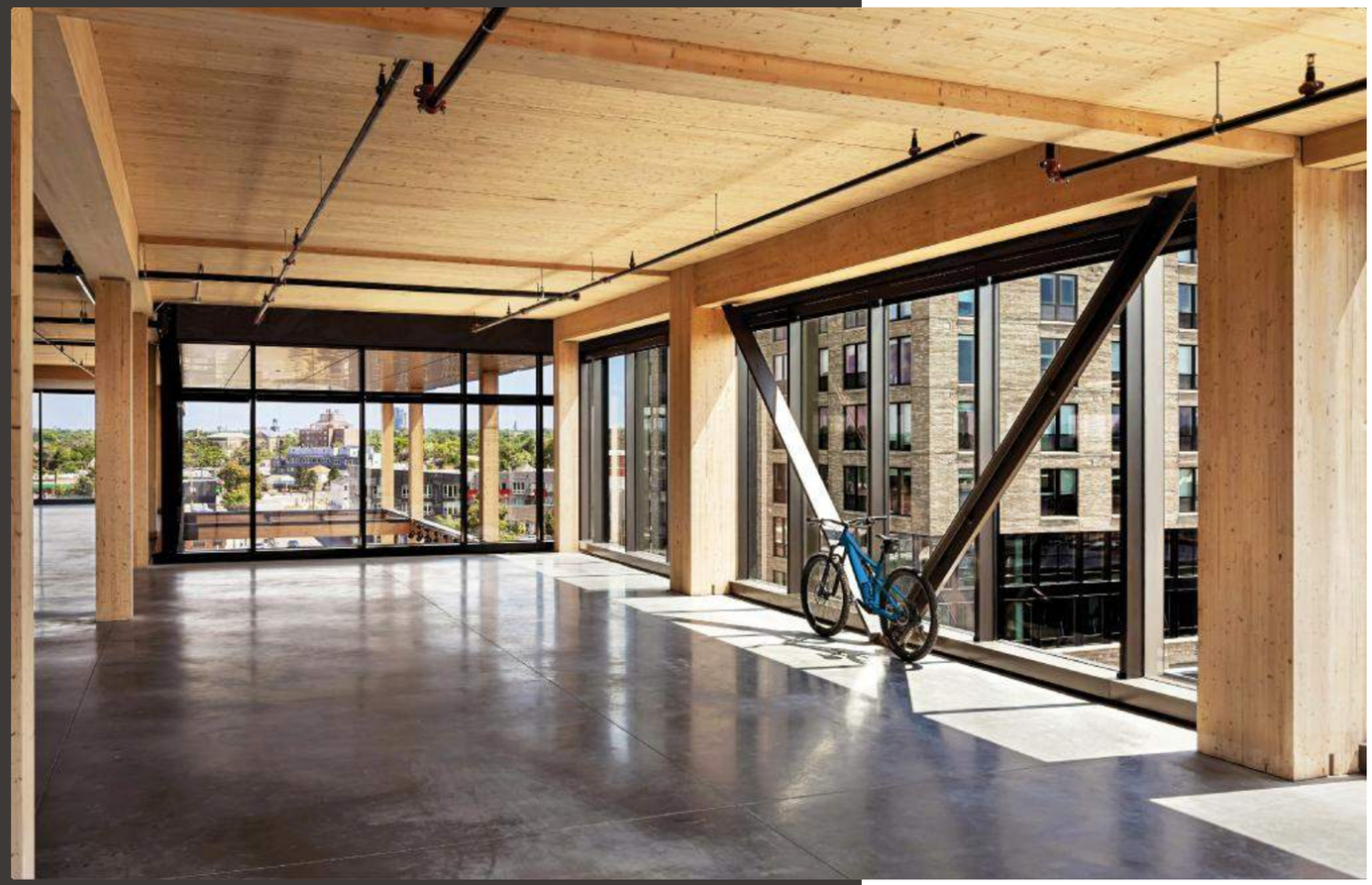


Using Wood Framing to Craft Award-Winning Projects: Case Studies and Lessons Learned

2025

WOOD IN ARCHITECTURE
WOODWORKS DESIGN AWARDS

"The Wood Products Council" is a Registered Provider with The American Institute of Architects Continuing Education Systems (AIA/CES), Provider #G516.

Credit(s) earned on completion of this course will be reported to AIA CES for AIA members. Certificates of Completion for both AIA members and non-AIA members are available upon request.

This course is registered with AIA CES for continuing professional education. As such, it does not include content that may be deemed or construed to be an approval or endorsement by the AIA of any material of construction or any method or manner of handling, using, distributing, or dealing in any material or product.

Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.

AIA Approved Continuing Education

Course Description

This presentation showcases a series of award-winning wood and timber-based projects, each exemplifying the sustainable benefits of utilizing wood in construction. Through an exploration of case studies, project team members will delve into the rationale behind selecting wood as the primary building material, examining its environmental advantages and aesthetic appeal. Design innovation typically comes through iteration, and these projects are no exception. They will share unique challenges faced and the lessons learned throughout each project's lifecycle. Participants will gain a comprehensive understanding of the sustainable attributes of wood in construction, the criteria for selecting wood as a material, and the practical insights into successful implementation gleaned from real-world examples.

Learning Objectives

1. Understand the environmental benefits of utilizing wood in construction, including its role in mitigating carbon emissions and promoting sustainability.

2. Evaluate the criteria for selecting wood as a primary building material in diverse architectural projects.

3. Analyze case studies of award-winning wood and timber projects to identify design strategies, construction techniques, and sustainability practices employed.

4. Discuss lessons learned from the challenges and successes encountered in the execution of wood-based construction projects, and apply these insights to future architectural endeavors.

