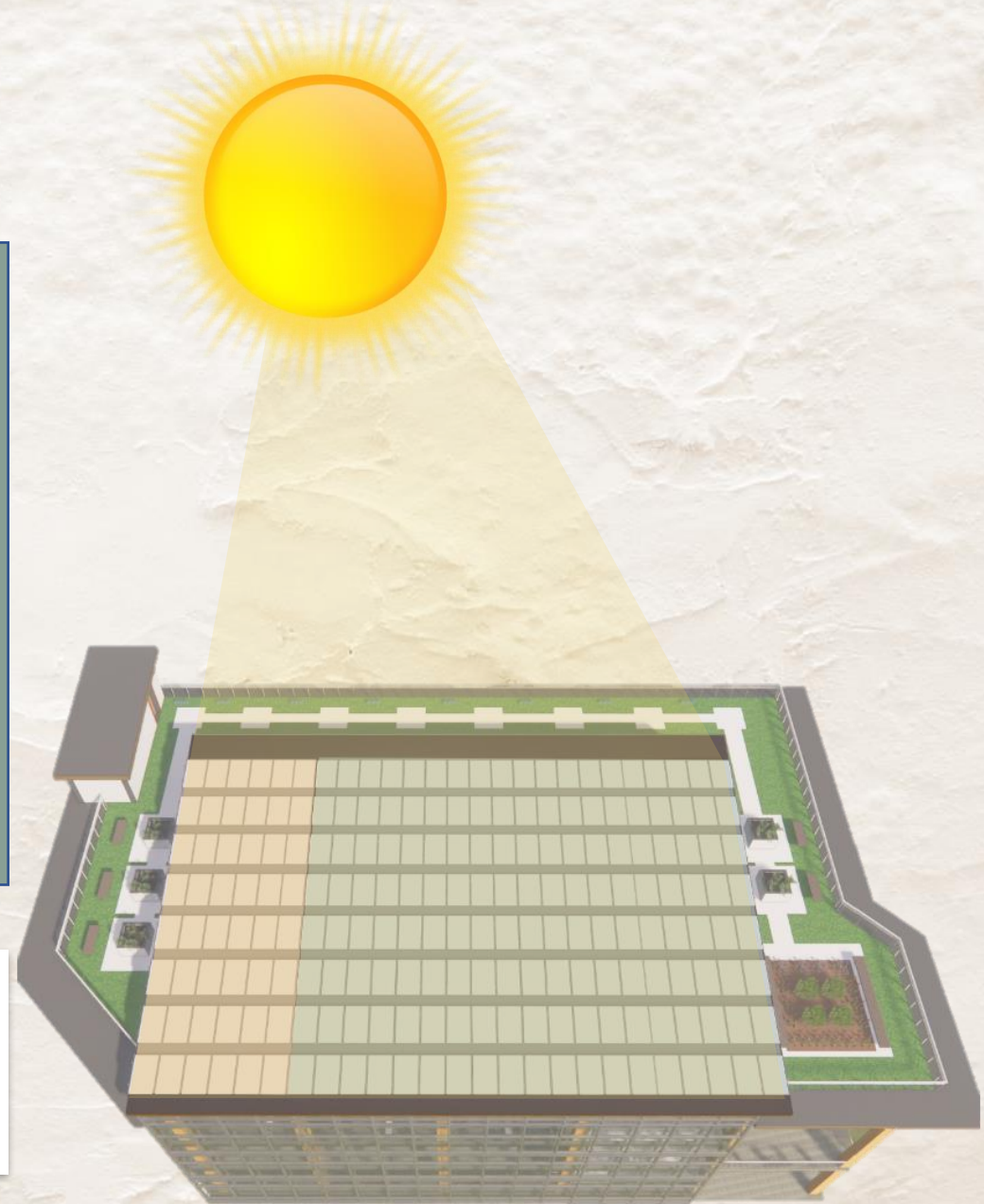
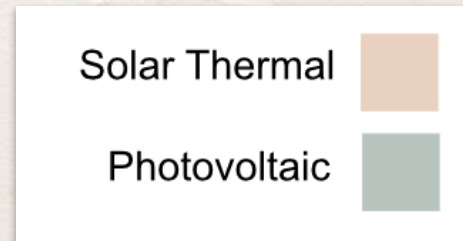
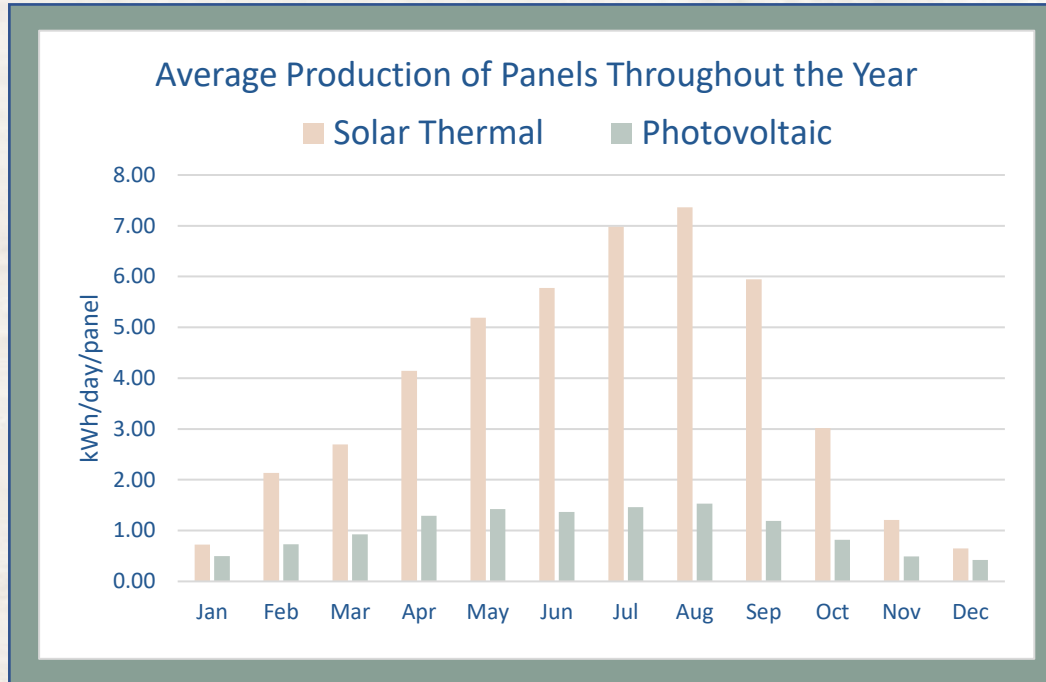
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Maximizing Solar Thermal Production Without Excess Generation

