

## Passive House Design Problem #1

What the hell do I do with the giant forehead on my building now...



# Cedar Haus- Tapered Overhangs & Hidden Headers



## Cedar Haus- Tapered Overhangs & Hidden Headers





## Cedar Haus- Tapered Overhangs & Hidden Headers

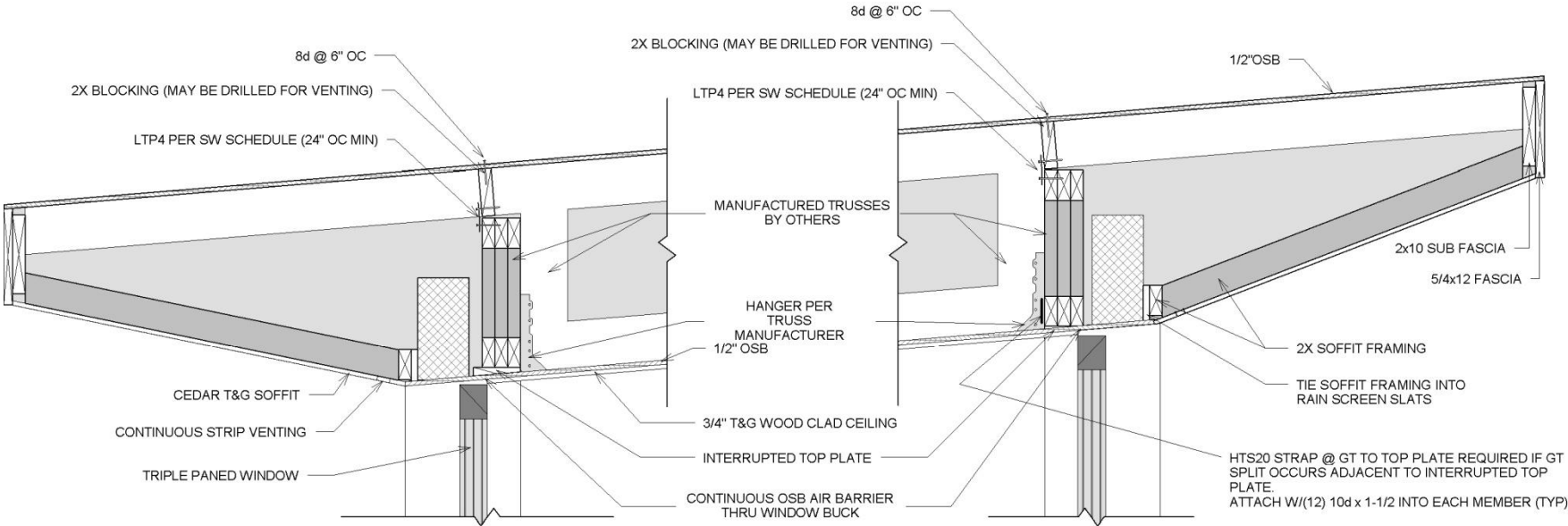




# Cedar Haus- Inside Out



# Cedar Haus- Tapered Overhangs & Hidden Headers





# Bridge House

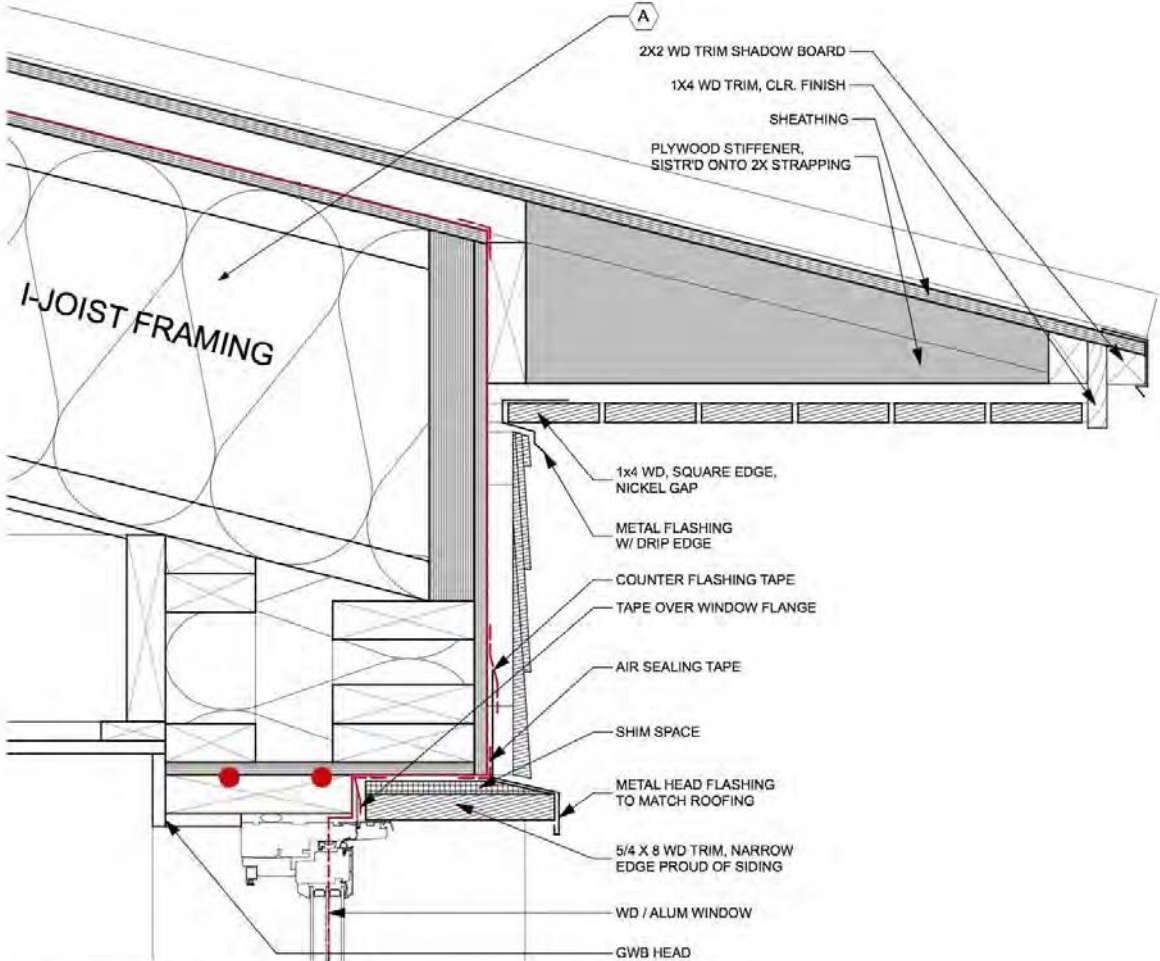




# Bridge House

Architect:  
Kaplan Thompson Architects  
Jesse Thompson & Sam Funari

Builder:  
Mark Dorsey, Freeport ME



**5** BOTTOM OF SLOPED ROOF DETAIL  
SCALE: 3" = 1'-0"

GIANT FOREHEAD CONTINUED...


SUNSHADE + SOLAR POWER PRODUCING SHUTTERS



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**FNA** FETE  
NATURE  
ARCHITECTURE

STEVENS INSTITUTE/SURE HOUSE

# SUNSHADE + SOLAR POWER PRODUCING SHUTTERS



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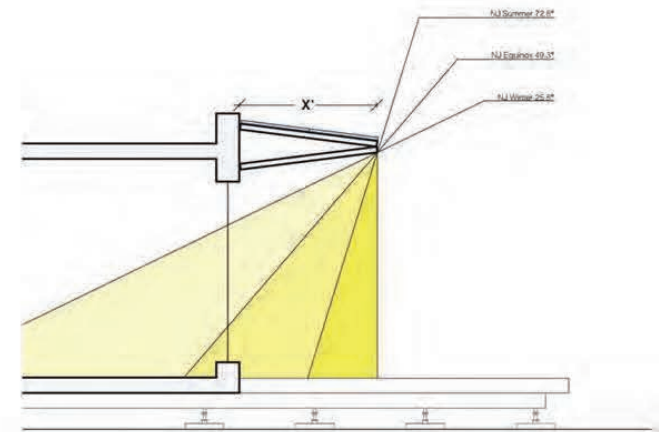
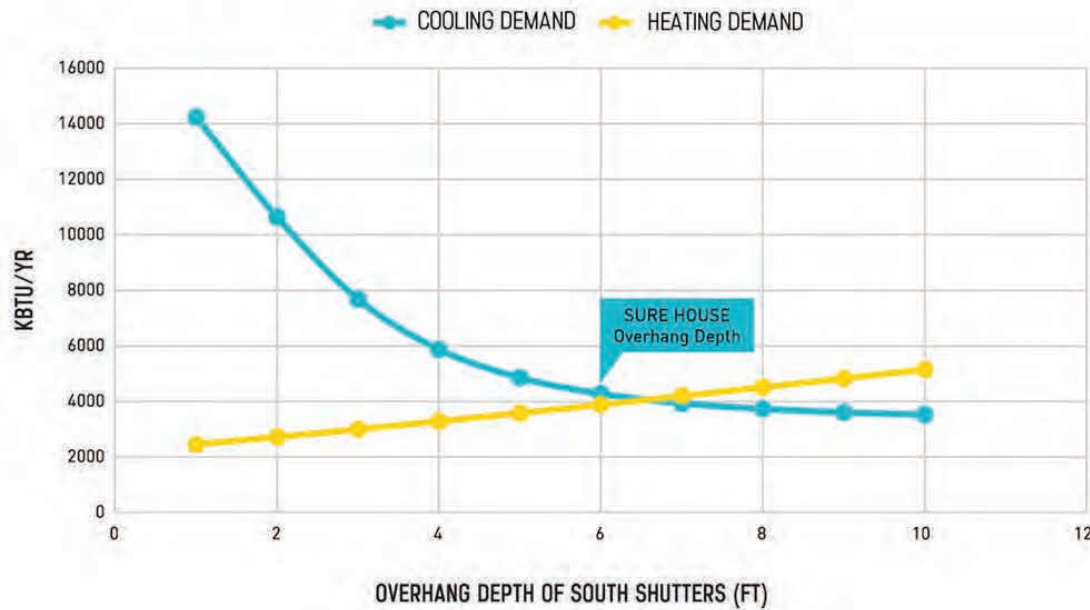
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ARCHITECTURE

