



RIVER ARCHITECTS

JAMES HARTFORD, AIA, LEED AP, CPHC

KARL HANSEN, AIA, NCARB, CPHC



SEMINARY HILL CIDERY & ORCHARD

PRESENTATION TOPICS

Project Introduction
Commercial Passive Building Challenges
Separate Zone Needs
Innovative Materials
Excess CO2 Management



Credit: Brad Dickson

SITE & ORCHARD HISTORY



SITE & ORCHARD HISTORY



Credit: Seminary Hill Website

SITE & ORCHARD HISTORY



SITE & ORCHARD HISTORY



SITE & ORCHARD HISTORY



Credit: Stuart J Madany, Seminary Hill

DESIGN INSPIRATION



Right Photo Credit: Brad Dickson

DESIGN INSPIRATION



PROJECT TEAM

CONTRACTOR

Baxter

HEAVY TIMBER/SIPS

New Energy Works

MEP ENGINEER

Staengl Engineering

STRUCTURAL ENGINEER

Blue Sky Design

CIVIL ENGINEER

Glenn Smith Consulting
Engineer, PC

RATER/VERIFIER

Integral Building + Design



Credit: Brad Dickson

PROJECT SPECIFICATIONS

CLIENT

Doetsch Family II LLC

LOCATION

Callicoon, NY

KEY FACTS

9,350 SF New Construction

Reduced Carbon Concrete