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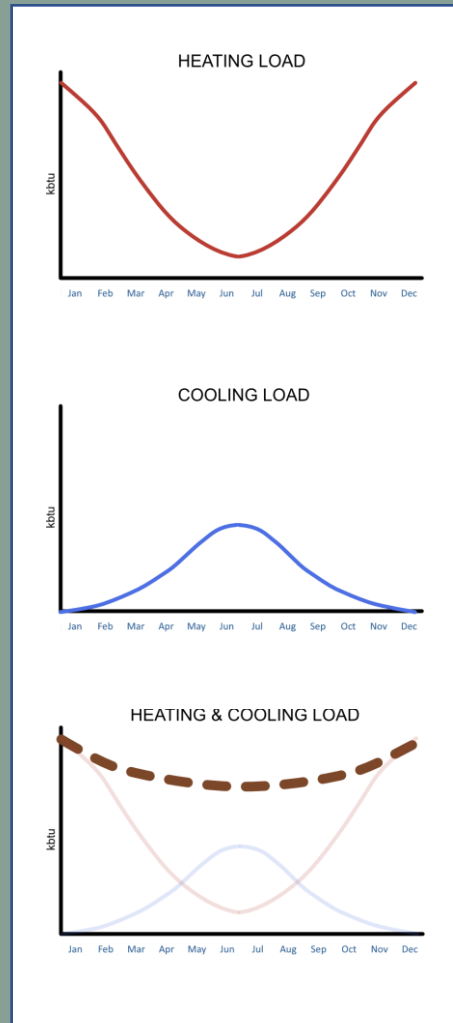
HARNESS