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# SUNSHADE + SOLAR POWER PRODUCING SHUTTERS

Shading Analysis: PHPP



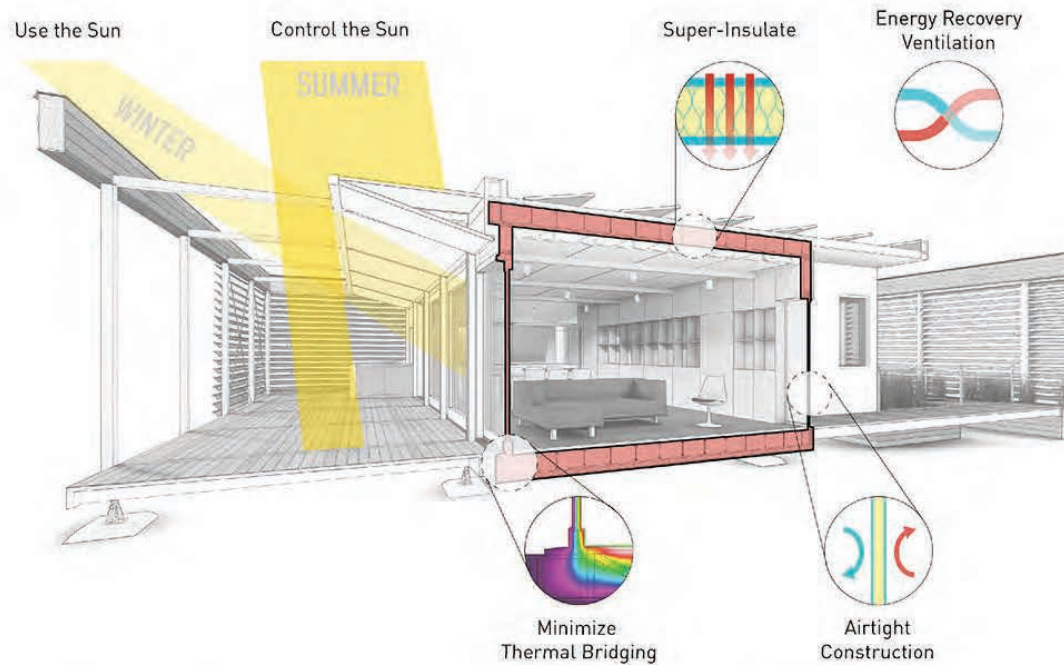
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# SUNSHADE + SOLAR POWER PRODUCING SHUTTERS



## Passive House + Energy Simulation

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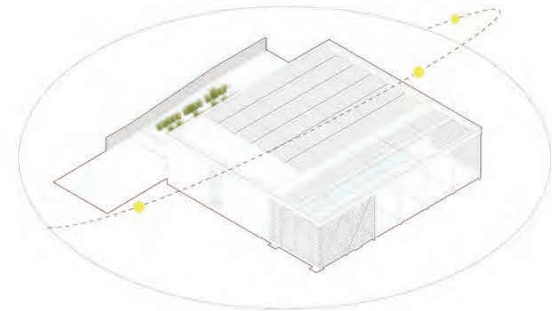
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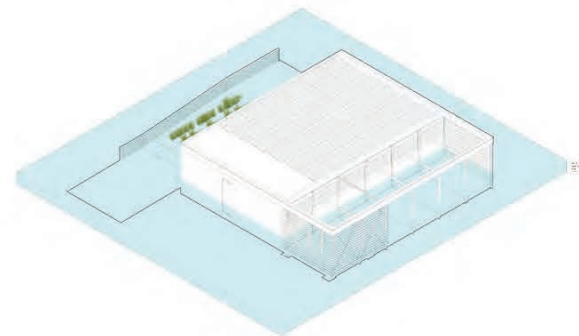
# SUNSHADE + SOLAR POWER PRODUCING SHUTTERS



Daily Use





Storm Use



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# SUNSHADE + SOLAR POWER PRODUCING SHUTTERS



Lifting Operations

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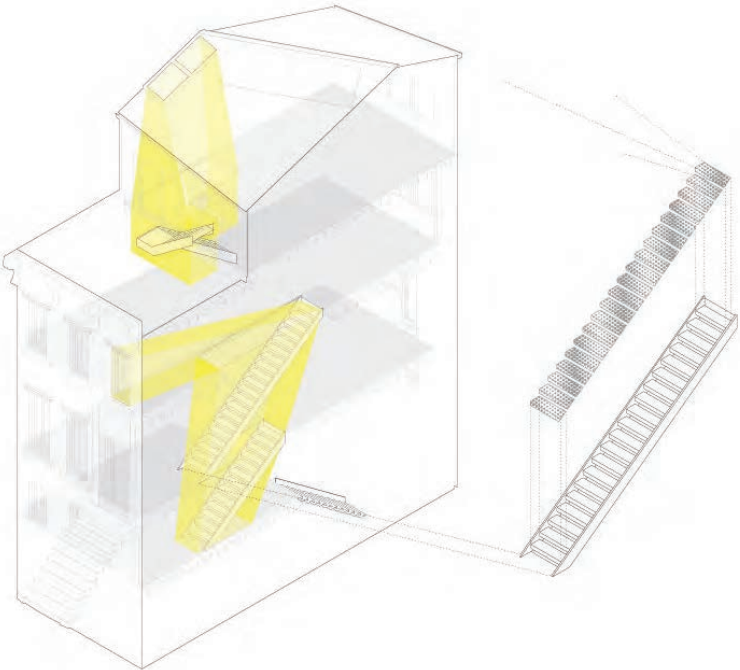
# PASSIVE HOUSE PROBLEM #2