First Commercial Cider Mill
to earn PHIUS Certification

PHIUS+ 2018 Certified

CONSTRUCTION COST

\$4.2 M

COMPLETION DATE

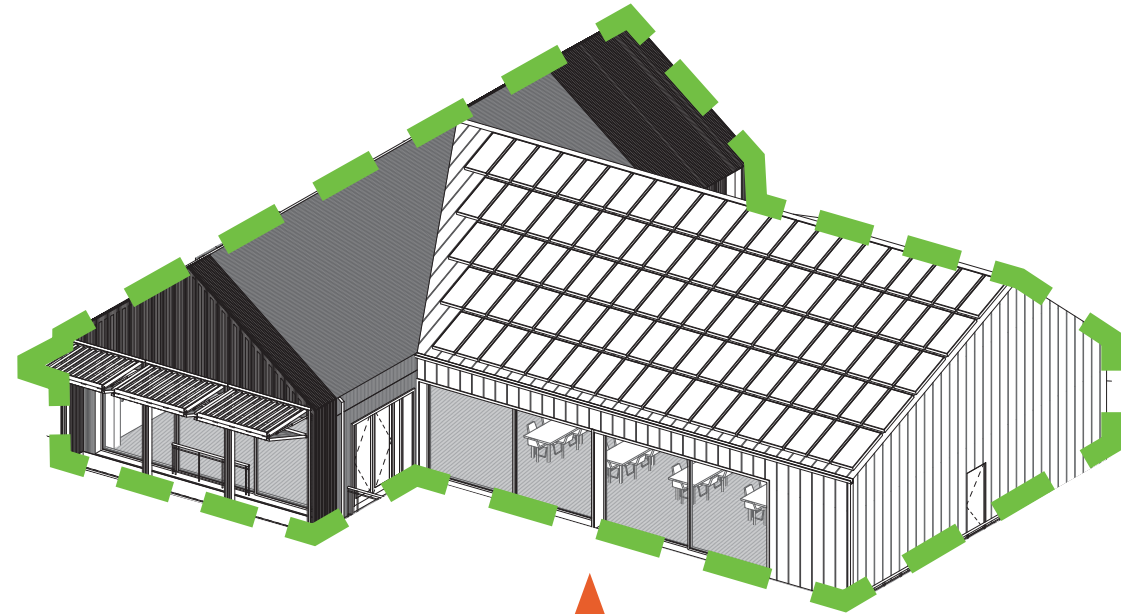
Spring 2021



Credit: Brad Dickson

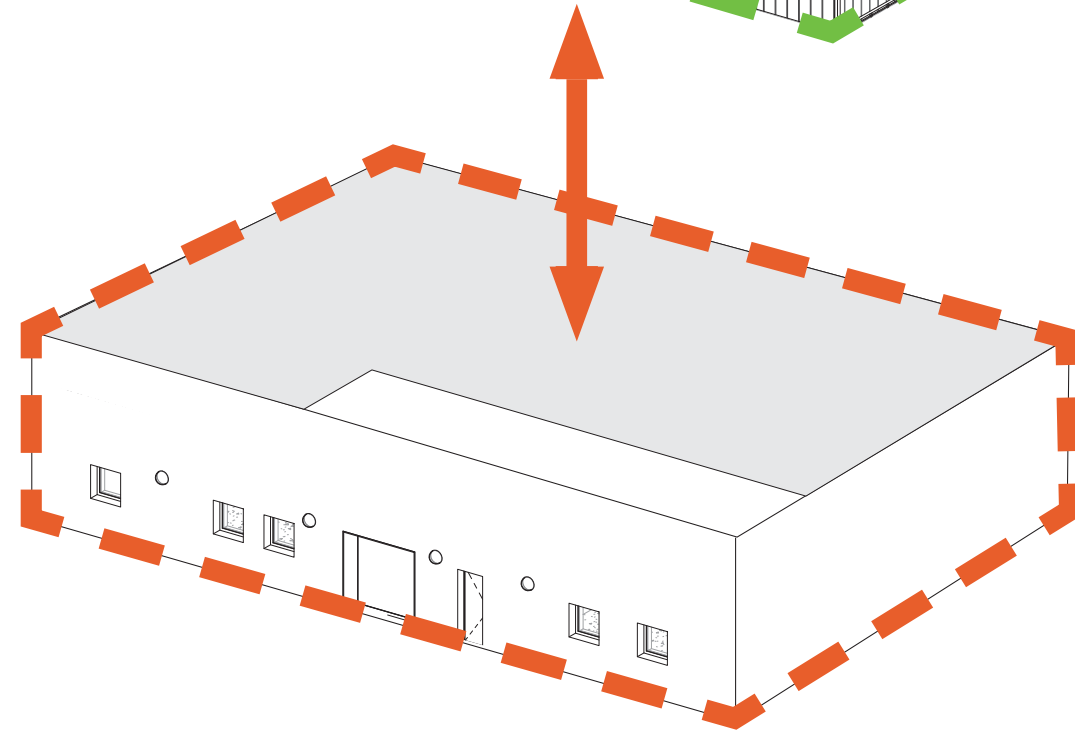
TWO THERMAL ZONES

What happens when PHIUS standards move from human comfort ...



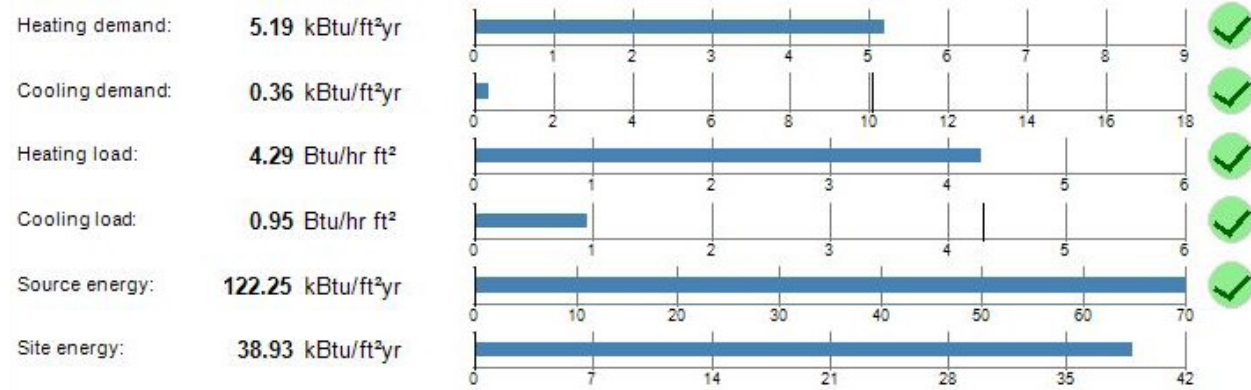
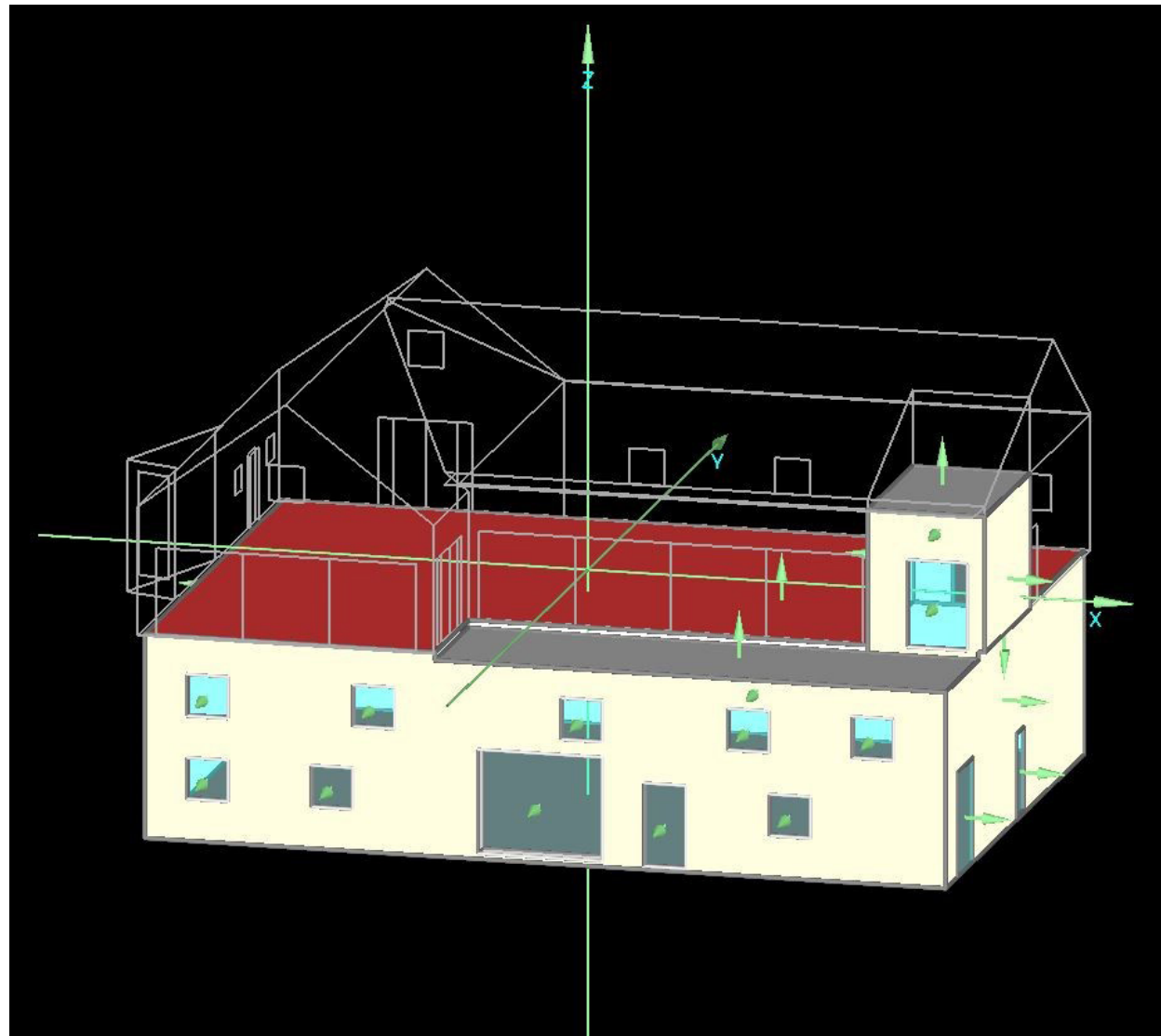
Heating set temperature: 68° F
Cooling set temperature: 77° F

