Transforming Institutional Buildings for the Next 100 Years

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Continuing education

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Certificates of Completion for non-AIA members are available on request. Requests should be made to ce@architects.org.

1. Participants will be able to define and analyze metrics for energy use as it relates to historic building envelopes.

2. Participants will be able to assess basic cost analysis as it relates to sustainability upgrades.

3. Participants will be able to determine and implement appropriate strategies for making energy and code upgrades to buildings with significant architectural character.

4. Participants will be able to compare mechanical strategies as they impact carbon output and climate change.

8:00 – Introductions & Process

8:15 – Chapel House at Colgate University

8:50 – The Log at Williams College

9:25 – Questions & Lessons Learned

9:30 – Wrap up

Who's in the room?

- Owners
  - Engineers
    - Contractors
      - Architects
        - Others?

Agenda for the presentation

Coldham & Hartman Architects was founded in 1989 by Bruce Coldham, FAIA. Thomas RC Hartman, AIA joined the firm in 1999. We are a practice of six and located in Amherst, MA.

We work for clients throughout New England and New York with a focus on high performance buildings and communities. Our work ranges from the renovation of a historic college buildings to net zero energy homes.

We designed the Smith College Bechtel Classroom, which is the 5th Certified Living Building Challenge project in the world.

A few patterns for working with Institutional Clients:

There are MULTIPLE CLIENT Stakeholders

- Design Committee
- Facilities & Operations
- Project Managers- Design & Construction
- Trustees & Donors
- Wider Community

DESIGNING A PROCESS as much as a PROJECT

- Prepare a complete workplan and schedule the dates
- Establish a regular meeting day & time
- Limit Design Committee size to less than 8 if possible
- Publish agendas ahead of time
- Publish meeting minutes and expect follow up (review at the next meeting)
- Make it fun.

A few patterns for working with Institutional Clients:

METRICS of Understanding Energy

- Explain the relevant energy metrics – don't assume everyone knows
- Energy Use Intensity- existing and proposed
- Air tightness and R values- cfm75 per square foot of shell
- The Design Committee needs to know to make decisions

CAMPUS STANDARDS

- Are they current?
- Are they simply wrong?
- Who's responsible for checking and fixing?

PROJECT MANAGERS

- Half the job is designing a process that is easy for them and makes them look good. (repeat clients)
- The other half is Architecture.

Chapel House, Colgate University Hamilton, NY

Architect:	J. Walter Severinghaus Skidmore Owings & Merrill
Contractor:	Barr & Barr
Year built:	1959
Building Area:	9,500 sf
Renovation cost:	Withheld

Our Team:	C&H Architects	Architect of Record
	LN Consulting	MEPS Engineers
	Klepper Hahn Hyatt	Structural, Landscape, Roofing
	Lorin Starr Interiors	Interior Design
	Beebe Construction	Construction Manager
	MH Professional	Commissioning Agent (By Owner)
	Camroden Associates	Envelope Commissioning (by Owner)