## HOW TO BRING NATURAL LIGHT IN W/O OVERHEATING

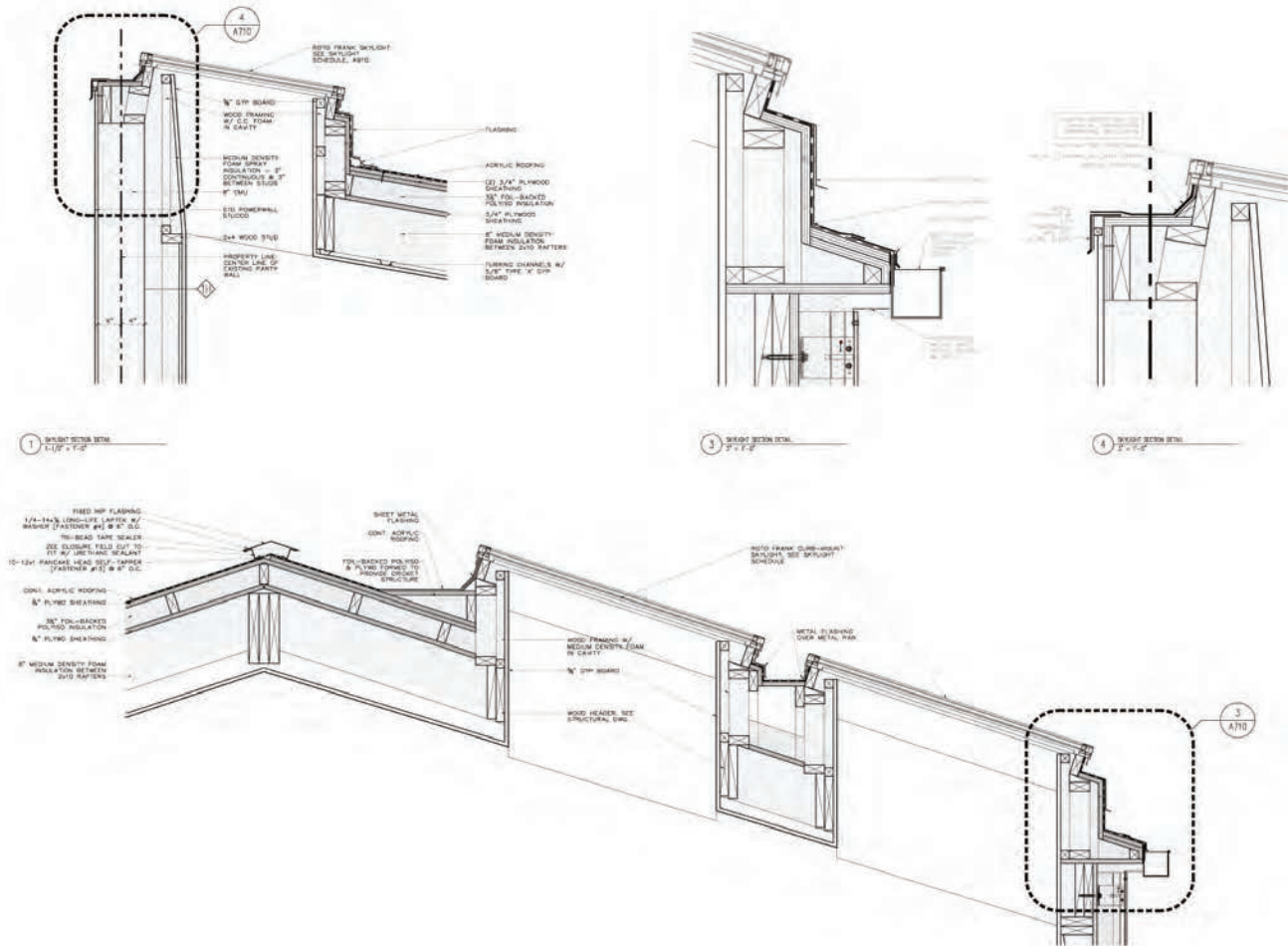




# NATURAL LIGHT INTO THE CORE



# NATURAL LIGHT INTO THE CORE



# NATURAL LIGHT INTO CORE





# NATURAL LIGHT INTO CORE



## Passive House Design Problem #3

The forbidden cantilever...



# Queen Ann Passive & Big Ass Cantilevers

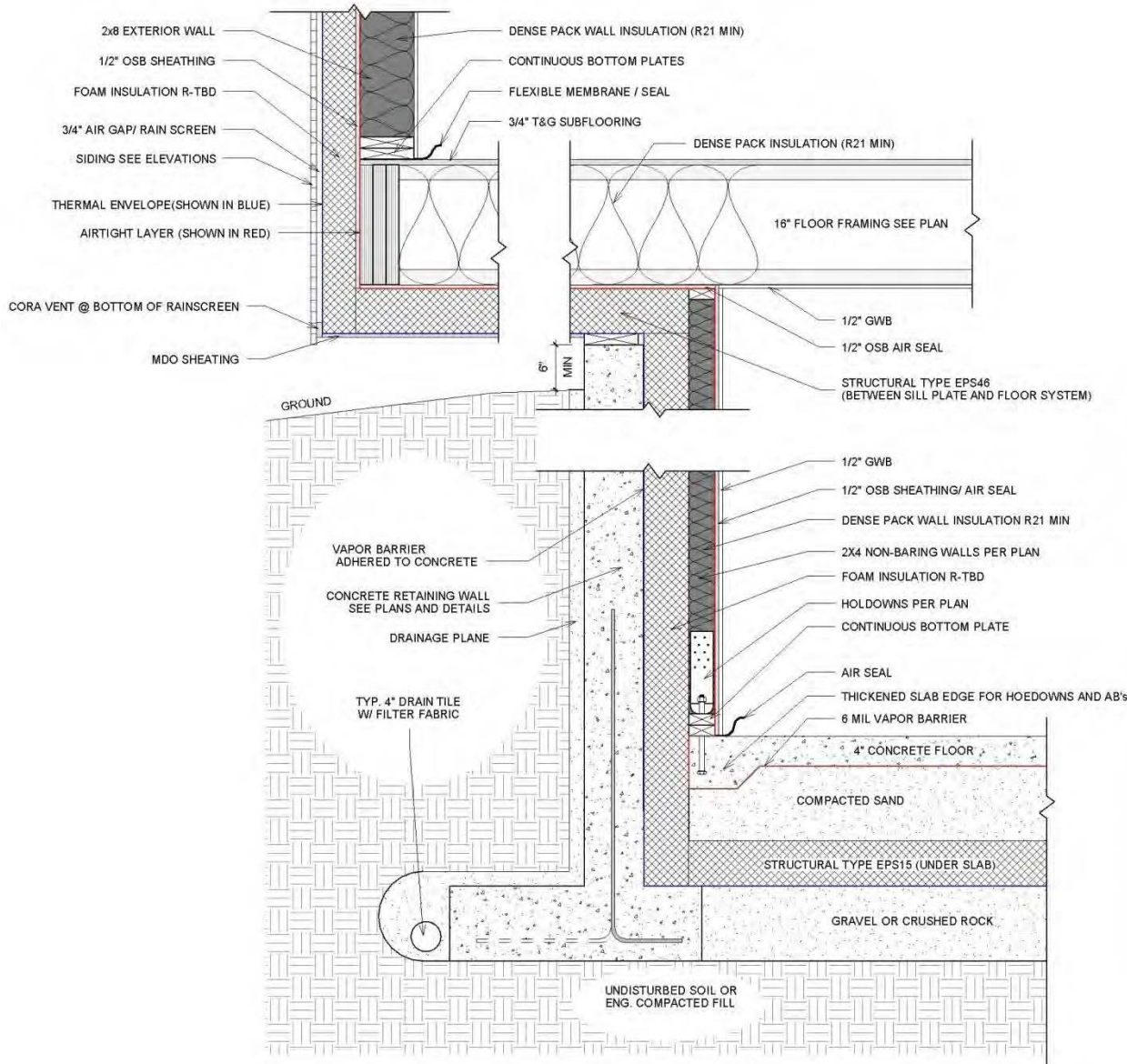




# Queen Ann Passive & Big Ass Cantilevers



# Queen Ann Passive & Big Ass Cantilevers



# Madrona House & More Cantilevers





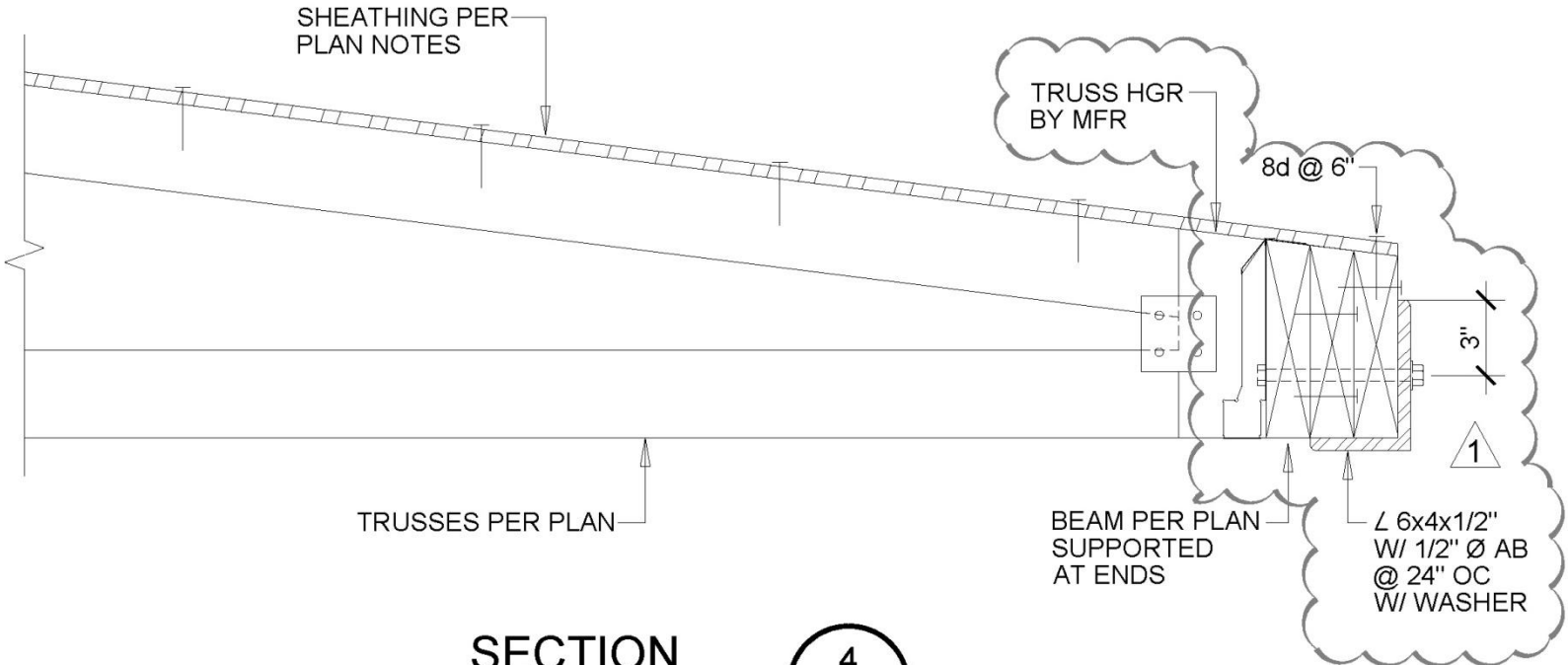
# Madrona House & More Cantilevers



# Prairie Passive Flitch Beam Cantilever



# Prairie Passive-Flitch Beam



**SECTION**

SCALE : 1 1/2" = 1'-0"