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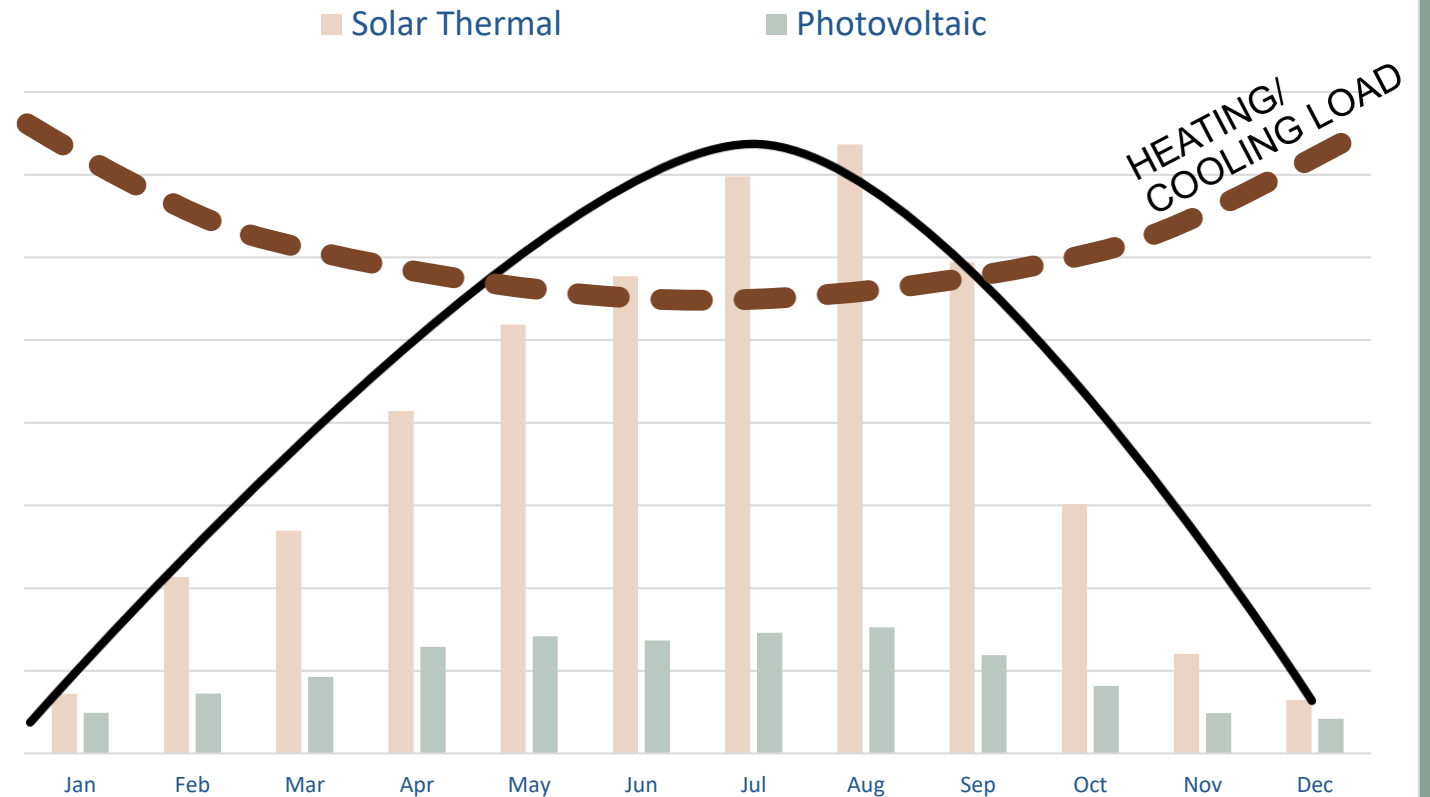
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Average Production of Panels Throughout the Year