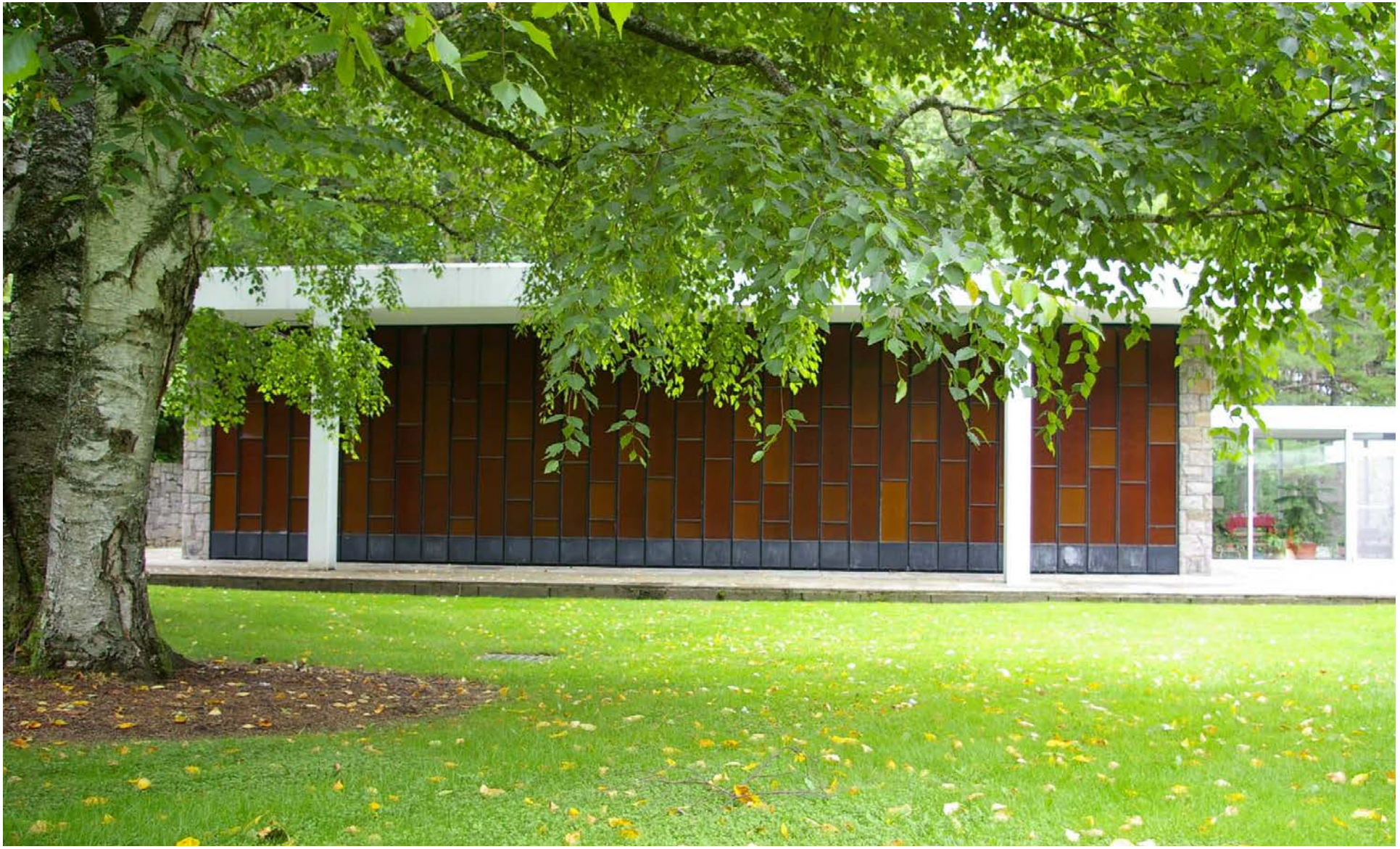
Project Goals from the RFP:

- Protect and preserve the architectural integrity and historical significance of Chapel House
- Make extensive deferred maintenance renovations and accessible upgrades including an elevator.
- Full window and roof replacement.
- Complete Electrical and LED lighting upgrade
- Replace HVAC with efficient systems (ground source heat pump)
- Install Sprinklers
- Entry provisions for coats, hats, and boots
- Re-upholster unique original furnishings and new where required.