4  
S4.1



# Prairie Passive Flitch Beam Cantilever



# Prairie Passive Flitch Beam Cantilever



# PASSIVE HOUSE DESIGN PROBLEM #4

## RESILIENCY AND THE ELEVATED SLAB





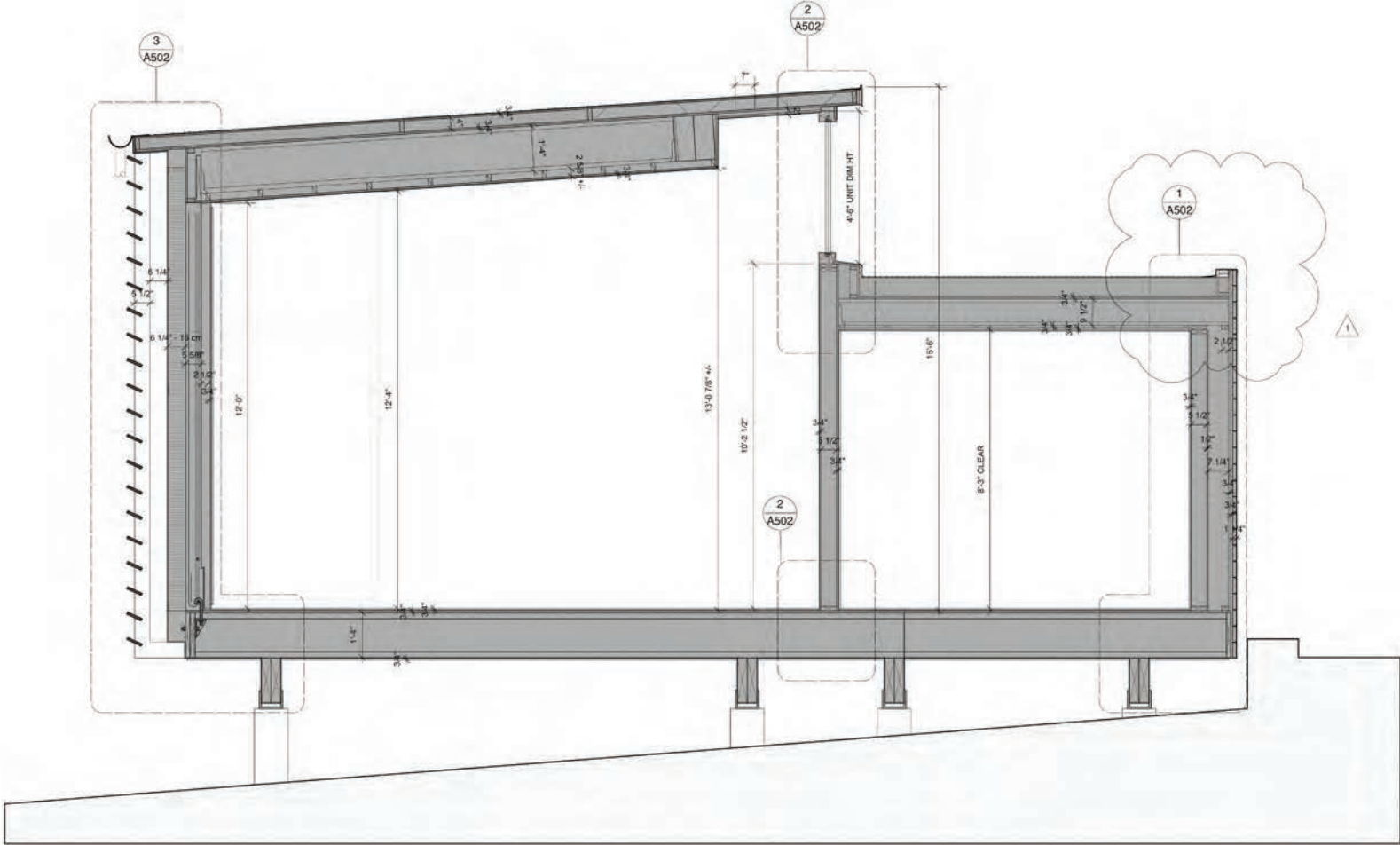
# ELEVATED CLASSICS



# ELEVATED NIGHTMARES



# PH ART STUDIO TREADING LIGHTLY ON EARTH

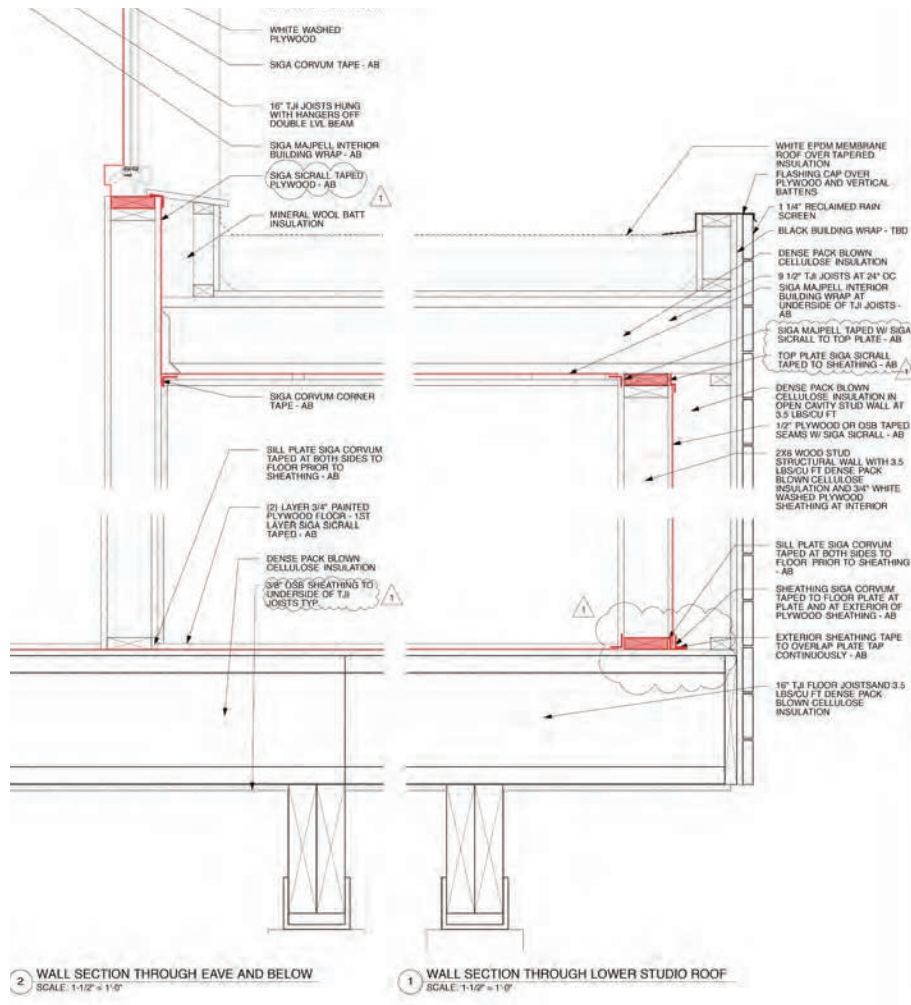




# PH ART STUDIO TREADING LIGHTLY ON EARTH



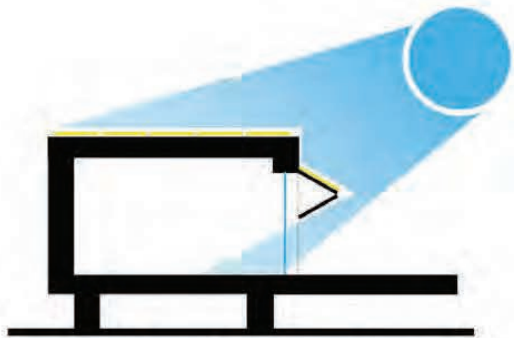
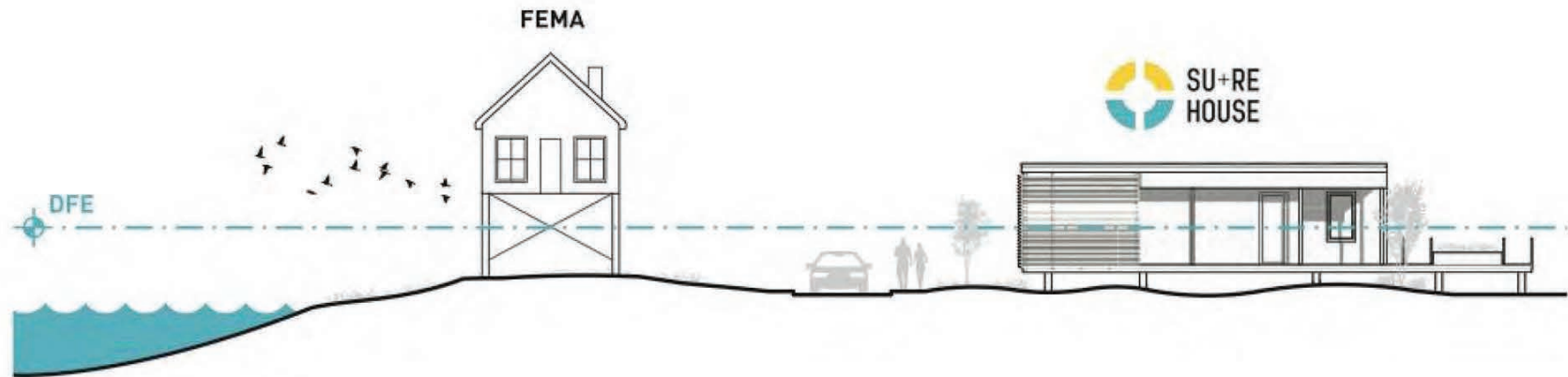
# PH ART STUDIO TREADING LIGHTLY ON EARTH