... to apple comfort?

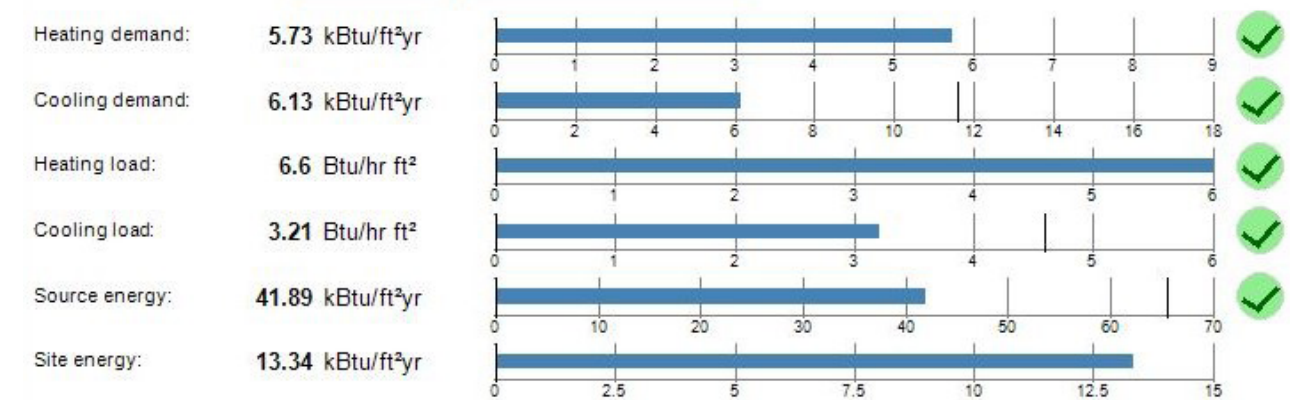
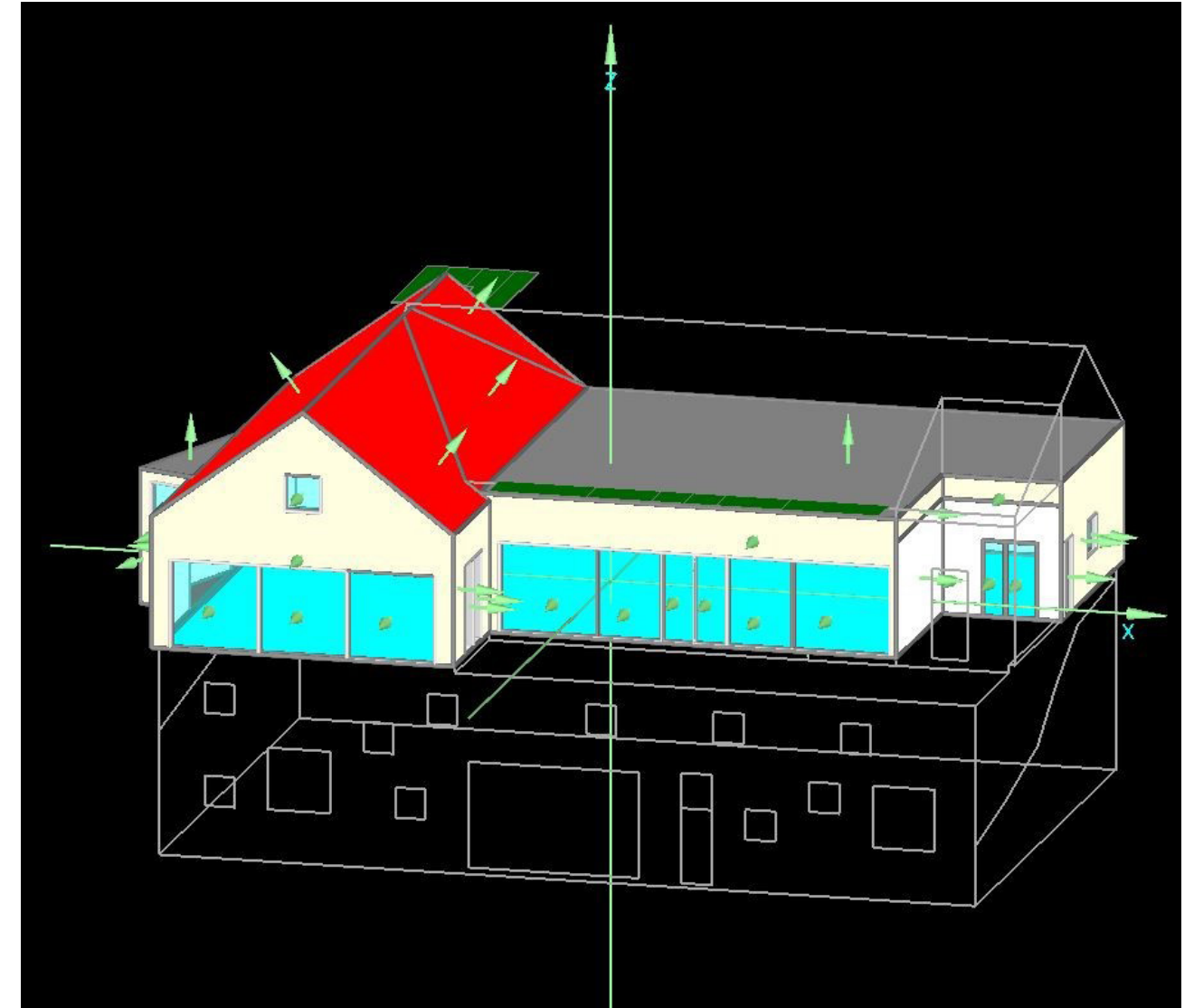