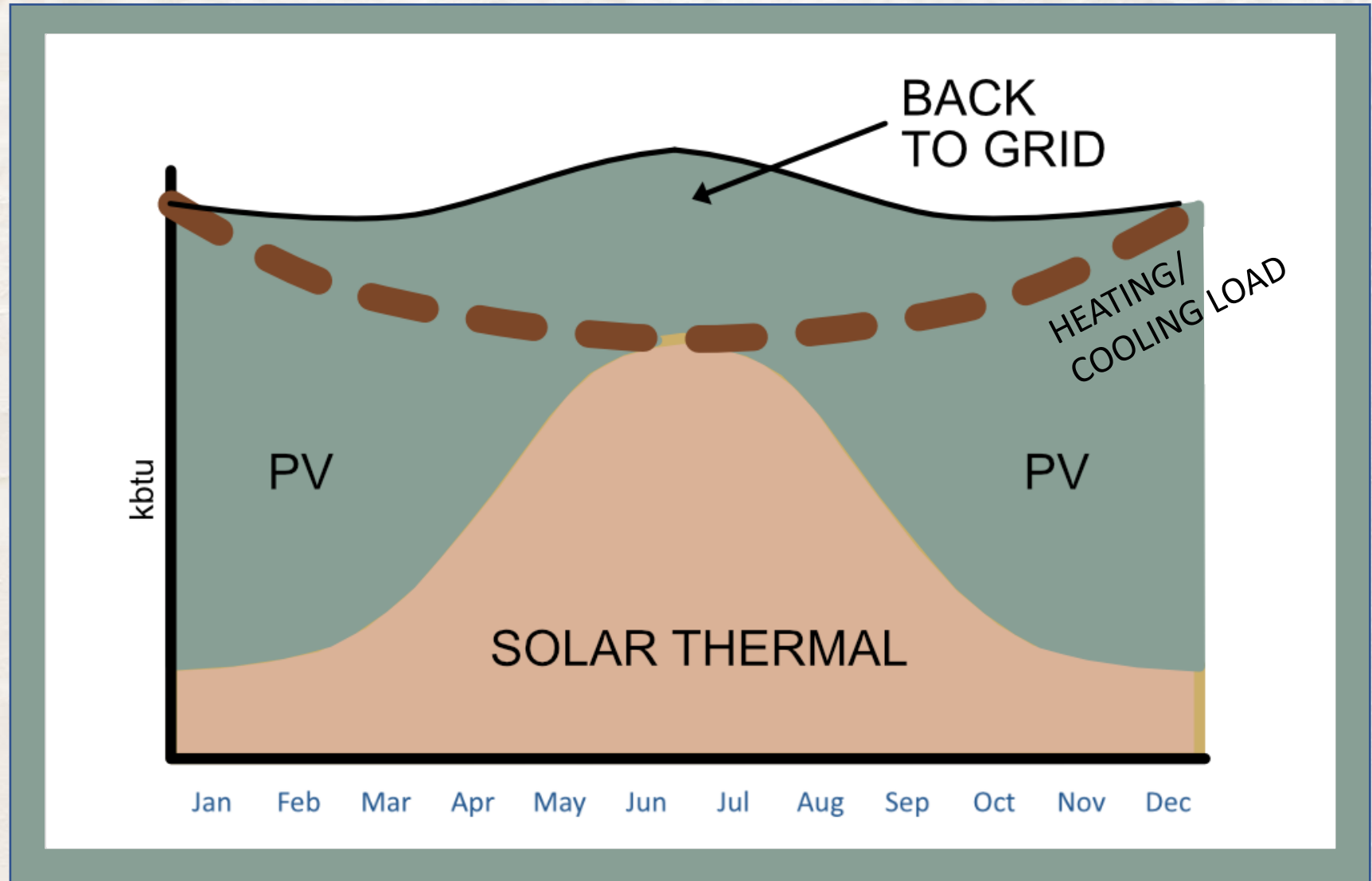
Maximizing Solar Thermal Production Without Excess Generation