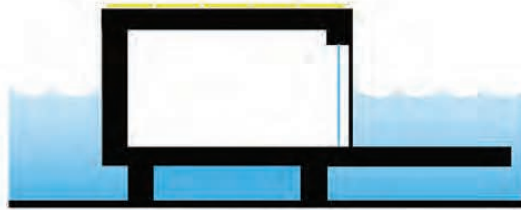
RYALL PORTER SHERIDAN /ART STUDIO



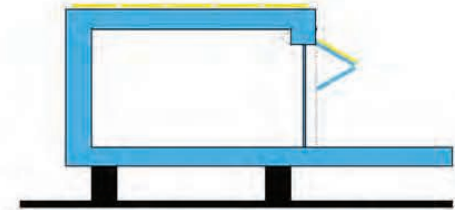
# PASSIVE HOUSE AND FEMA ELEVATED SLAB



100% SOLAR POWERED



FLOOD PROOF

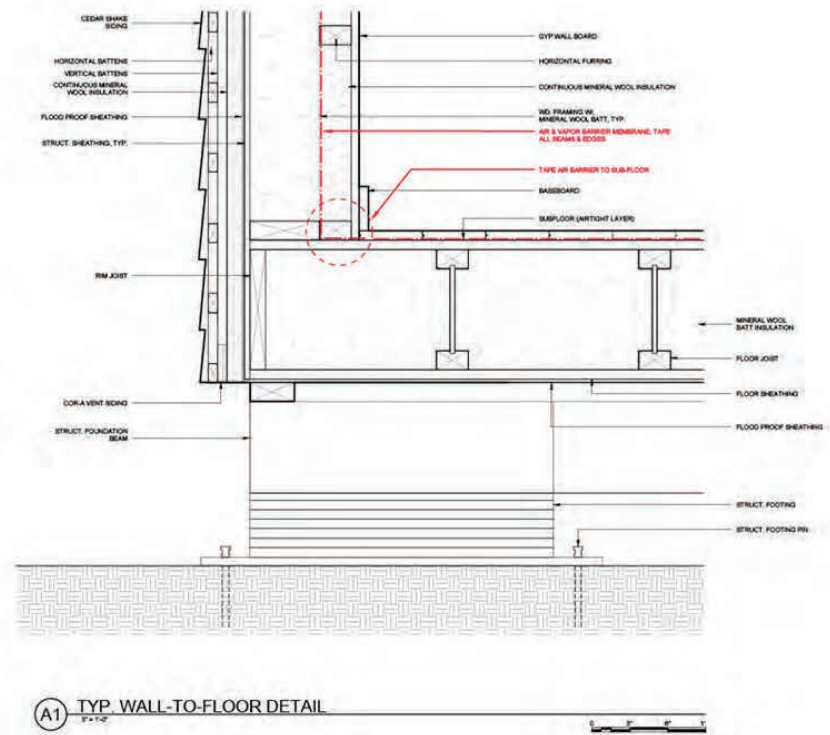


90% LESS ENERGY USE



# PASSIVE HOUSE AND FEMA ELEVATED SLAB

## Passive House Detailing: Heat Flux Analysis and Air-Sealing

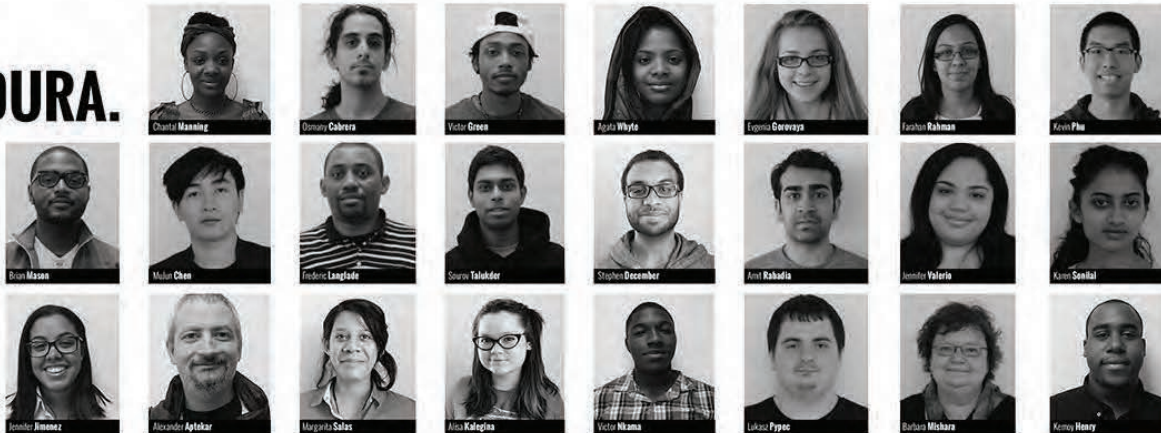


# PASSIVE HOUSE AND FEMA ELEVATED SLAB



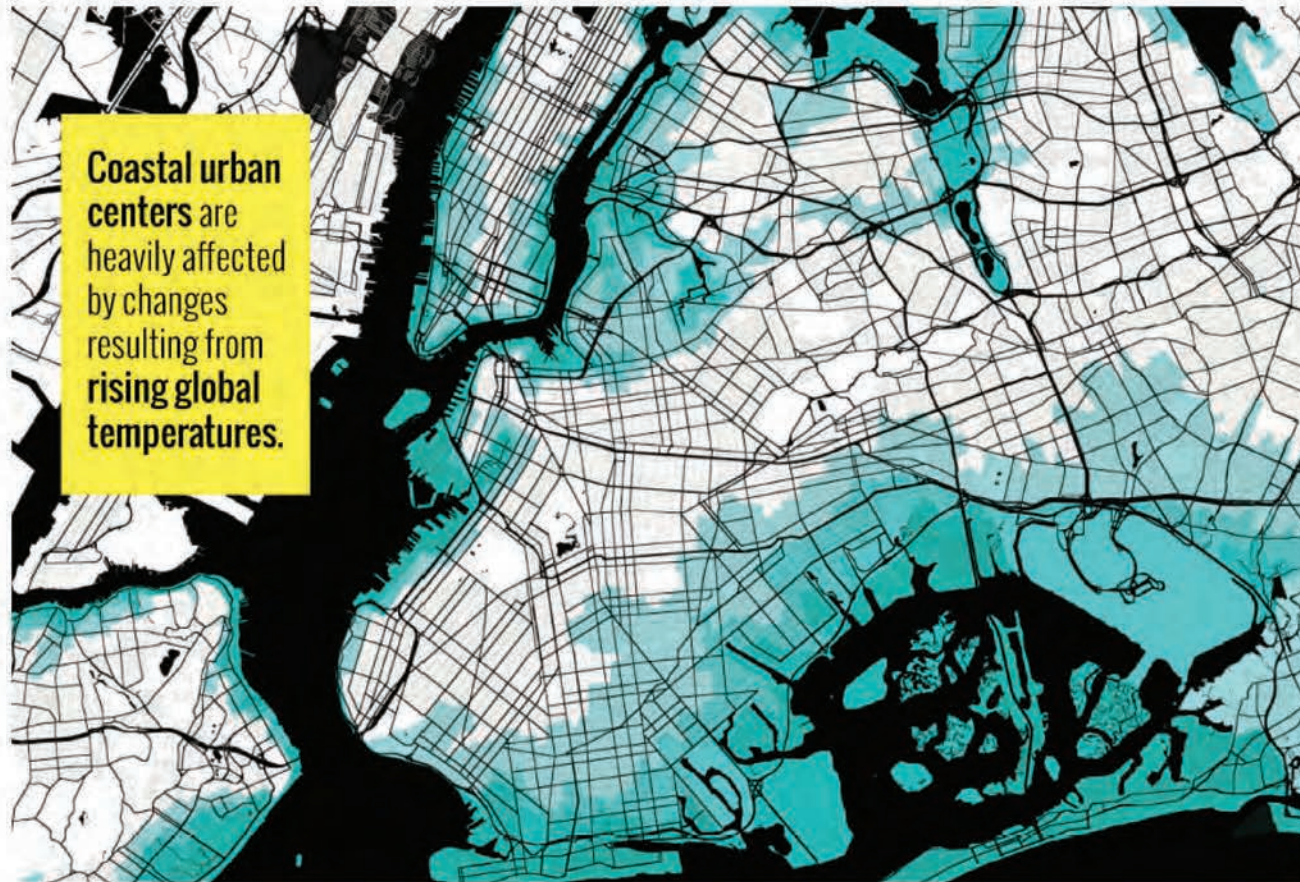
## meet TeamDURA.