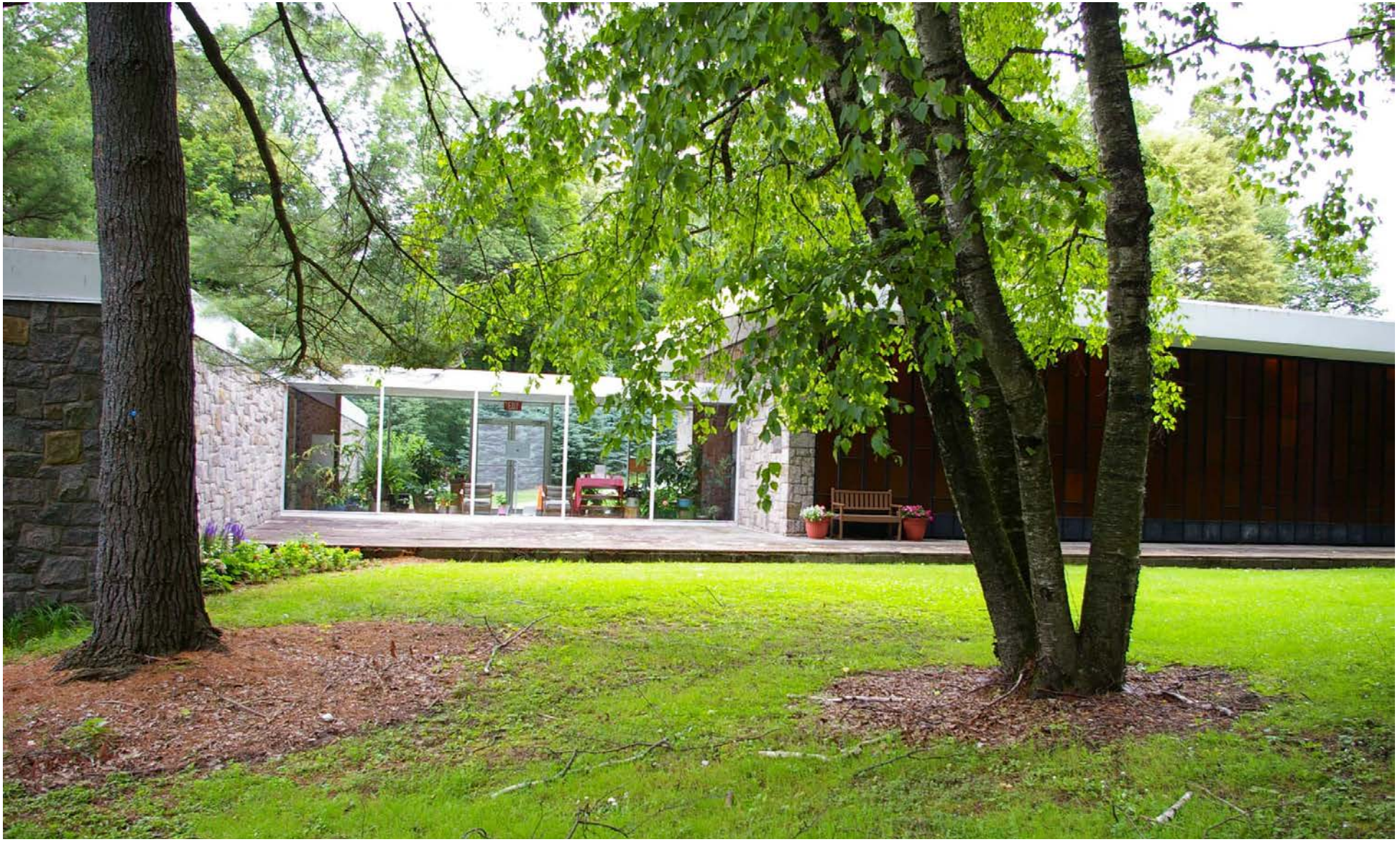
Chapel House- Existing Conditions- First Impressions