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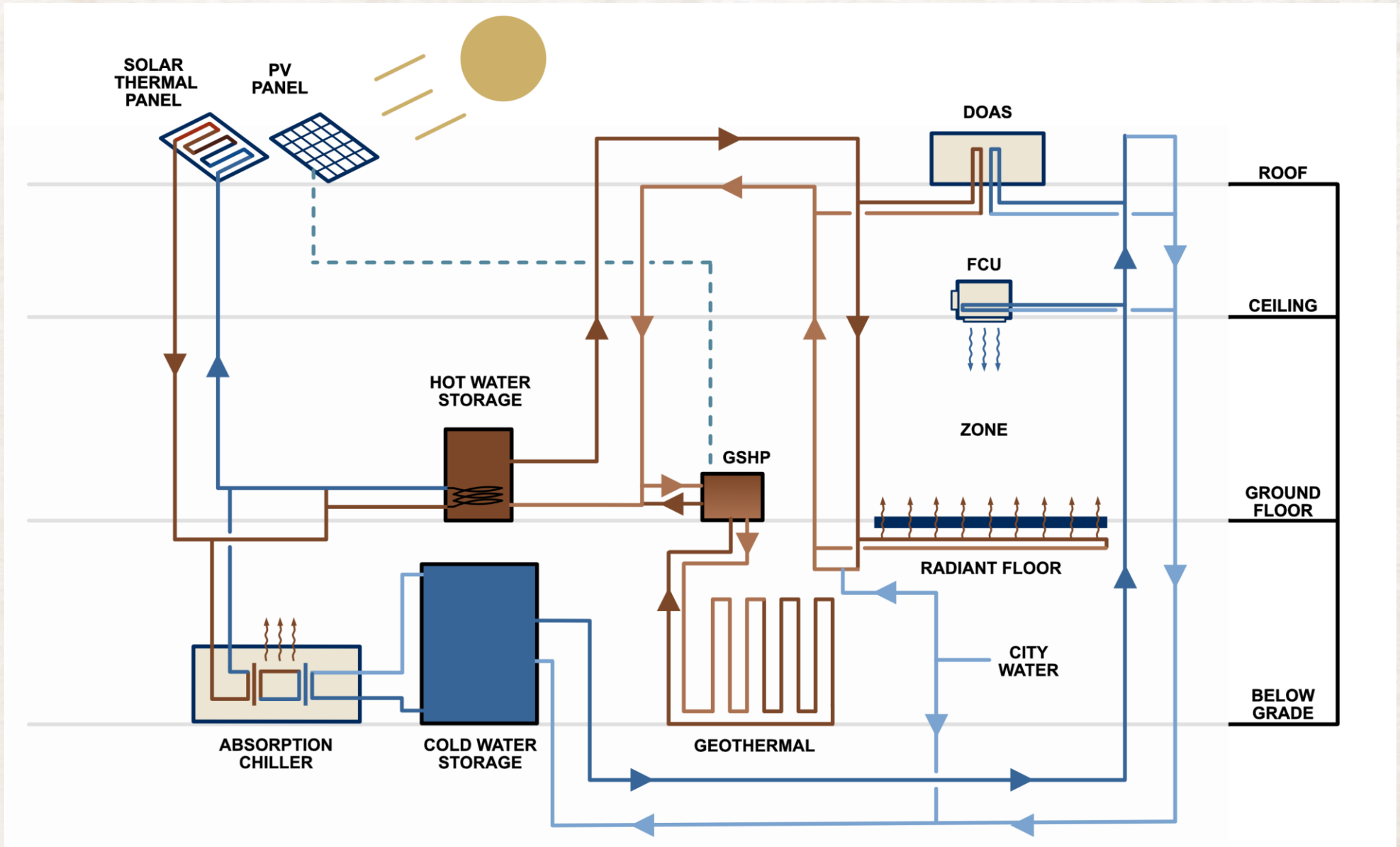
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Heat Energy Powers Cooling System



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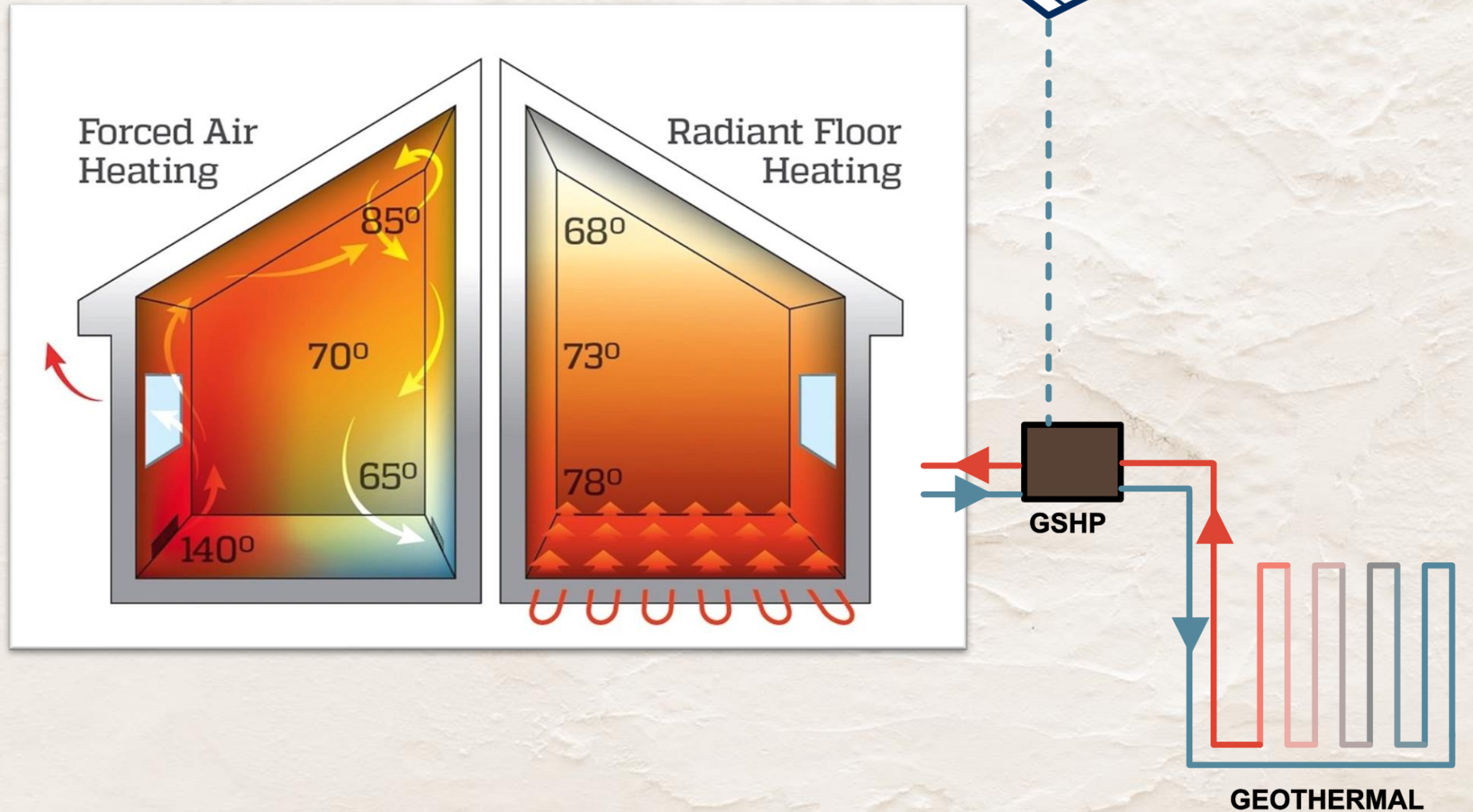
PV Powering GSHP