The City Tech Solar Decathlon team is from a wide range of departments including Construction Management & Civil Engineering Technology, Mechanical Engineering Technology, Electrical Engineering Technology, Chemical Technology, Biological Sciences, Architectural Technology, Hospitality Management, Entertainment Technology and Communication Design.





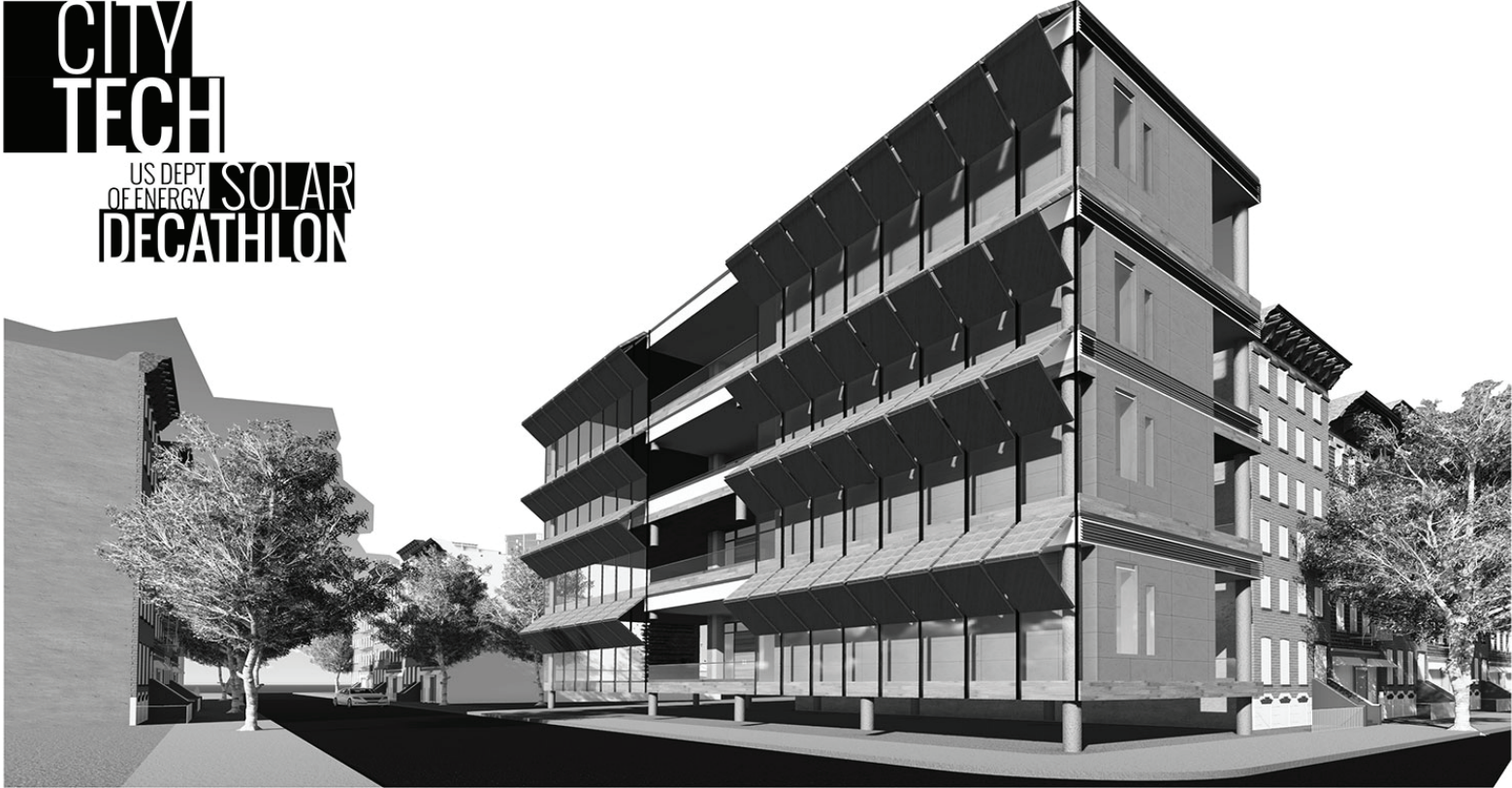
# PASSIVE HOUSE AND FEMA ELEVATED SLAB





# PASSIVE HOUSE AND FEMA ELEVATED SLAB

**CITY  
TECH**  
US DEPT  
OF ENERGY **SOLAR  
DECATHLON**

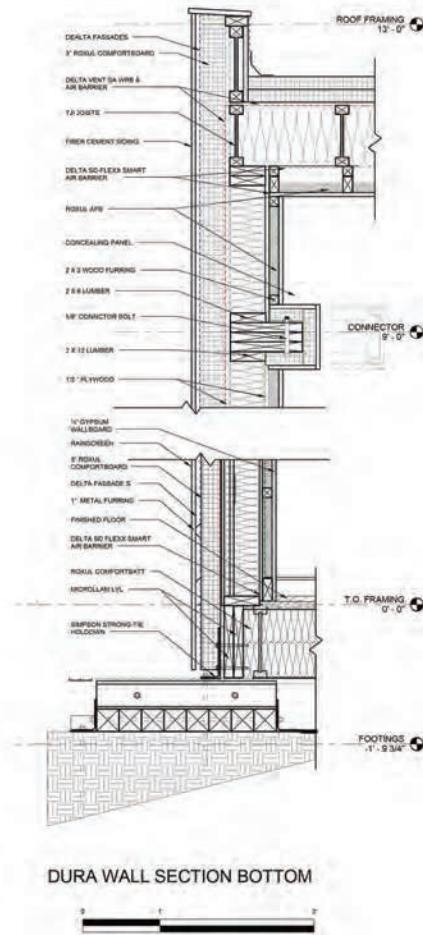


**STACKED  
SYSTEM**

**FNA** FETE  
NATURE  
ARCHITECTURE

NYC CITYTECH/TEAMDURA

# PASSIVE HOUSE AND FEMA ELEVATED SLAB



## Passive House Design Problem #5

How to blur the lines between inside and out, even though nothing can actually touch inside to out....

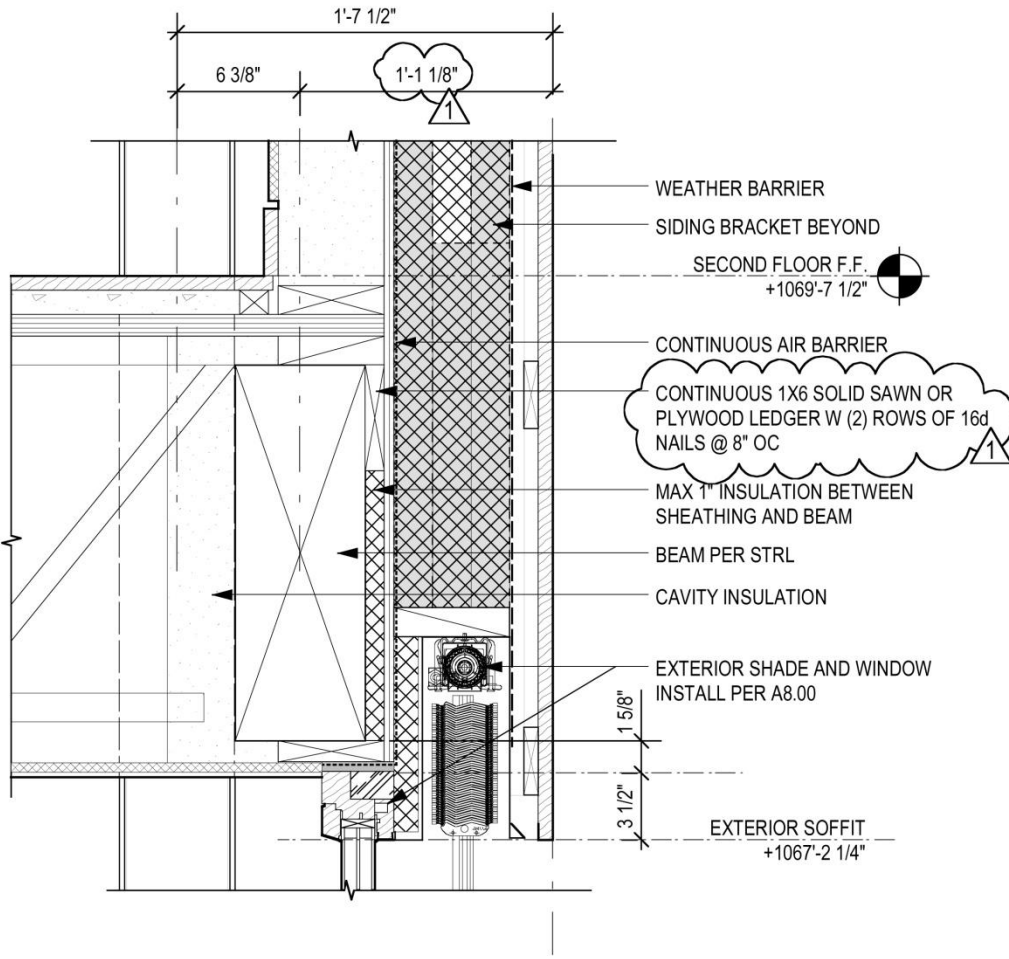




# Karuna House – Inside Out

Holst Architecture: Design  
 H&H: Construction  
 Green Hammer: CPHC, Dylan Lamar