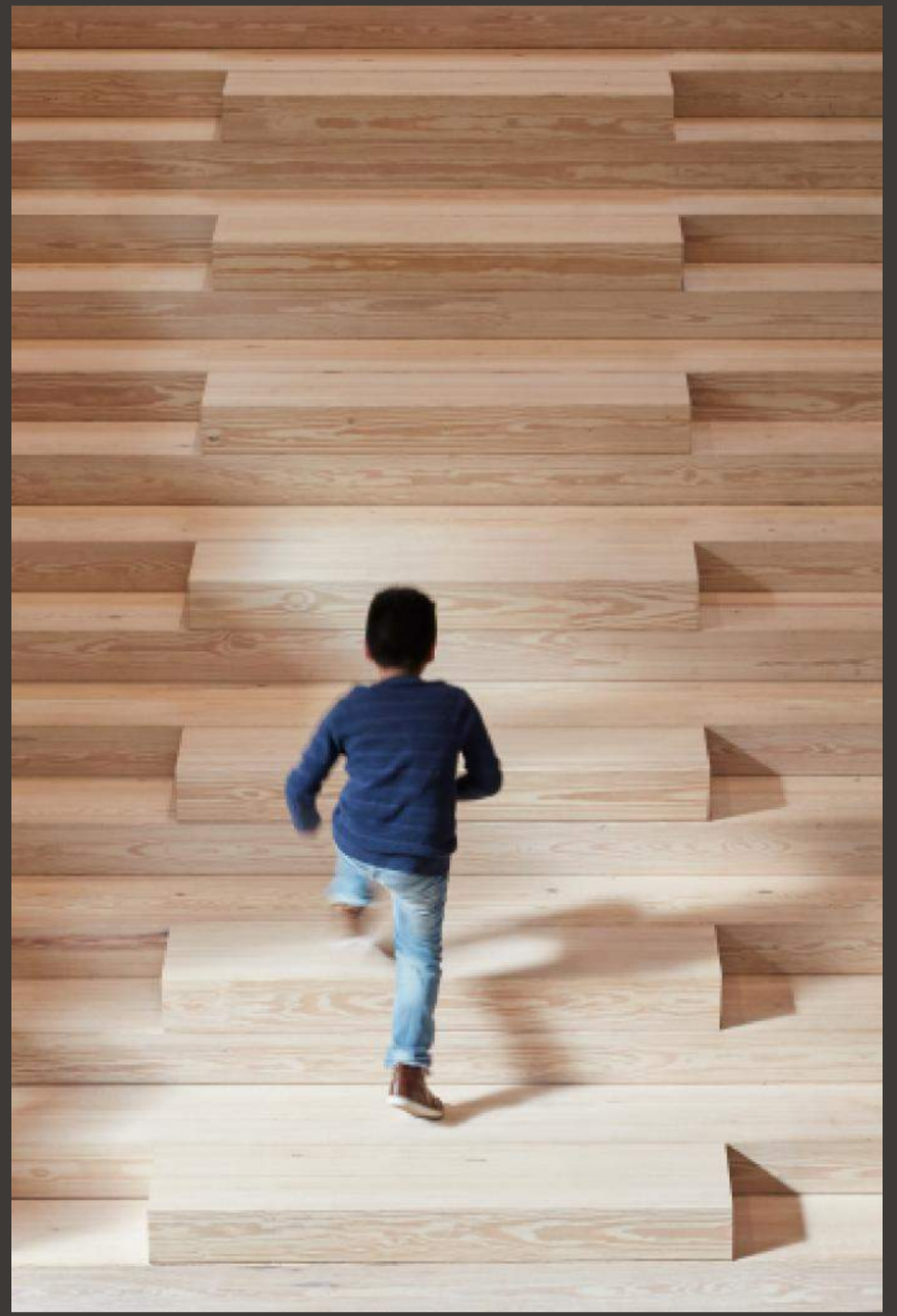
Award Criteria

Design Excellence

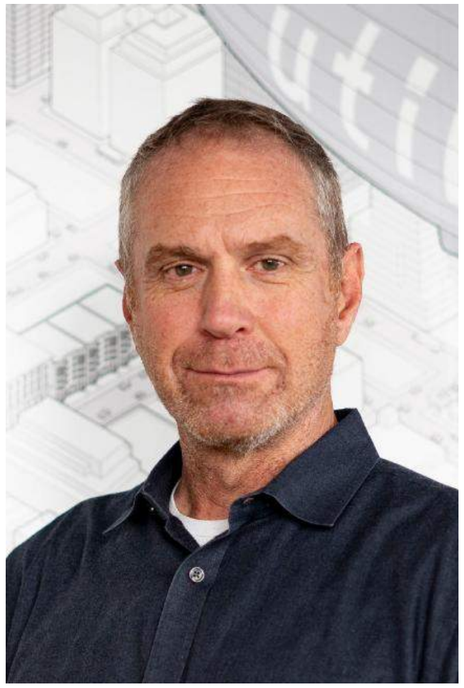
Innovative Use of Wood

Sustainability and Resilience

Market Impact



154 Broadway



ARCHITECT

Michael LeBlanc, AIA

Principal, Utile, Inc.

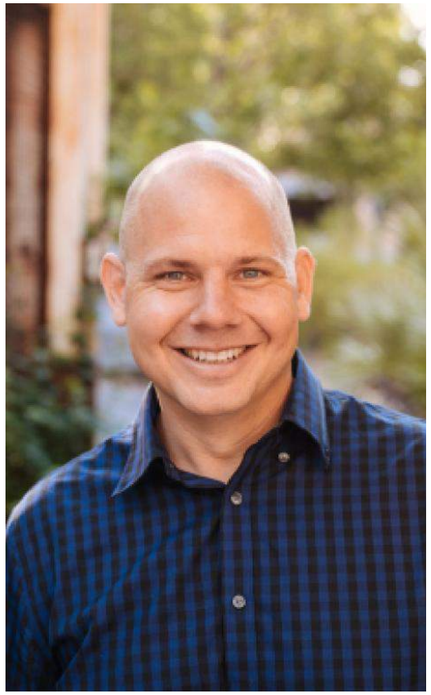
T3 RiNo

ARCHITECT

Anthony Markese, FAIA, RIBA, LEED AP

Principal, Pickard Chilton

Dicke Hall



ARCHITECT

Ryan Jones, AIA, LEED AP BD+C

Partner, Lake Flato Architects

154 Broadway

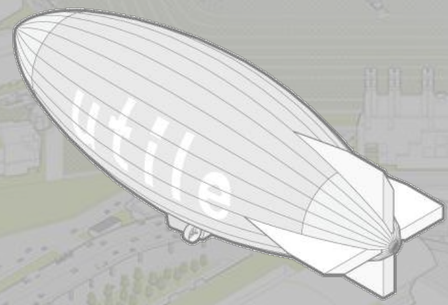
ARCHITECT
Utile, Inc.

STRUCTURAL ENGINEER
RSE Associates

GENERAL CONTRACTOR
Haycon, Inc.

OWNER
Construction Managers & Developers LLC

Using Wood Framing to Craft Award-winning Projects



Case Studies and Lessons Learned

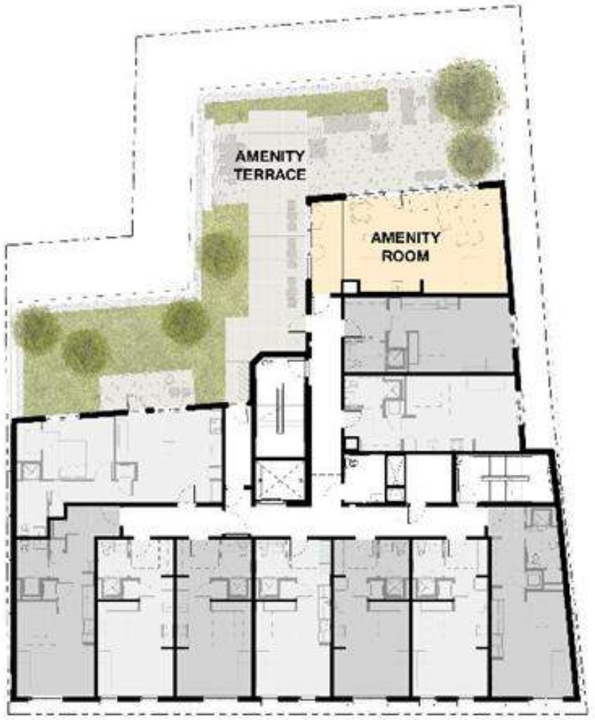
154 Broadway, Somerville, MA

Disclaimer: This presentation was developed by a third party and is not funded by WoodWorks or the Softwood Lumber Board