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Project Cost Overview



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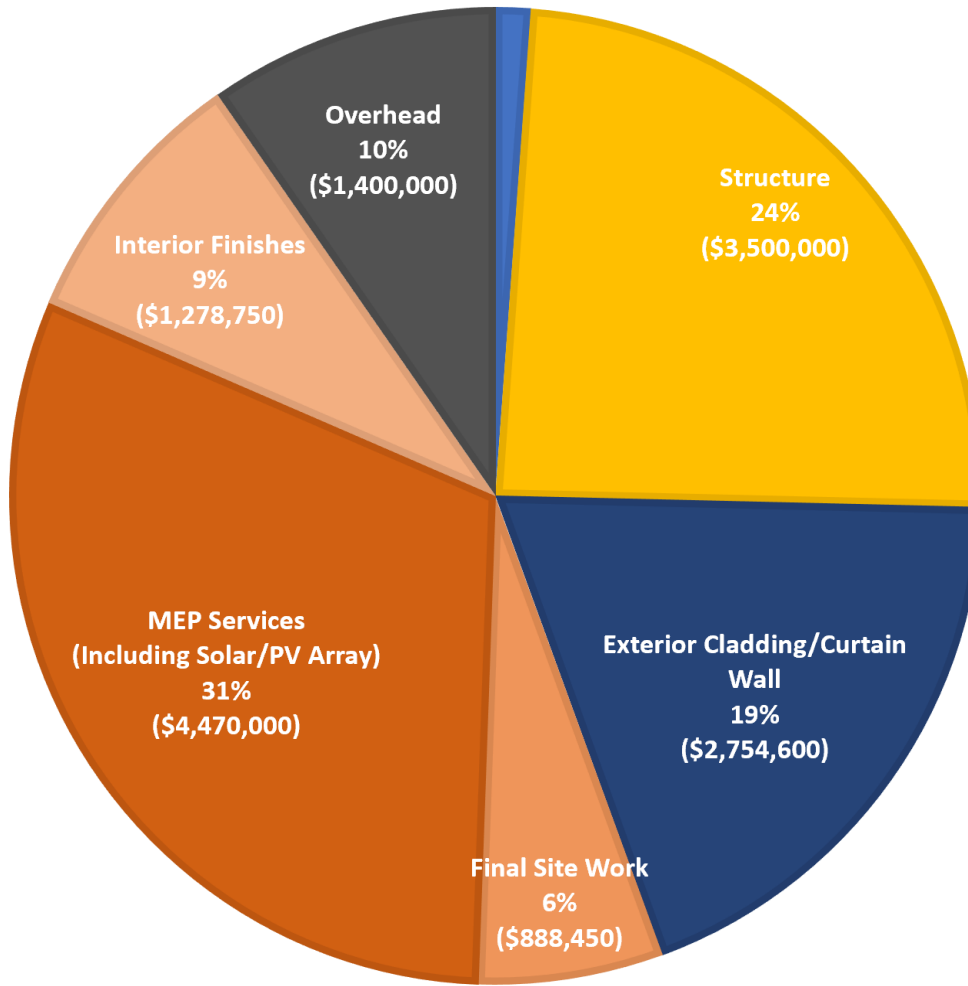
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Project Overview