Chapel House- Existing Conditions- Exterior- Entry

Chapel House- Existing Conditions- Exterior- East

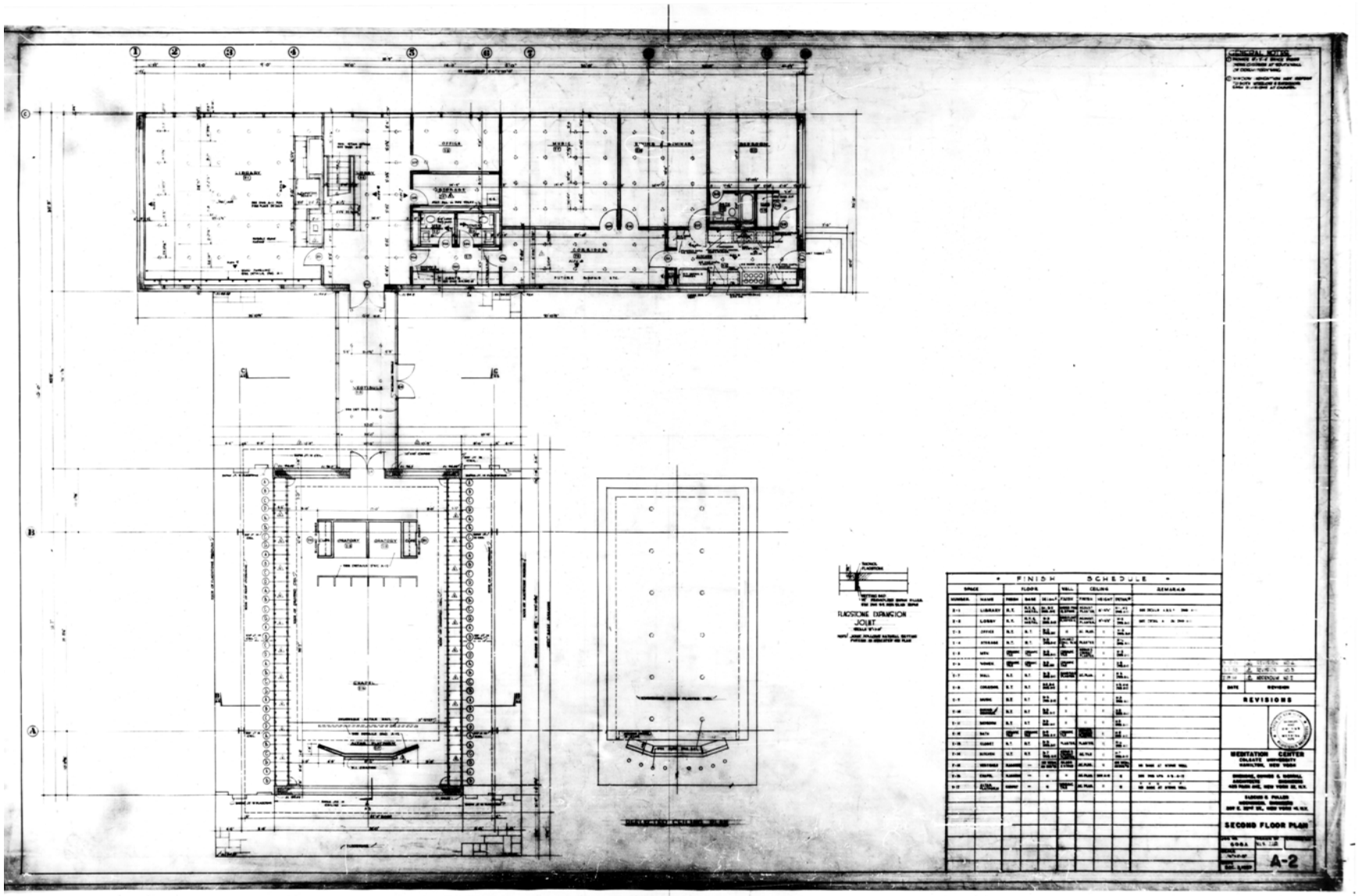


Chapel House- Existing Conditions- Exterior- Chapel Glass