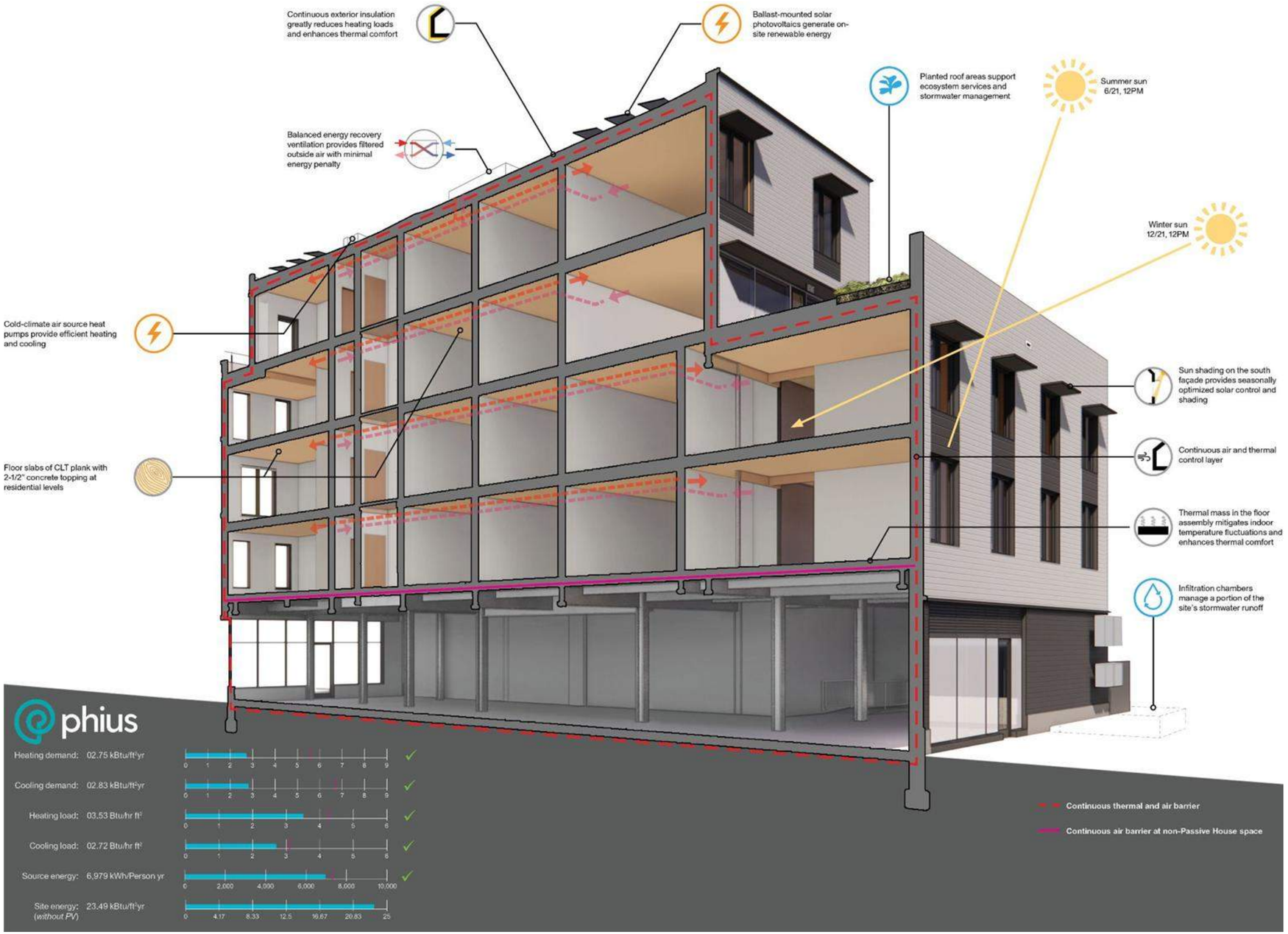

AHEAD
BUS LANE ENDS
Marlon's BARBERS
DHL

GROUND FLOOR

SECOND FLOOR



FOURTH FLOOR


Continuous exterior insulation greatly reduces heating loads and enhances thermal comfort
Ballast-mounted solar photovoltaics generate on-site renewable energy
Planted roof areas support ecosystem services and stormwater management
Summer sun 6/21, 12PM
Balanced energy recovery ventilation provides filtered outside air with minimal energy penalty
Winter sun 12/21, 12PM
Cold-climate air source heat pumps provide efficient heating and cooling
Sun shading on the south façade provides seasonally optimized solar control and shading
Floor slabs of CLT plank with 2-1/2" concrete topping at residential levels
Continuous air and thermal control layer
Thermal mass in the floor assembly mitigates indoor temperature fluctuations and enhances thermal comfort
Infiltration chambers manage a portion of the site's stormwater runoff
phius
Heating demand: 02.75 kBtu/ft²yr
Cooling demand: 02.83 kBtu/ft²yr
Heating load: 03.53 Btu/hr ft²
Cooling load: 02.72 Btu/hr ft²
Source energy: 6,979 kWh/Person yr
Site energy: 23.49 kBtu/ft²yr (without PV)
Continuous thermal and air barrier
Continuous air barrier at non-Passive House space


LOUISVILLE


Thermal bridging eliminated
High-performance, triple-glazed, double low-e coated uPVC windows
5-ply CLT plank and 2-1/2" concrete topping slab supplemented with fly ash and slag cement
Soffit to consolidate energy recovery ventilation ductwork, heat pump piping, and plumbing
Airtight, continuous insulated assembly with vapor permeable, foam-free insulation
Low-flow plumbing fixtures and efficient distribution piping

Thank You!

T3 RiNo

ARCHITECT
Pickard Chilton (Design Architect)
DLR Group (Architect of Record)

STRUCTURAL ENGINEER
Magnusson Klemencic Associates

GENERAL CONTRACTOR
Whiting-Turner

OWNER
Hines / Ivanhoé Cambridge / McCaffery Interests

Pickard Chilton | Hines | Ivanhoé Cambridge | DLR Group | Magnusson Klemencic Associates | Whiting-Turner | Nordic Structures

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384K

TOTAL GSF

1.2K

OCCUPANTS

188K

CUBIC FEET MASS TIMBER

38%

REDUCTION OF
EMBODIED CARBON

5.8K

TOTAL POTENTIAL
CARBON BENEFIT

1.2K

EQUIVALENT CARS
OFF THE ROAD

Metrics


RiNo Art District
LoHi
Cole
South Platte River
Riverfront
Curtis Park
Whittier
Ballpark
LoDo
Five Points
CBD
Metropolitan Denver