Estimated Project Duration	14 Months
Total Site Square Footage	32750 Sq. Ft
Total Building Square Footage	23235 Sq. Ft
Total Project Cost	\$14,460,550
Project Cost/Square Footage	\$622/Sq. Ft



Energy Analysis

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Site EUI
After EEMs

Baseline:
EUI 39.6

PREPARE

Passive Strategies:
EUI 17.4

Mech. Upgrades:
EUI 11.6

Solar Power:
EUI -1.3

NET
POSITIVE

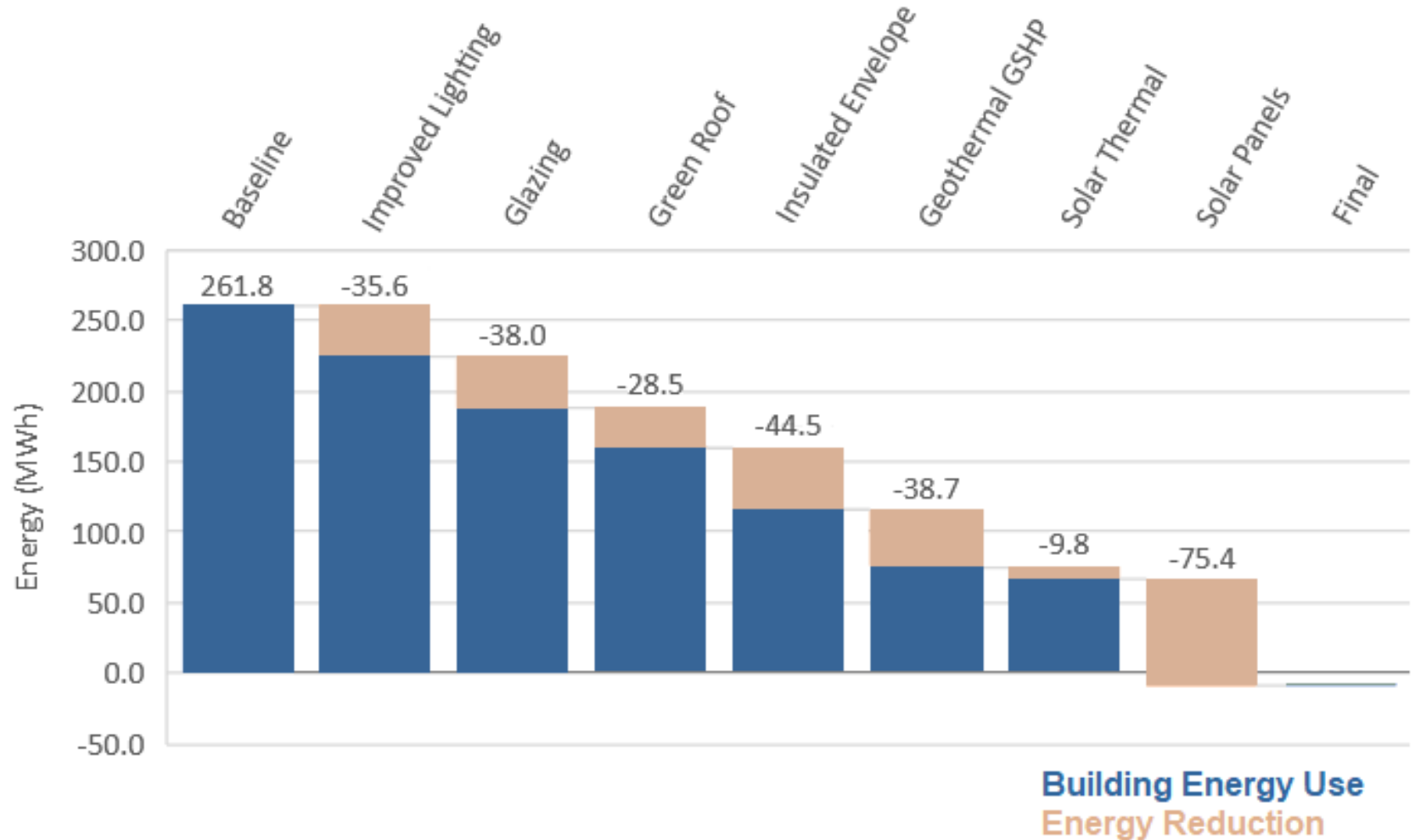
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Building Energy Reduction Measures