E



6 SECTION DETAIL  
 A8.02 Scale: 1 1/2" = 1'-0"

# Karuna House – Inside Out



# Heron Haus – Concrete Spine





# Heron Haus – Concrete Spine



# Heron Haus – Concrete Spine



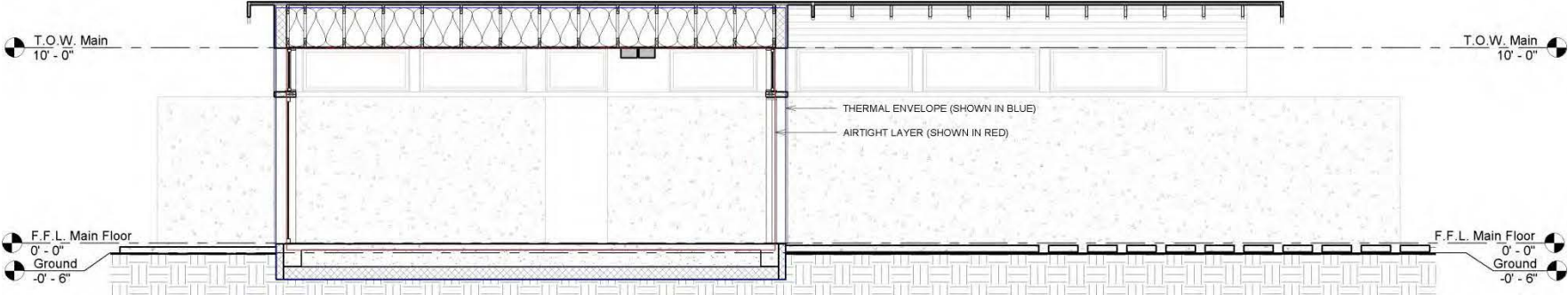


# Heron Haus – Concrete Spine





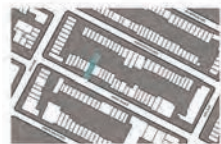
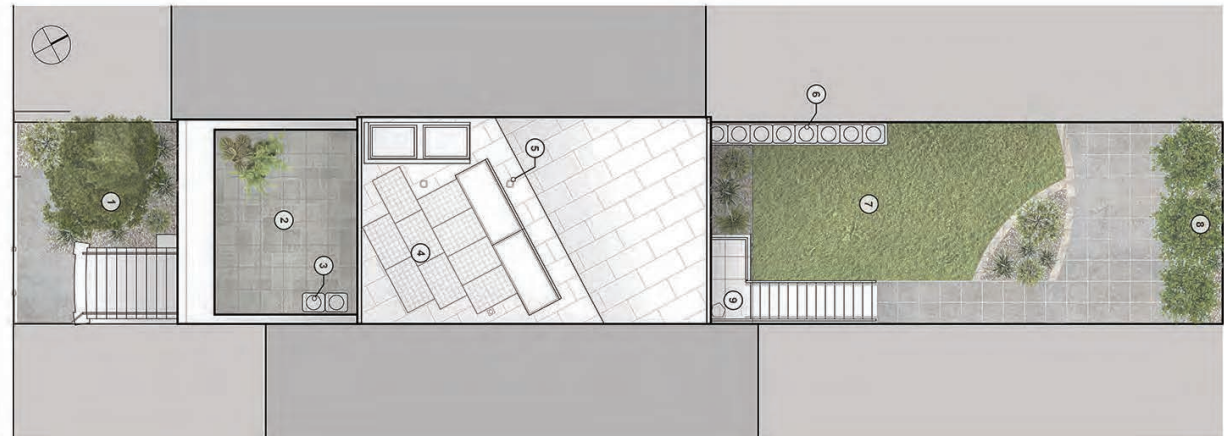
# Heron Haus – Concrete Spine





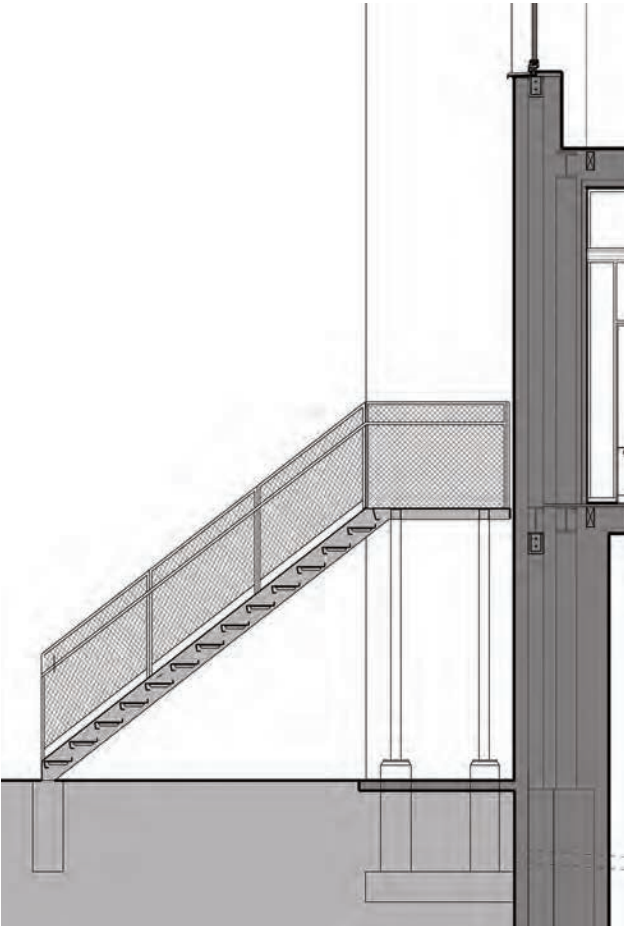
# BLURRING LINES BTWN INSIDE AND OUT CONTINUED...