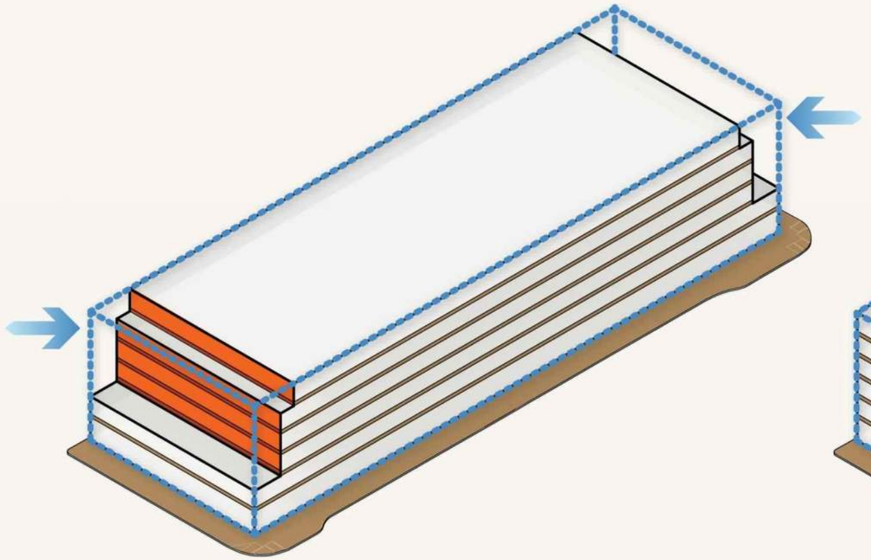
Kiyomizu Dera

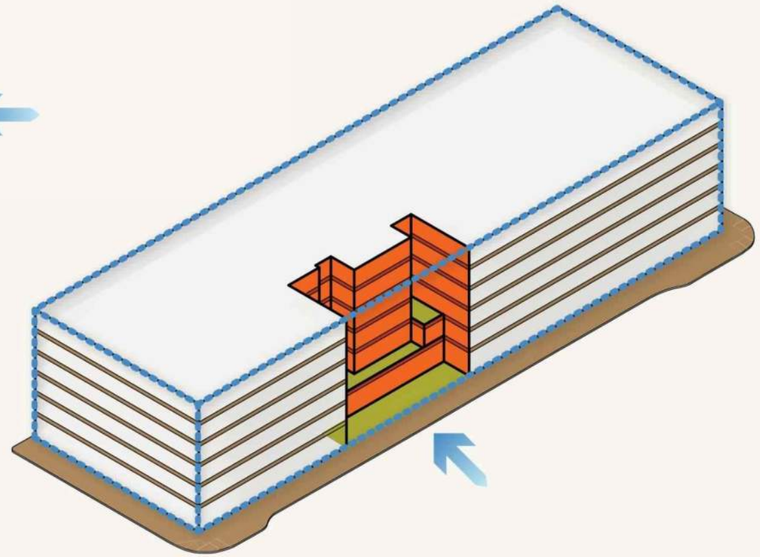
Touring Canoe

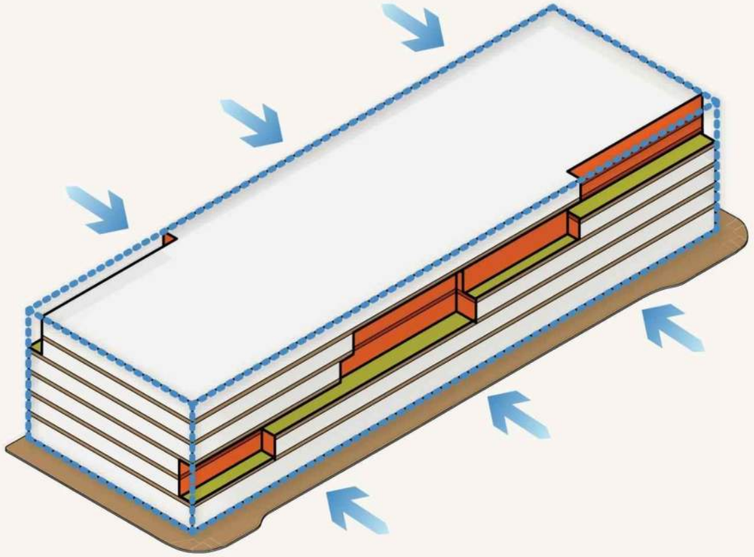
Kinol Trestle

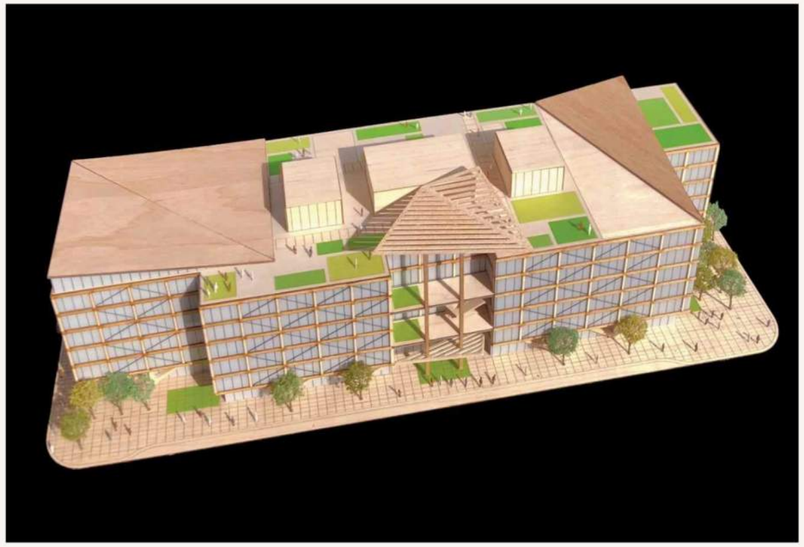
Topped Out Structure

Blake Street Frontage









Mass Reduction Studies

Double-Height Terrace

Intersection of Structure & Enclosure

Typical Floor

Eastern Corner

6th Floor Terrace

Amenity Level

Lobby

Dicke Hall

ARCHITECT
Lake Flato Architects

STRUCTURAL ENGINEER
Datum Engineers

GENERAL CONTRACTOR
Turner Construction

OWNER
Trinity University

DICKE HALL
TRINITY UNIVERSITY

LAKE | FLATO

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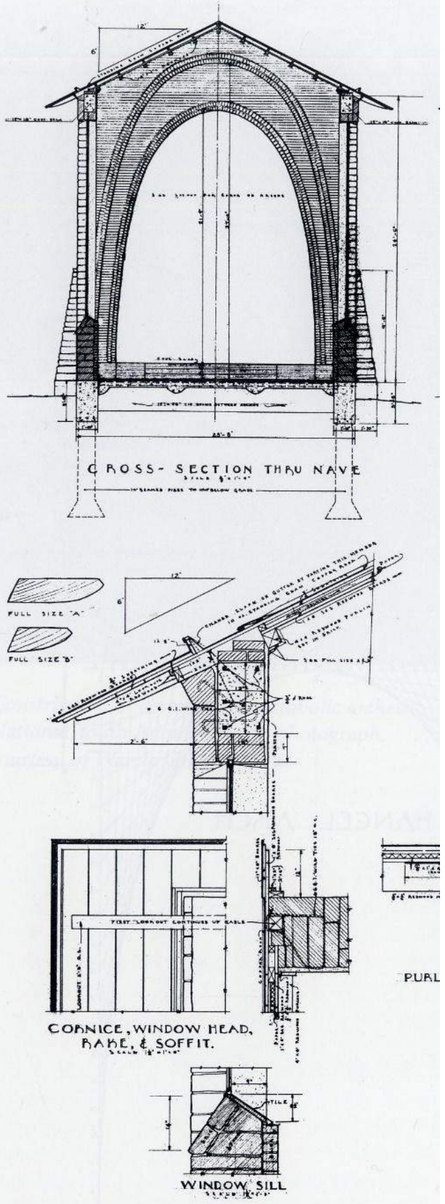
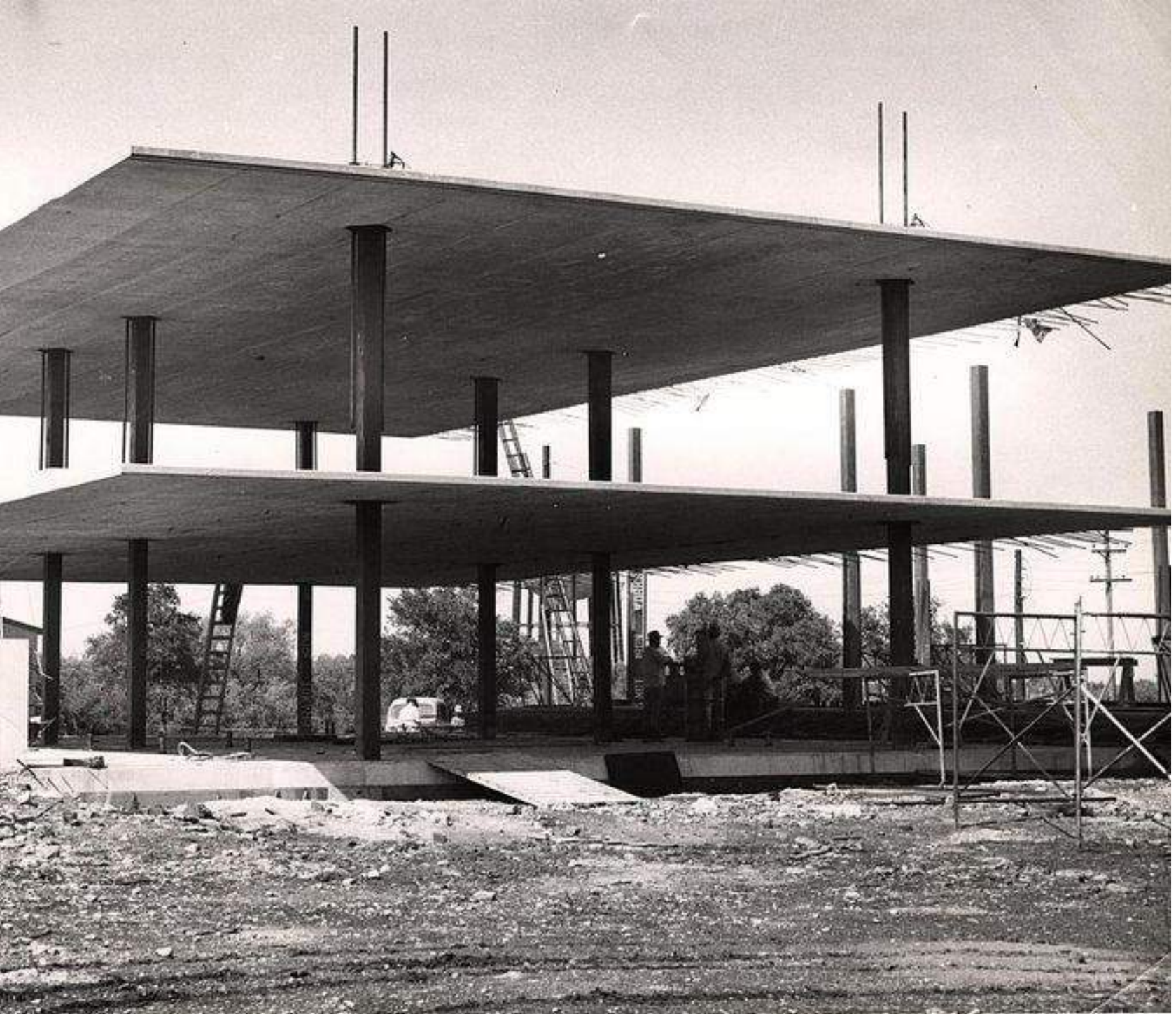
Dr. James Laurie, *President of Trinity University*
O'Neil Ford, *Architect*