Beyond Net Zero

Carbon Accounting

Exposure



Community



Teaching



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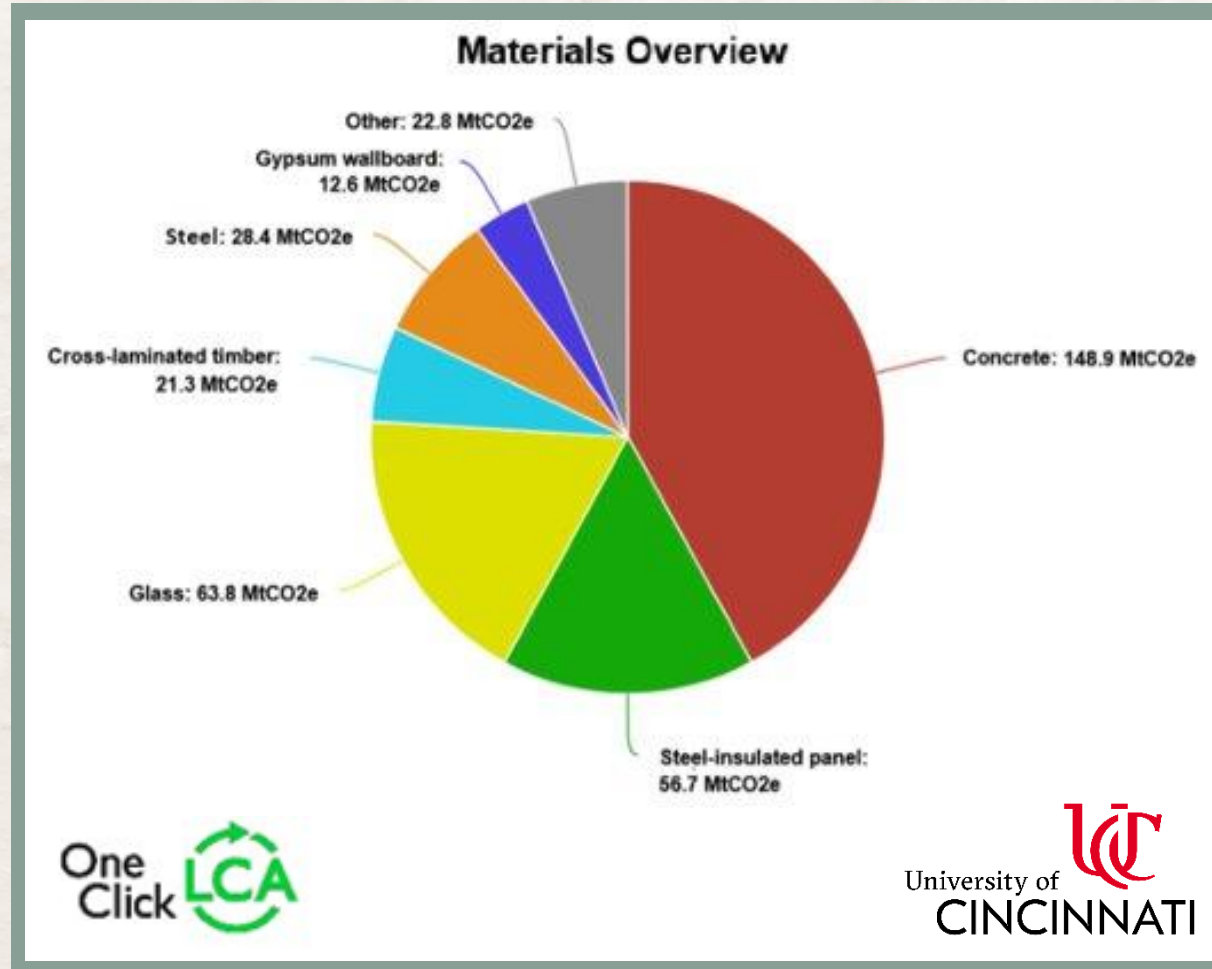
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THANK YOU!