Heating set temperature: 55° F
Cooling set temperature: 70° F

WUFI - ZONE 1



WUFI - ZONE 2

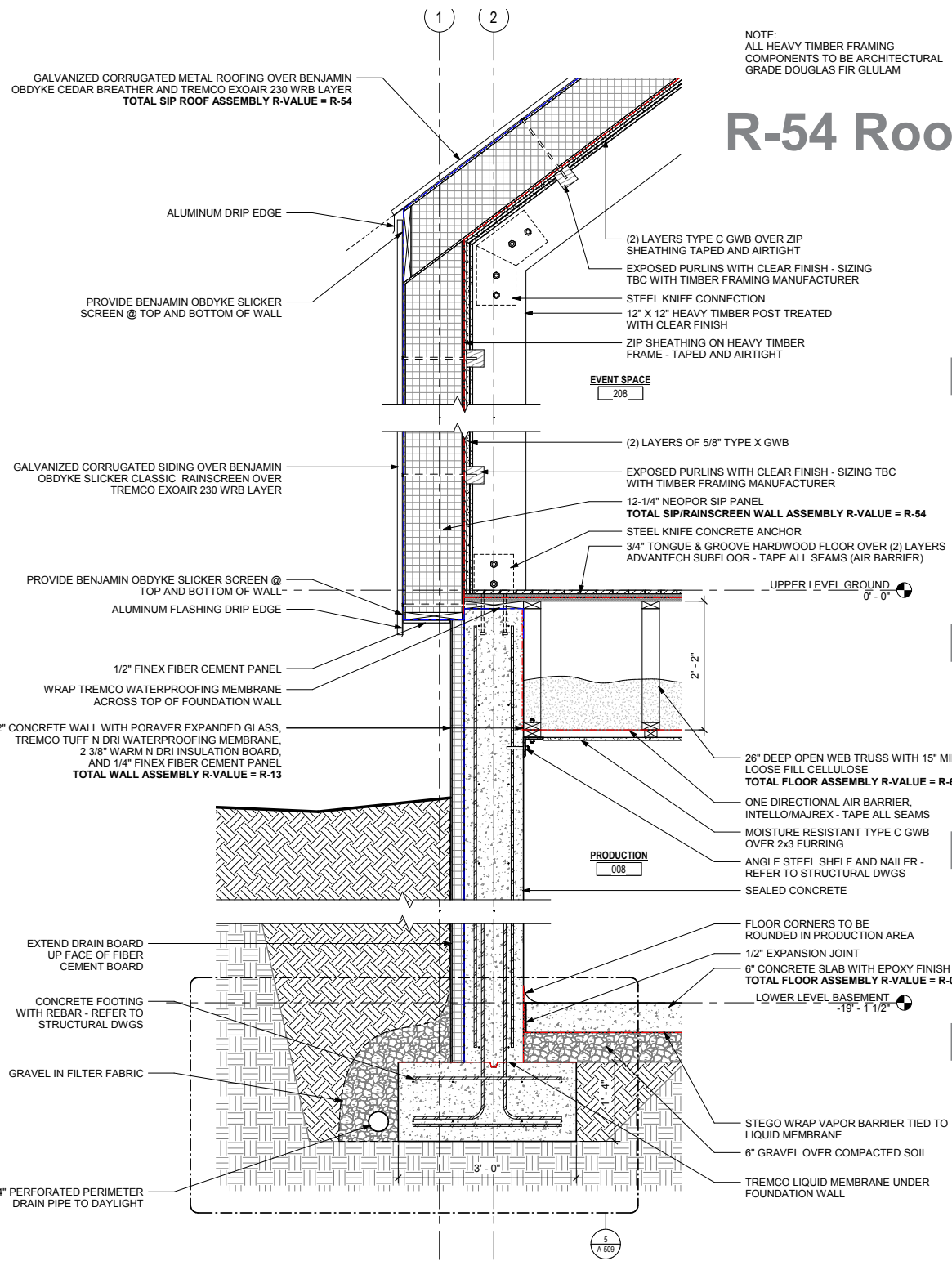


TWO THERMAL ZONES



Credit: Matthew L Repp, Baxter

TWO ZONES: R-VALUES



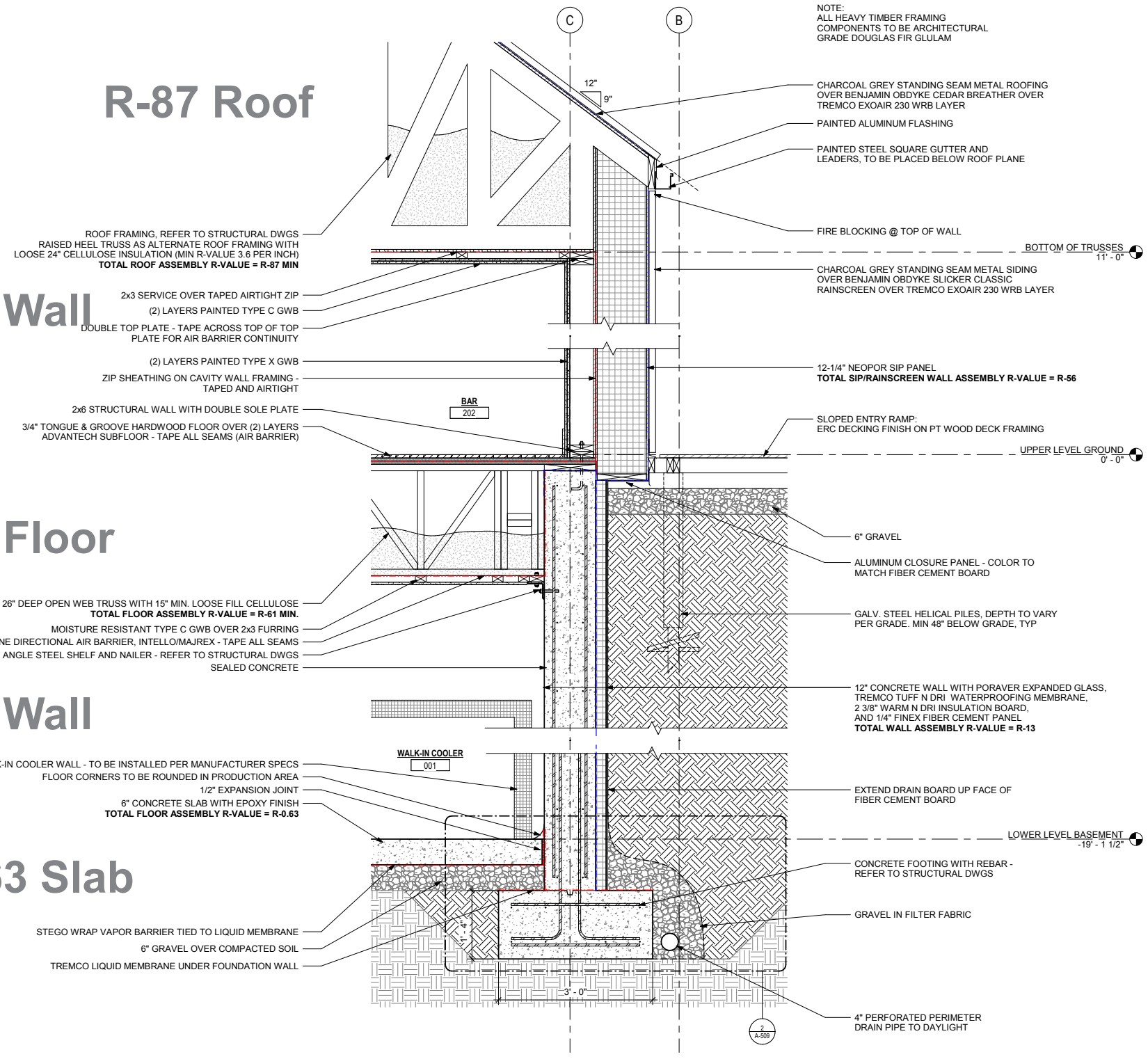
R-54 Roof