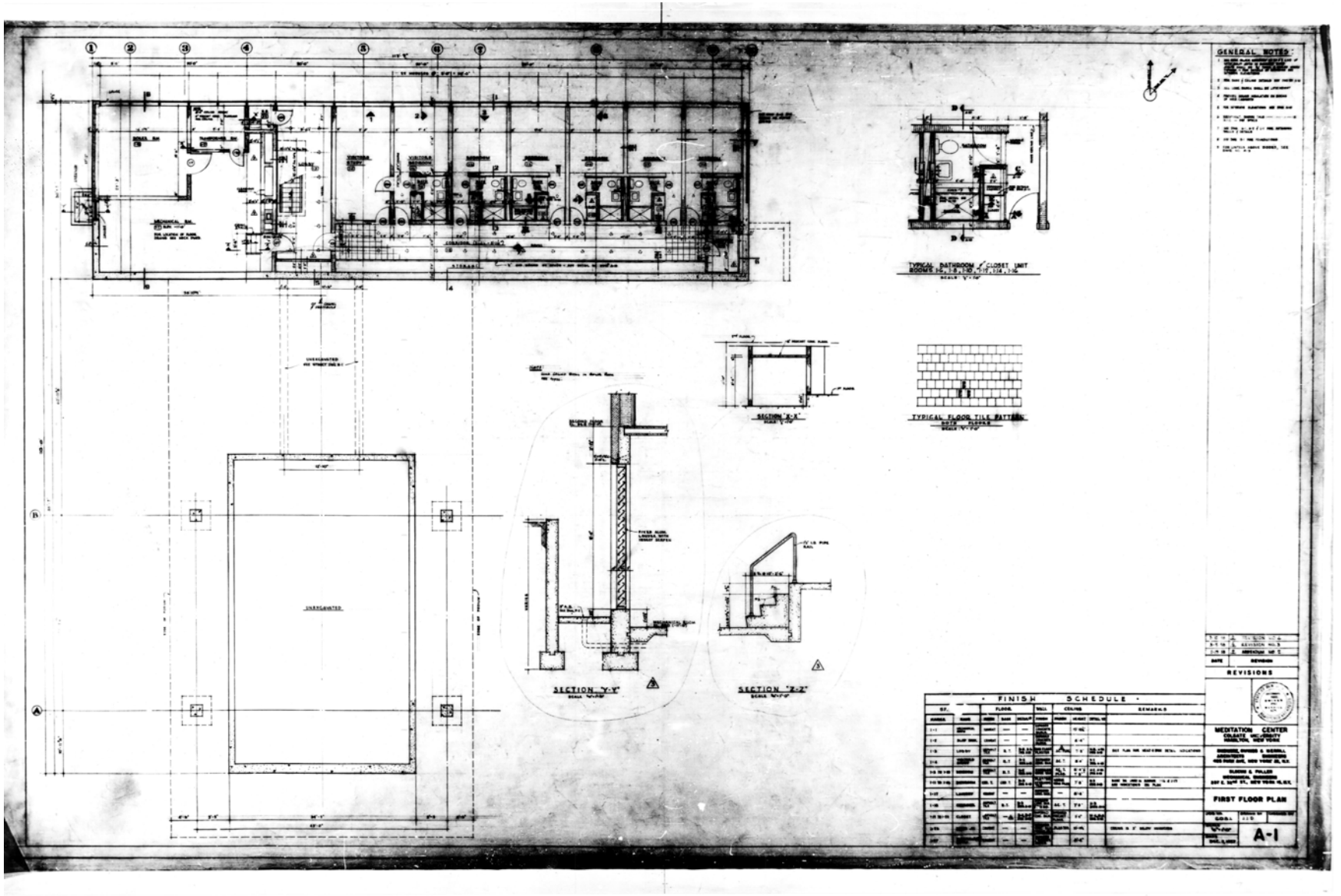


Chapel House- Existing Conditions- Exterior- South

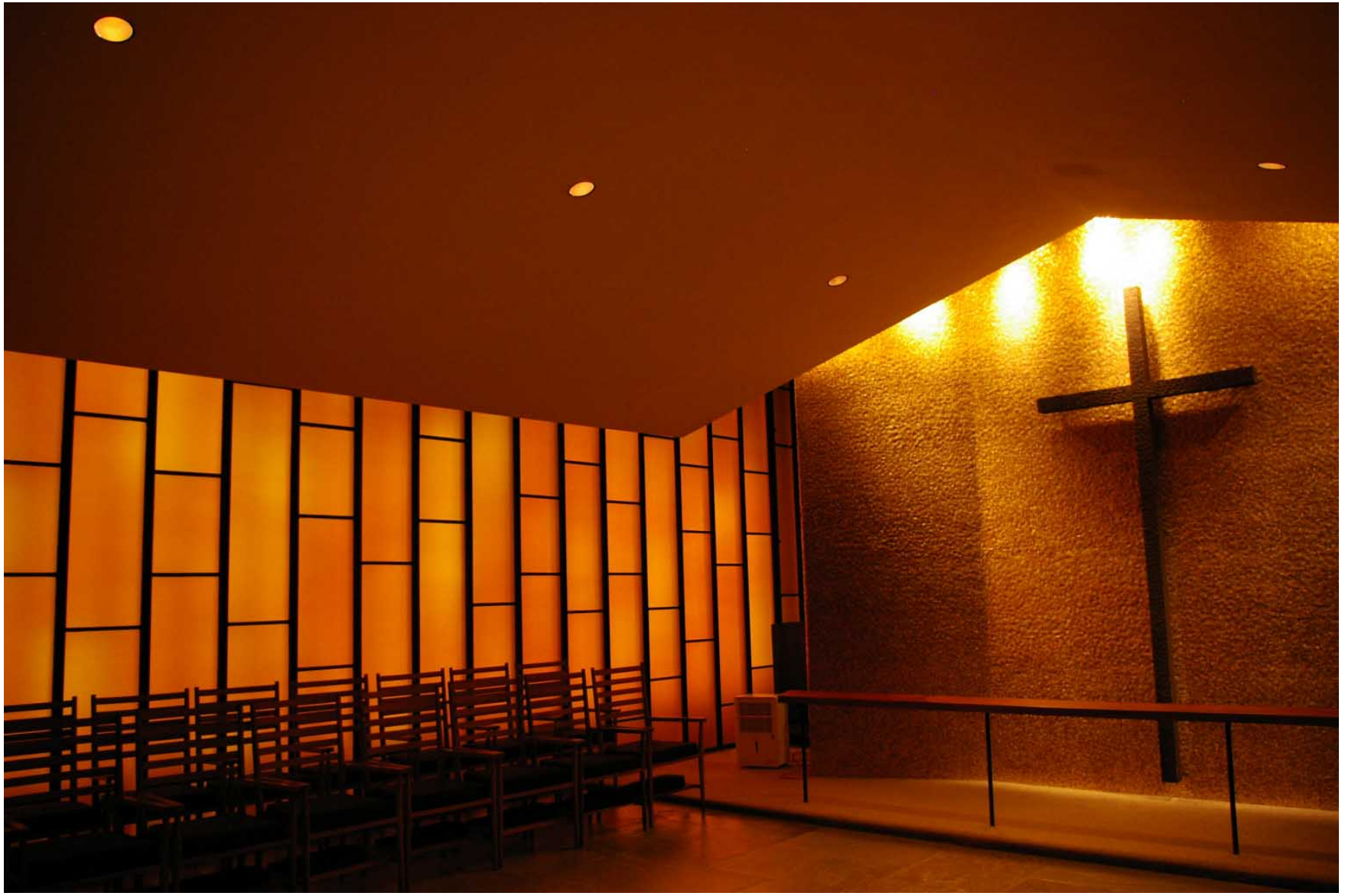
Chapel House- Existing Conditions- Exterior- West