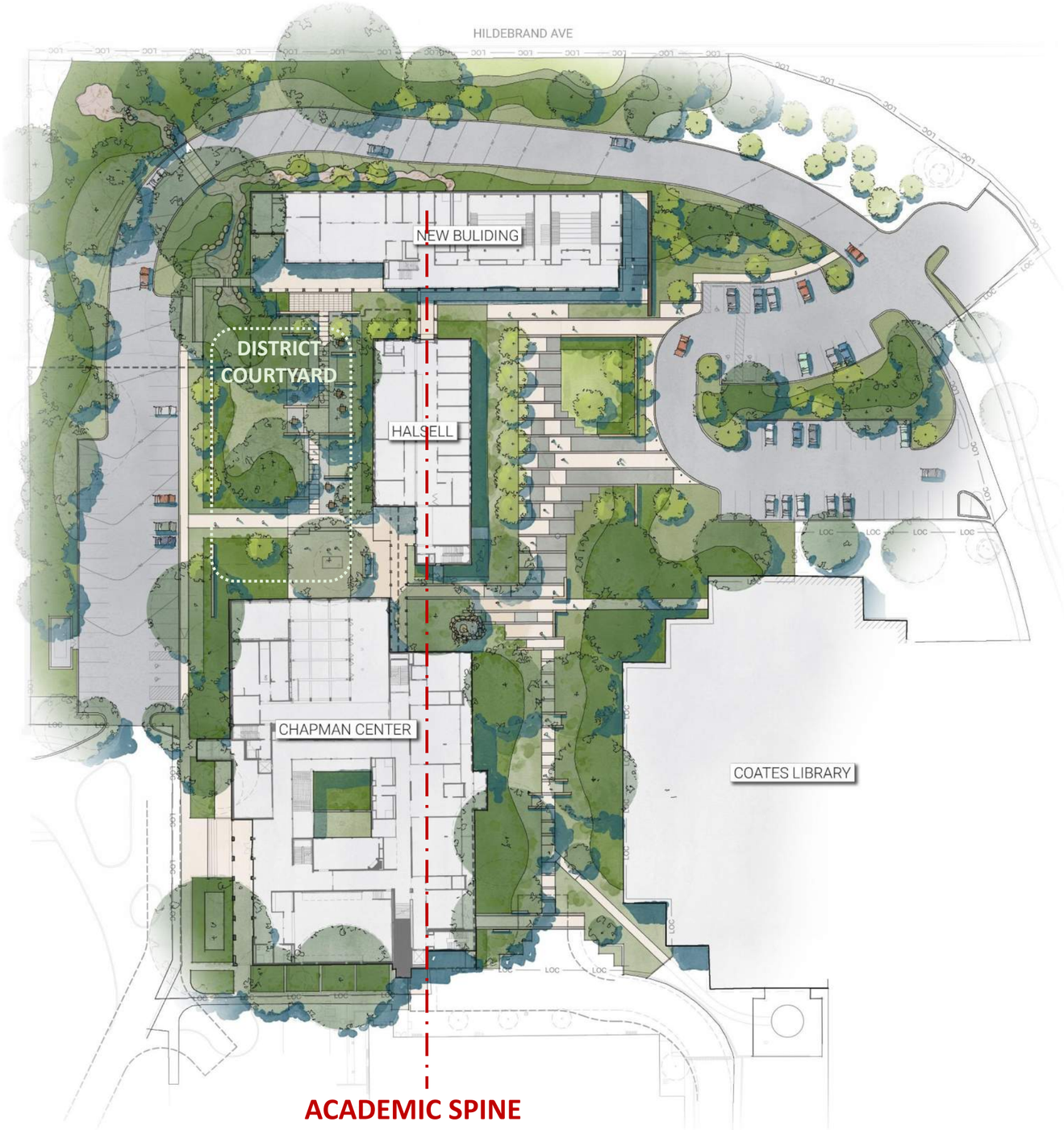


Chapel section, front elevation, and details. Working drawings for the Little-Chapel-in-the-Woods by Jerry Rogers. Files of Ford, Powell and Carson.



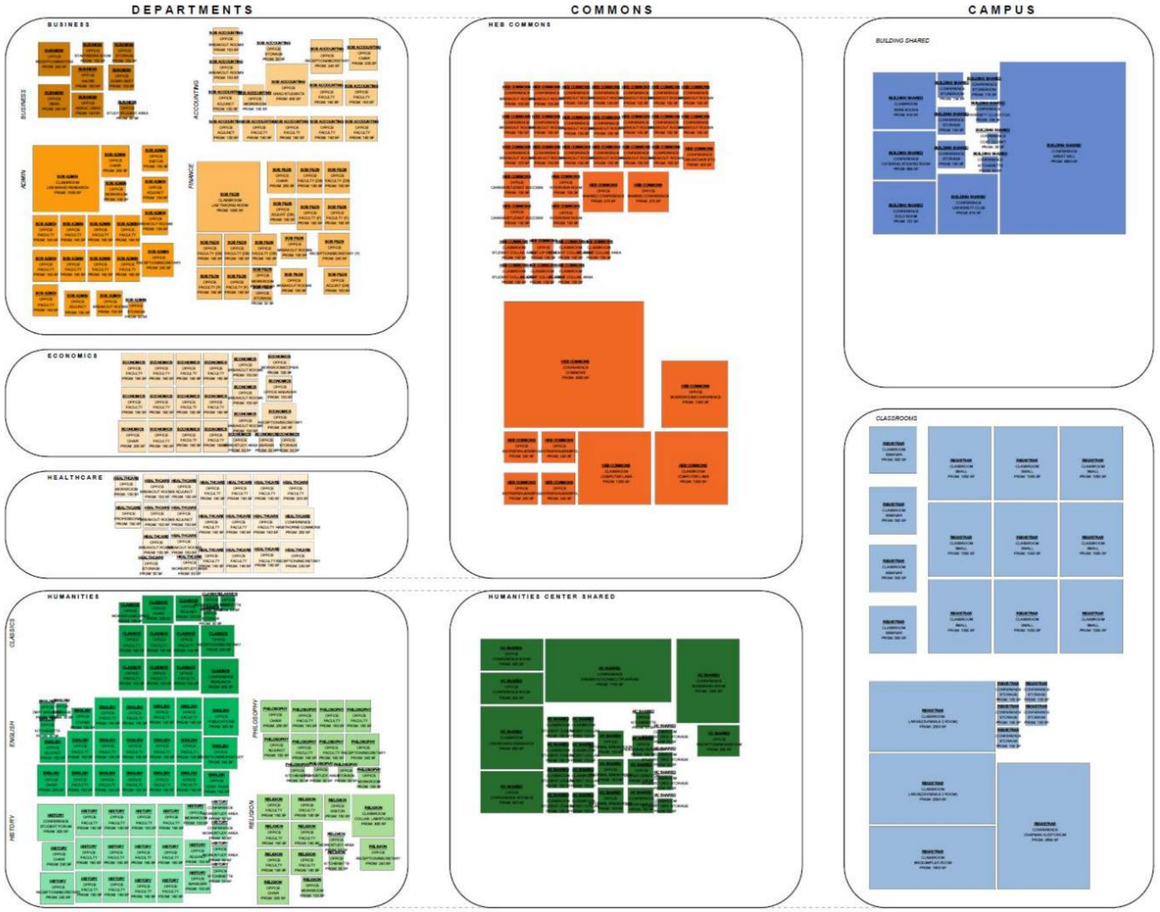
“Perhaps we had better get underneath it as soon as it is high enough, because if it does fail, you and I will be vastly better off there!”