R-54 Wall

R-40 Floor

R-13 Wall

R-0.63 Slab



R-87 Roof

R-40 Floor

R-13 Wall

R-0.63 Slab

THERMAL BOUNDARIES



Credit: Matthew L Repp, Baxter

THERMAL BOUNDARIES



Credit: Matthew L Repp, Baxter

THERMAL BREAKS



Credits: Matthew L Repp, Baxter

THERMAL BREAKS

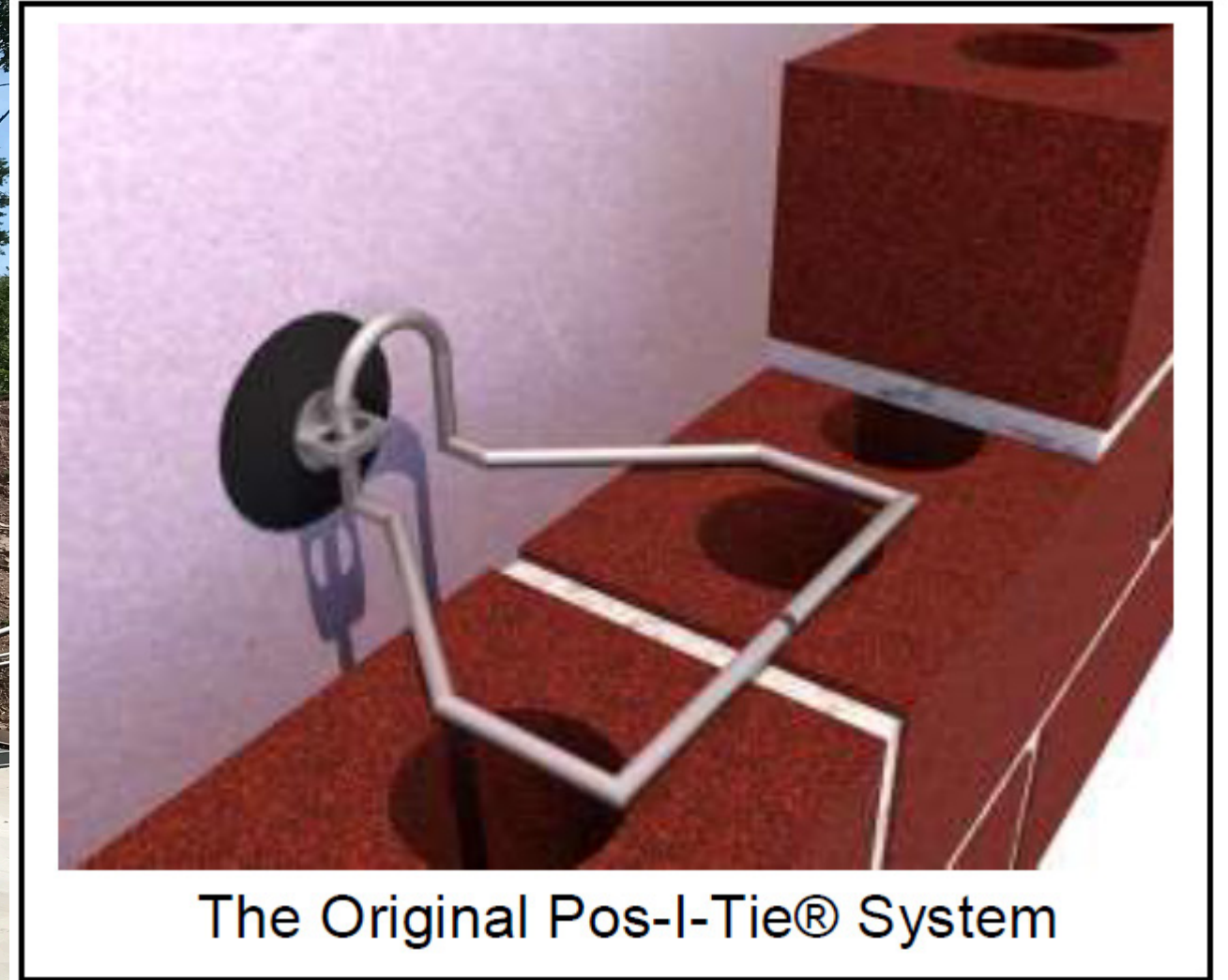


Credits: Matthew L Repp, Baxter

THERMAL BREAKS



Credit: Matthew L Repp, Baxter



The Original Pos-I-Tie® System

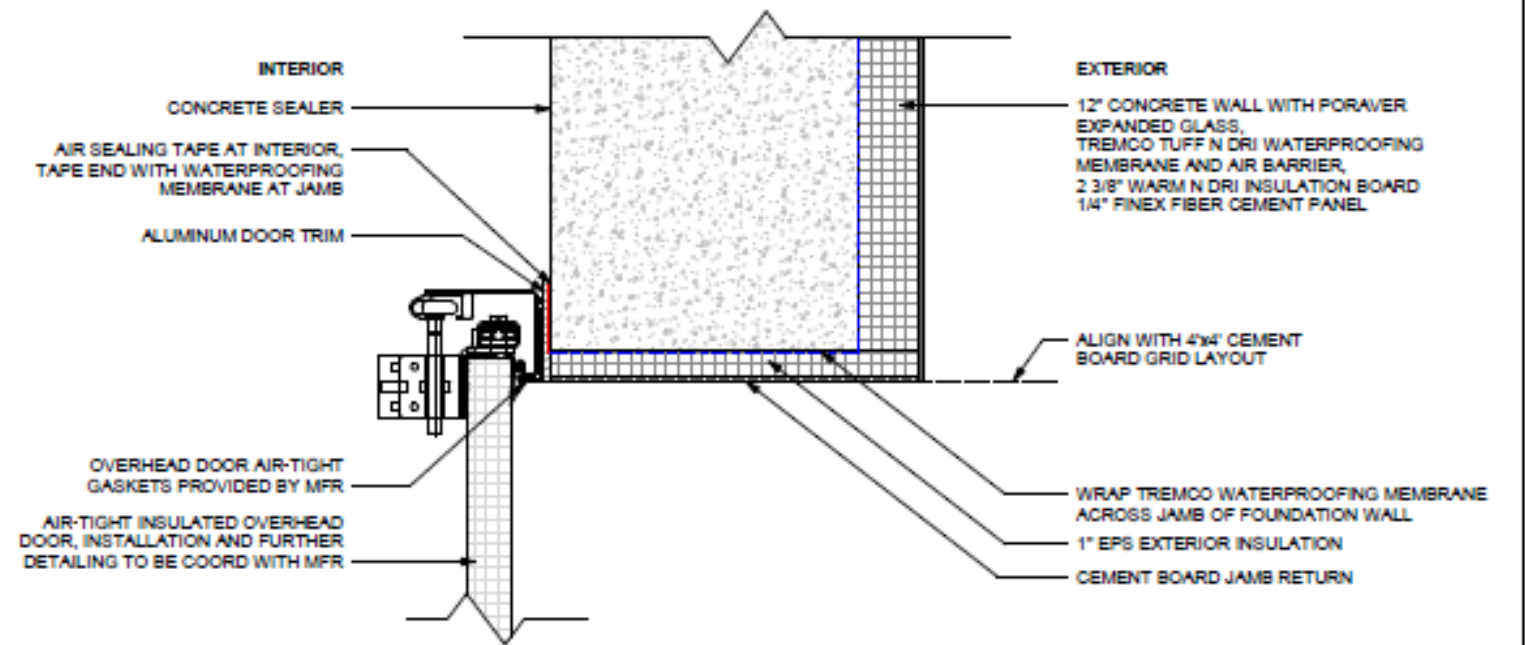
Credit: Heckman Anchors Original Pos-I-Tie®