## ISOLATED STEEL DECK AND STAIR





# ISOLATED STEEL DECK AND STAIR

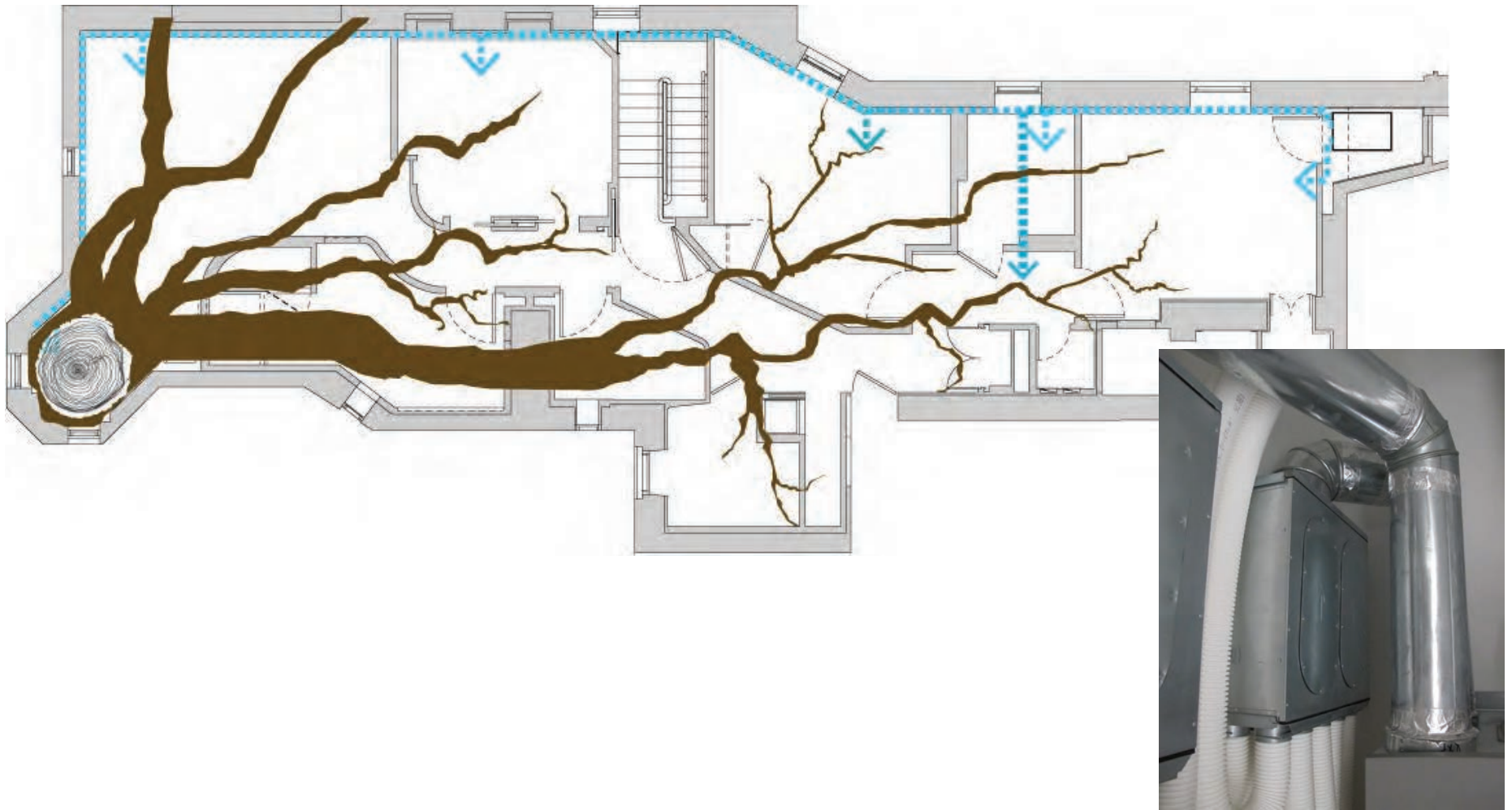


# PASSIVE HOUSE DESIGN PROBLEM #6

## RETROFITTING IN NYC AND USING EVERY INCH

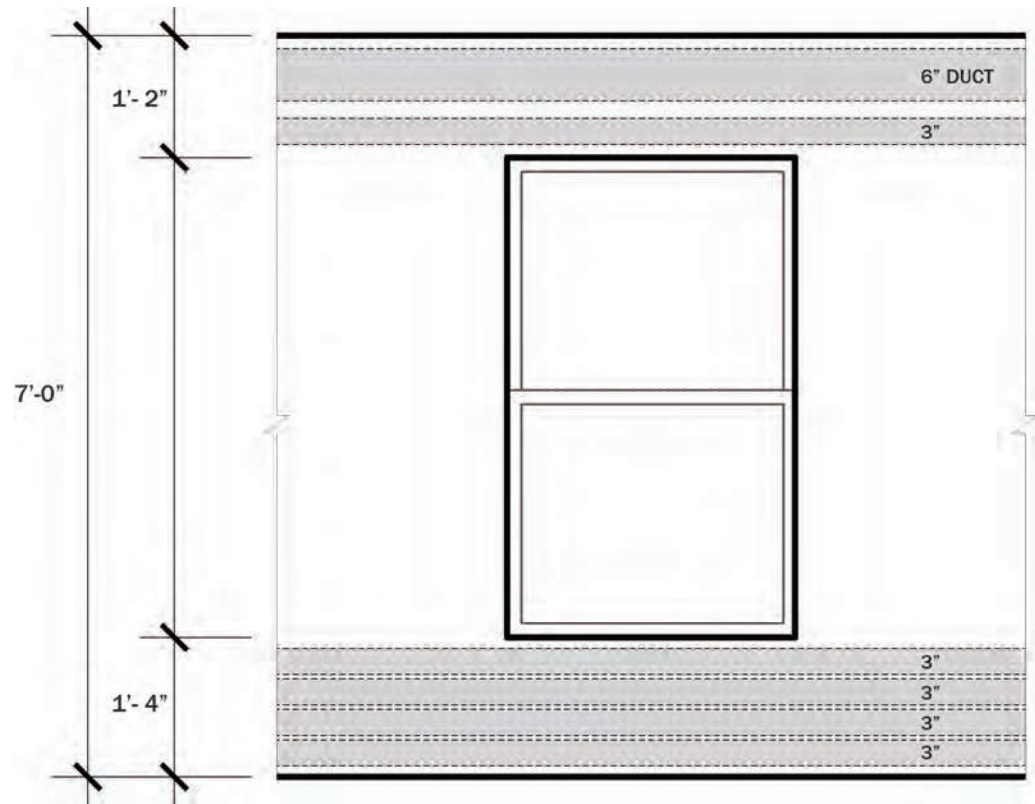


# RETROFITTING AND USING EVERY INCH-ERV RUNS





# RETROFITTING 1870S FORMER MAID'S QUARTERS



# RETROFITTING AND USING EVERY INCH





# RETROFITTING WITH 7FT CEILINGS

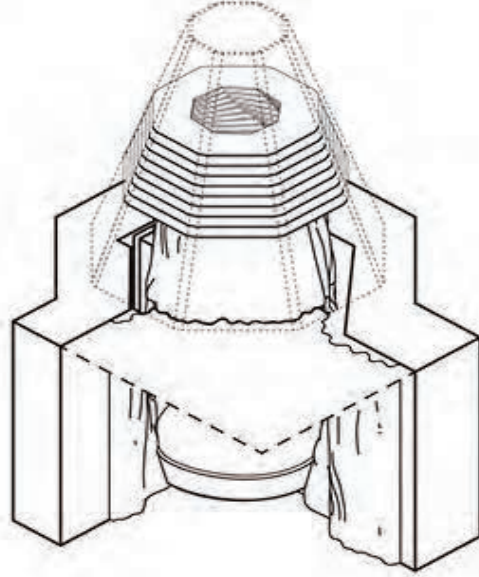
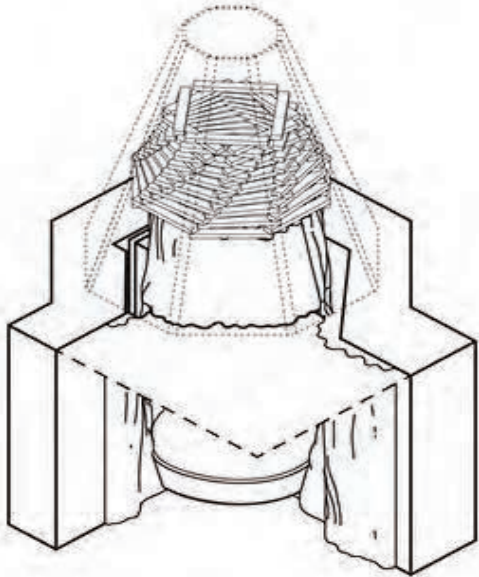
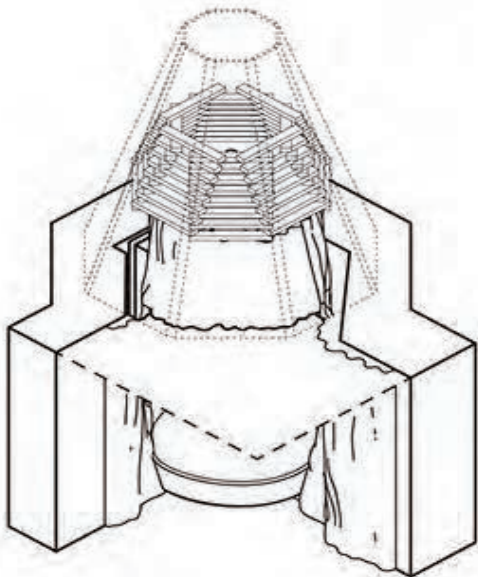
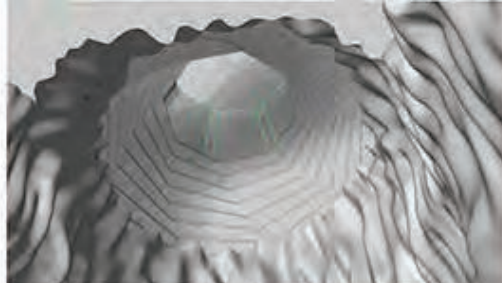
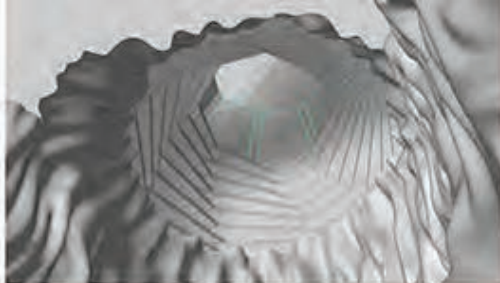
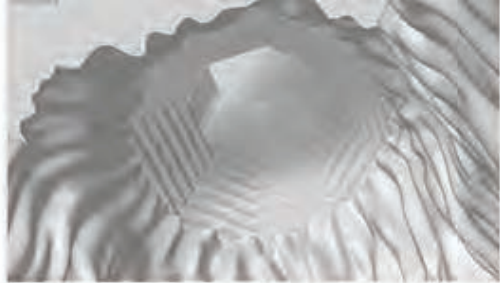




# RETROFITTING WITH 7FT CEILINGS



# RETROFITTING WITH 7FT CEILINGS



# RETROFITTING WITH 7FT CEILINGS



FNA/MADISON SQ PARK AREA