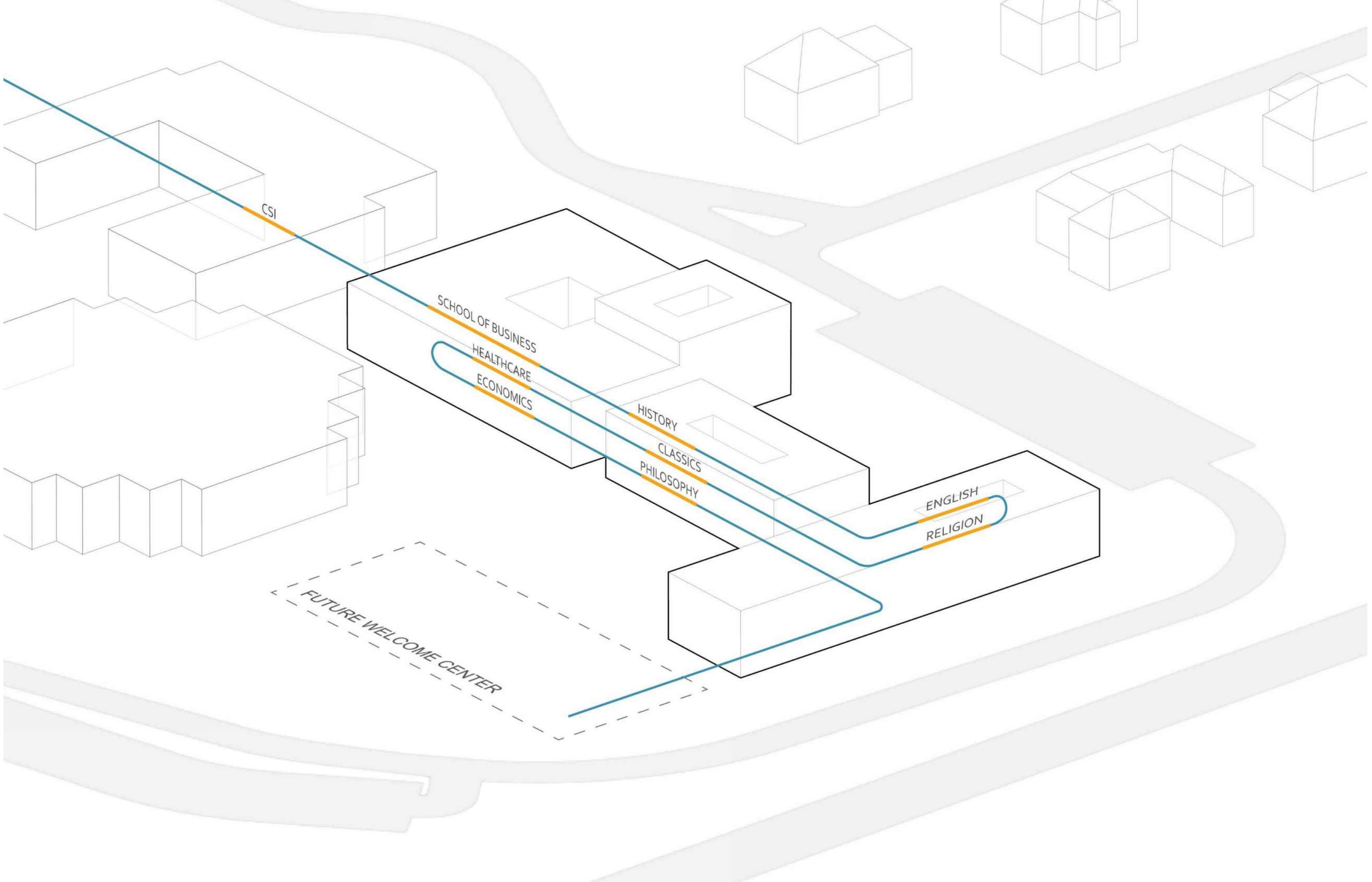
President Laurie to O’Neil Ford



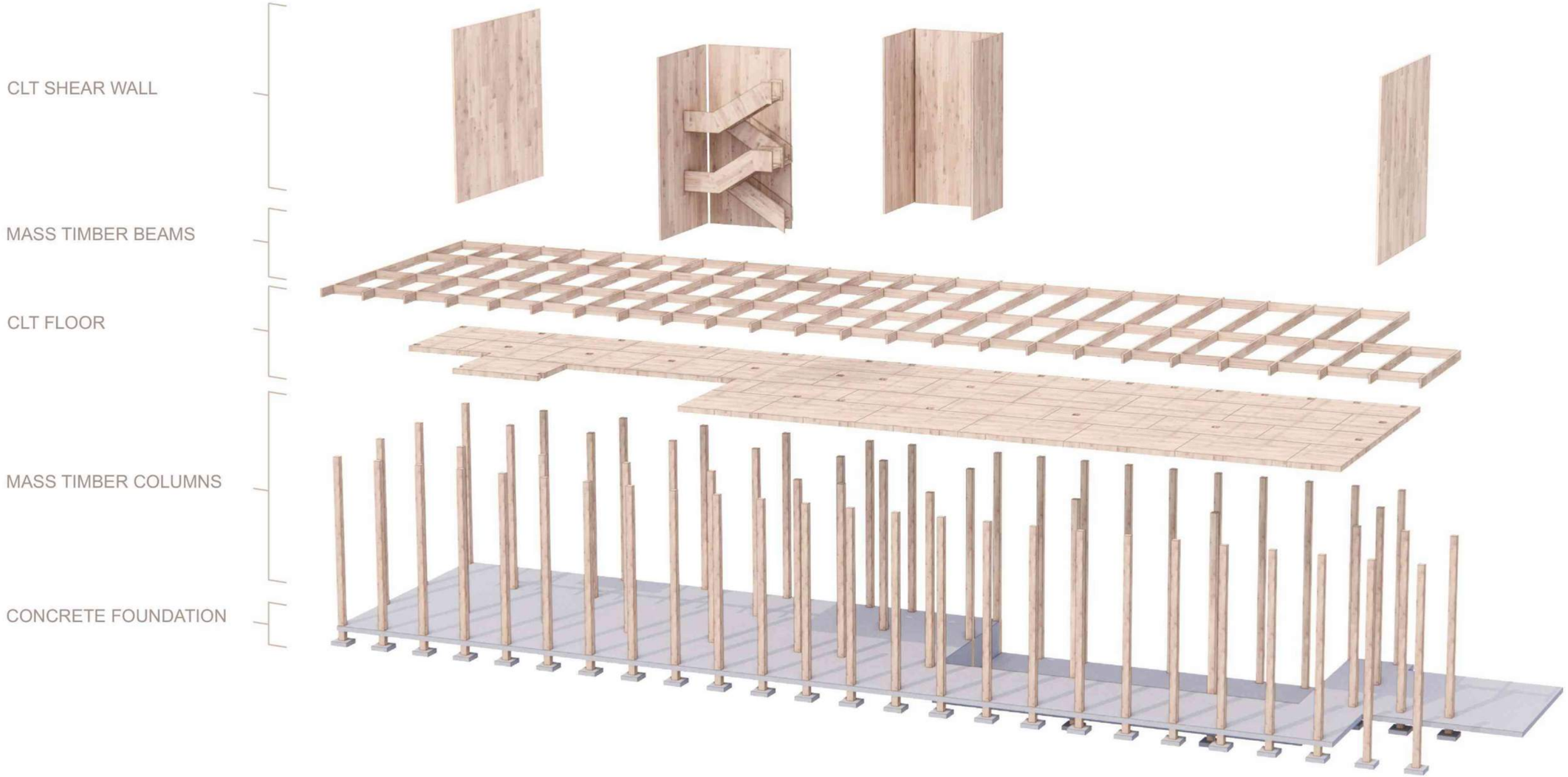
A BUSINESS & HUMANITIES DISTRICT

3 Buildings
10 Departments
130,000 Total Square Feet
30,000 Square Feet of Classroom Education
20,000 Square feet of Student Commons




CSI
SCHOOL OF BUSINESS
HEALTHCARE
ECONOMICS
HISTORY
CLASSICS
PHILOSOPHY
ENGLISH
RELIGION
FUTURE WELCOME CENTER

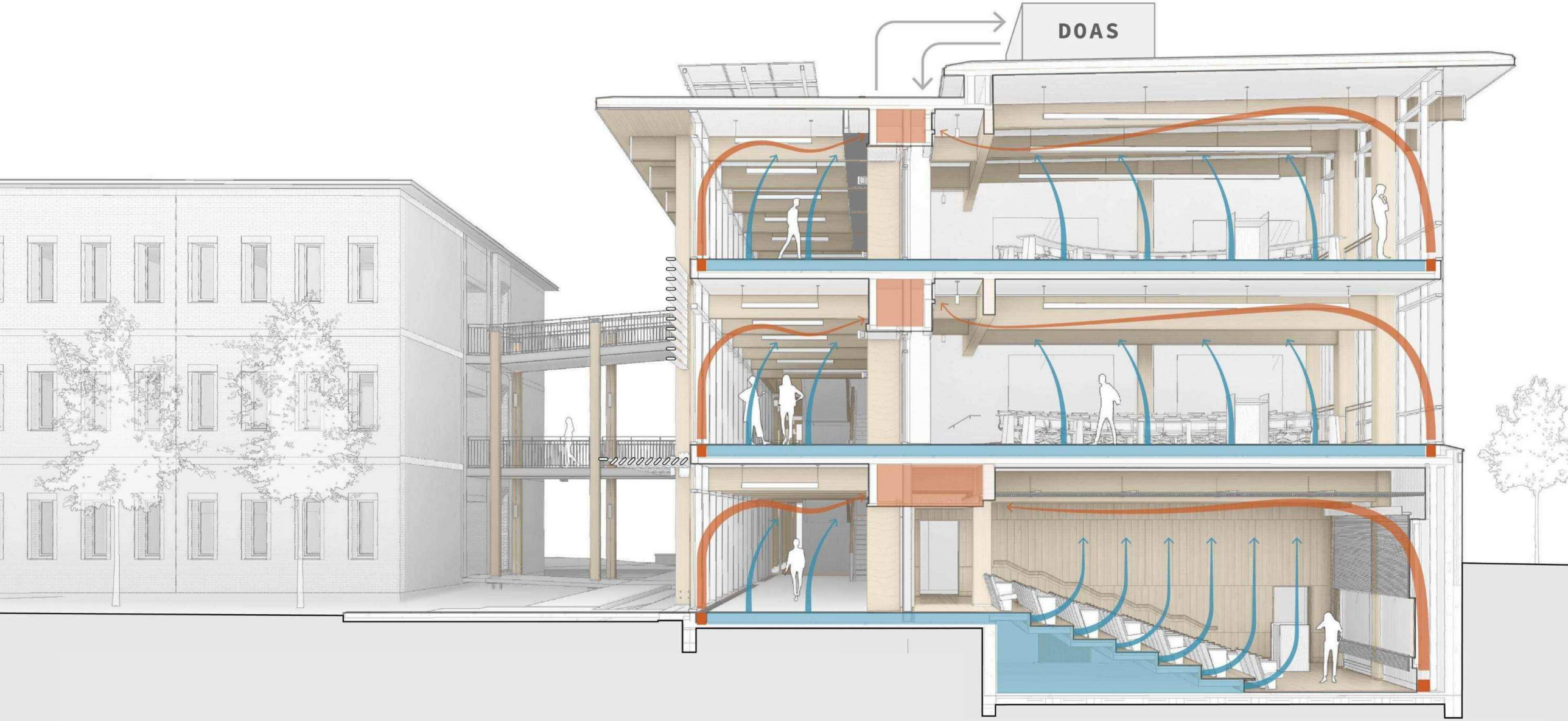
First building in Texas to use Mass Timber for all Vertical Structure