OVERHEAD DOOR



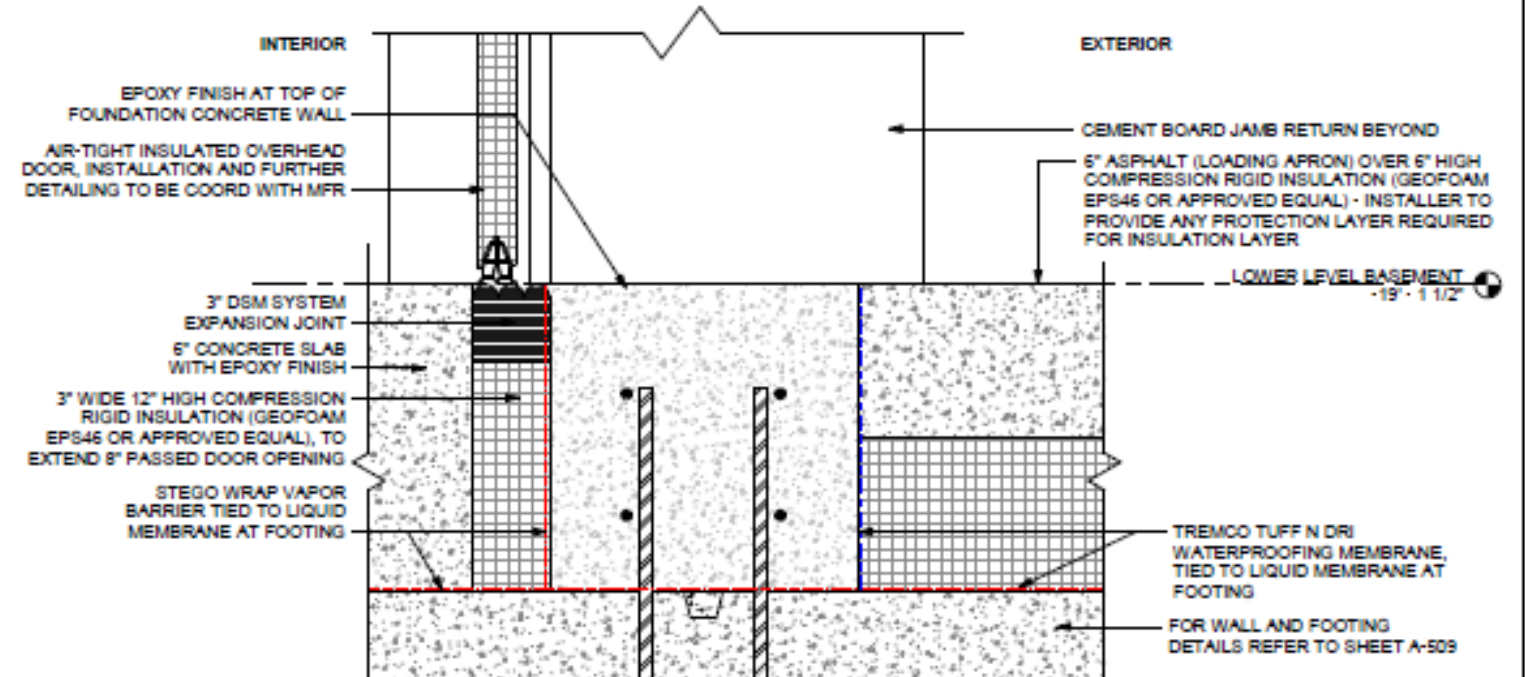
① OVERHEAD DOOR HEAD DETAIL

SCALE: 3" = 1'-0"



② OVERHEAD DOOR JAMB DETAIL

SCALE: 3" = 1'-0"



Credits: Matthew L Repp, Baxter
PHIUSCON 2021

DOORS + WINDOWS



Credits: Matthew L Repp, Baxter

INNOVATIVE MATERIALS



Credit: Matthew L Repp, Baxter

PORAVER EXPANDED GLASS

SPECS

R-1.6/Inch for Poraver 0.25-0.5



0.1 - 0.4 mm



0.25 - 0.5 mm



0.5 - 1 mm



1 - 2 mm

Credit to: Poraver® North America Inc.

ASSEMBLY + MATERIALS



Credits: Matthew L Repp, Baxter

ASSEMBLY + MATERIALS



Credits: Matthew L Repp, Baxter



ASSEMBLY + MATERIALS



Credit: Matthew L Repp, Baxter

ASSEMBLY + MATERIALS



Credit: Matthew L Repp, Baxter

ASSEMBLY + MATERIALS



Credit: Matthew L Repp, Baxter

SYSTEMS



Credit: Matthew L Repp, Baxter

SYSTEMS



Credits: Stuart J Madany, Seminary Hill

SYSTEMS



Credit: Matthew L Repp, Baxter

EVENT SPACE



Credit: Brad Dickson

PRODUCTION SPACE



Credit: Brad Dickson

PRODUCTION EQUIPMENT CO2



Credits: Stuart J Madany, Seminary Hill

PRODUCTION SPACE EXHAUST



Credit: Stuart J Madany, Seminary Hill

INTERIOR VIEW



Credit: Matthew L Repp, Baxter

INTERIOR VIEW



Credit: Brad Dickson

PHIUSCON 2021

| SEMINARY HILL ORCHARD & CIDERY | PAGE: 40

CREDITS

River Architects Staff

James Hartford, AIA, LEED AP, CPHC
Karl Hansen, AIA, NCARB, CPHC (Project Manager)
Vera Voropaeva, CPHC (Designer and WUFI modeler)
Adriana Rombaldi, LEED GA, CPHC (WUFI modeler)

Staengl Engineering

Christopher Fuller, Senior Mechanical Engineer of Staengl Engineering
David Leetch, Senior Electrical Engineer

Blue Sky Design

Joseph Kelmanovich, Managing Partner

Glenn Smith Consulting Engineer, PC

Glenn L. Smith, P.E.

Baxter Construction Manager

Matthew Repp, Project Manager & CPHB

Other consultants:

Tony Lisanti, PHIUS Rater, of Integral Building + Design

Photo Credits:

Brad Dickson

Matthew L Repp of Baxter

River Architects Studio: Nicholas Doyle

Stuart J Madany

Heckman Anchors

Poraver®

THANK YOU!

AWARDS



PUBLICATIONS

Metropolis
Architect
Dezeen



Credit: Matthew L Repp, Baxter