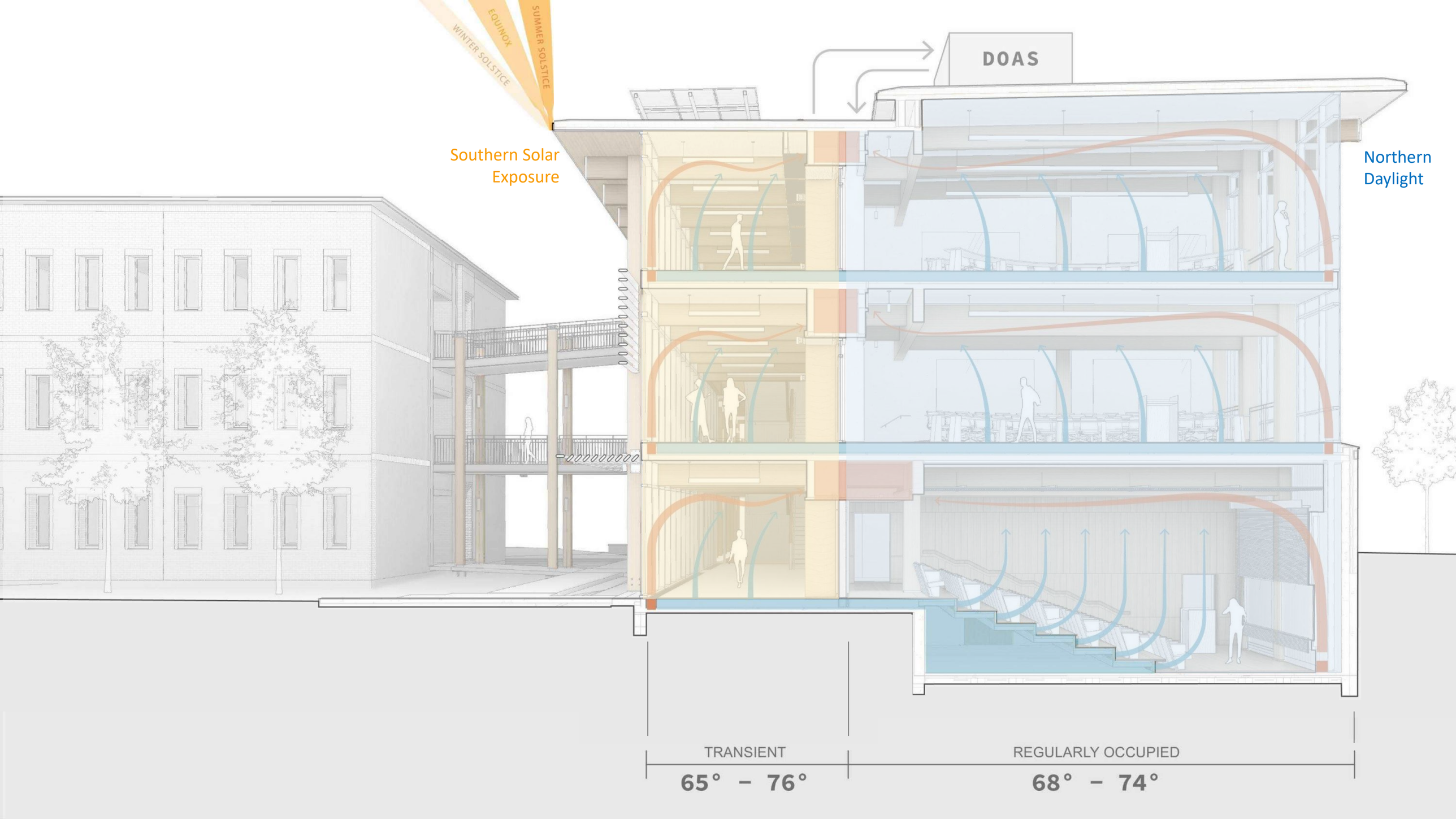



EXIT

98%

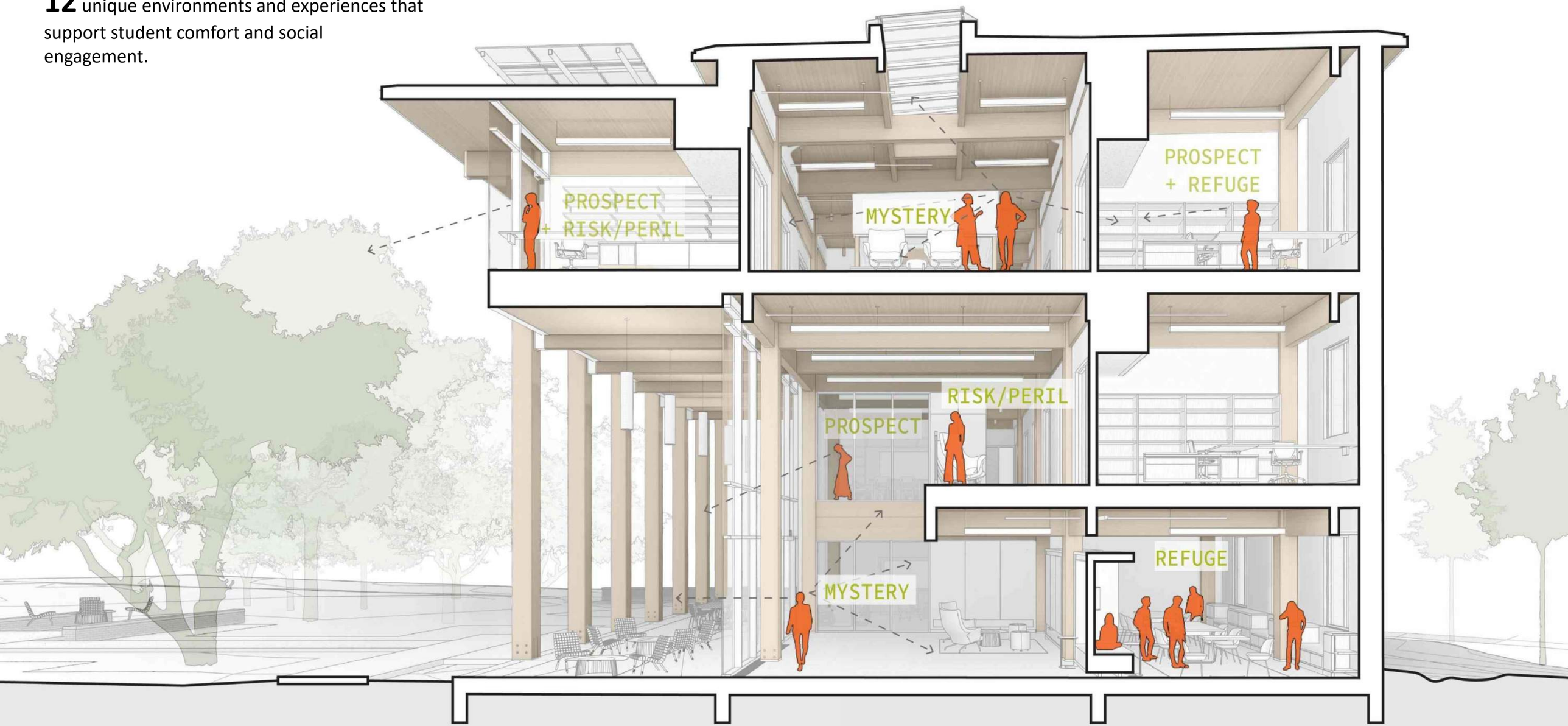
of regularly occupied space with access to daylight and view.


DOAS

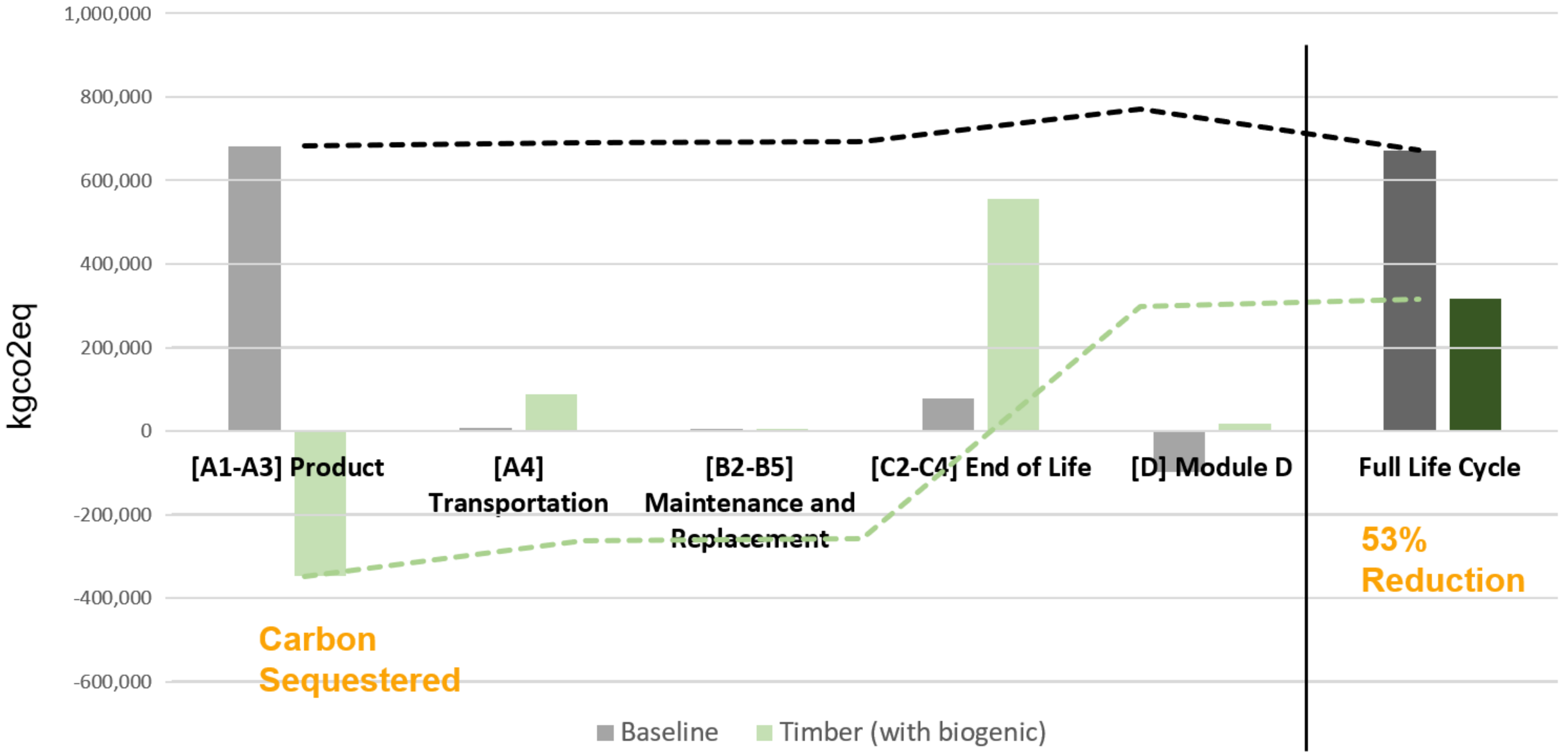

WINTER SOLSTICE
EQUINOX
SUMMER SOLSTICE
DOAS
Southern Solar Exposure
Northern Daylight
TRANSIENT
65° – 76°
REGULARLY OCCUPIED
68° – 74°

DIVERSE NATURE OF SPACE: NEURODIVERSITY

12 unique environments and experiences that support student comfort and social engagement.



DICKE HALL - **LIFE CYCLE STAGES OF CARBON**



PASSIVE & ACTIVE STRATEGIES

SYSTEM UPGRADES
Replaced existing systems with high performance systems and lighting upgrades (LED's and controls)

IMPROVED ENVELOPE PERFORMANCE
Envelope upgrades with additional insulation at roofs -R25+

DAYLIGHT HARVESTING
Added skylight and modified interiors improved daylight performance by 4.5%

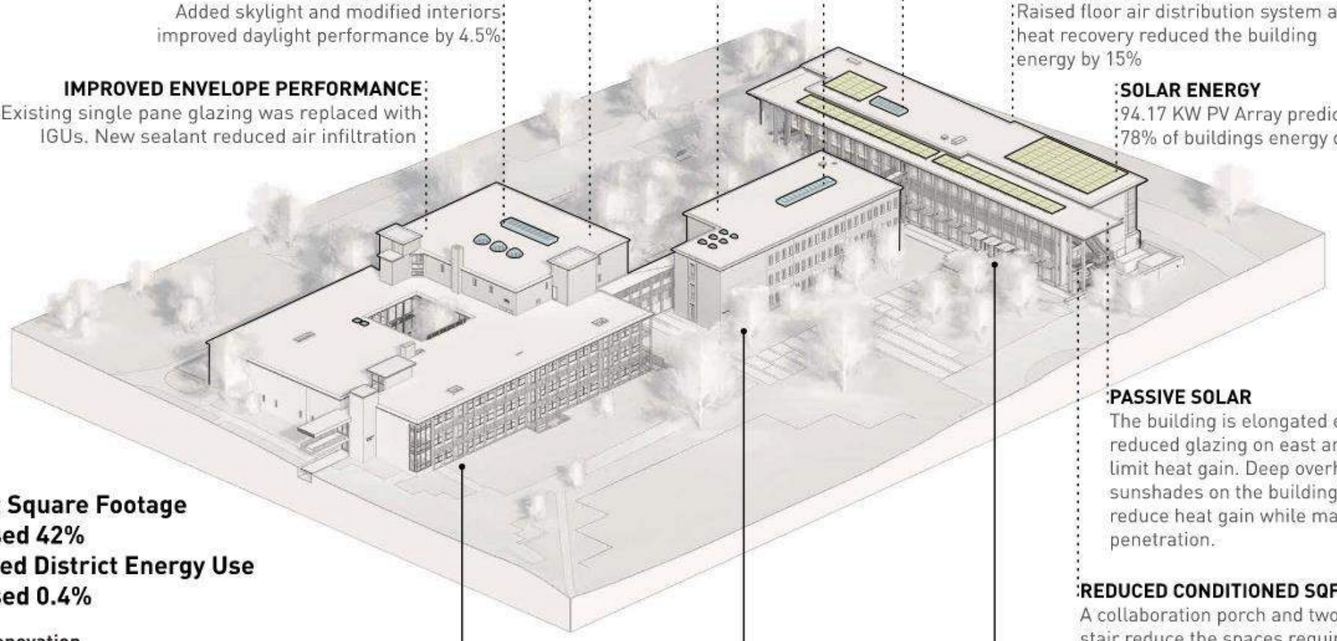
IMPROVED ENVELOPE PERFORMANCE
Existing single pane glazing was replaced with IGUs. New sealant reduced air infiltration

DAYLIGHT HARVESTING
Added skylight and modified interiors improved daylight performance by 32.3%

DAYLIGHT HARVESTING
73.4% of regularly occupied spaces have access to daylight and views

HIGH PERFORMANCE
Raised floor air distribution system and heat recovery reduced the building energy by 15%

SOLAR ENERGY
94.17 KW PV Array predicted to supply 78% of buildings energy demand



PASSIVE SOLAR
The building is elongated east to west, with reduced glazing on east and west sides to limit heat gain. Deep overhangs and sunshades on the building's south side reduce heat gain while maximizing daylight penetration.

REDUCED CONDITIONED SQFT
A collaboration porch and two exterior egress stair reduce the spaces requiring conditioning and create opportunities to connect occupants to the site

District Square Footage Increased 42%
Predicted District Energy Use Increased 0.4%

Before Renovation
97,197 sf
4,894,100 kbtu/year

After Renovation
131,635 sf
4,911,800 kbtu/year (predicted)

CHAPMAN
RENOVATED
Pre-renovation EUI: 32.9
Predicted EUI: 38.8

HALSELL
RENOVATED
Pre-renovation EUI: 113.5
Predicted EUI: 38.8

DICKE
NEW CONSTRUCTION
Predicted EUI before solar: 43.3
Predicted EUI after solar: 10.5

10.5
EUI resulting from Passive and active system strategies

90%
Energy reduction below a typical building

78%
Energy supplied by 3,000 SF PV Array


Dicke Hall

ARCHITECT OF RECORD:	LAKE|FLATO ARCHITECTS
GENERAL CONTRACTOR:	TURNER CONSTRUCTION
MEP DESIGN ENGINEER:	INTEGRAL ENGINEERING
STRUCTURAL ENGINEERING:	DATUM ENGINEERS
CIVIL ENGINEERING:	IES ENGINEERING
LANDSCAPE ARCHITECTURE:	RIALTO STUDIO
HISTORIC ARCHITECTURE CONSULTING:	FORD POWELL & CARSON
AV/SECURITY/ACOUSTICS:	DATACOM
FIRE & LIFE SAFETY:	FPCG
COST ESTIMATING:	VERMEULENS
ENVELOPE CONSULTING:	ACTON PARTNERS
LIGHTING DESIGN:	STUDIO LUMINA
FURNISHINGS:	SKG
MASS TIMBER SUPPLIER:	STRUCTURLAM / MERCER
MASS TIMBER INSTALLER:	TIMBERLYNE

QUESTIONS?

This concludes The American Institute of Architects Continuing Education Systems Course