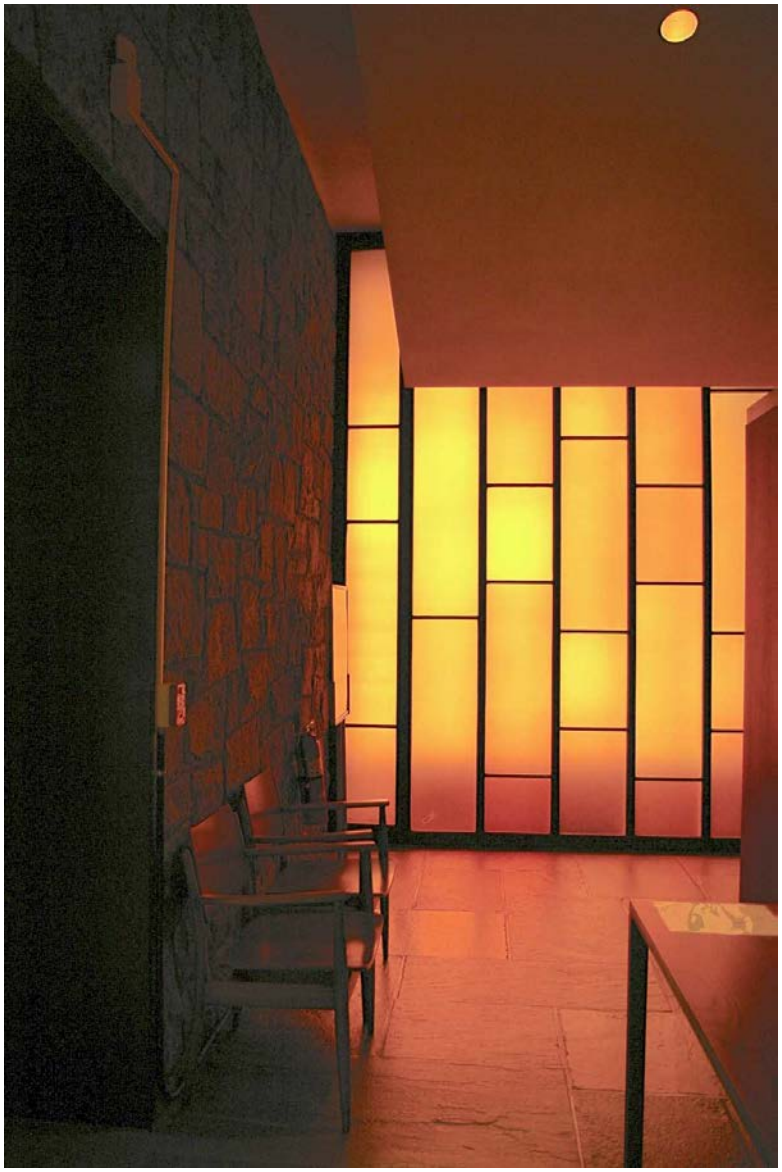
Chapel House- Existing Conditions- Upper Level Floor Plan

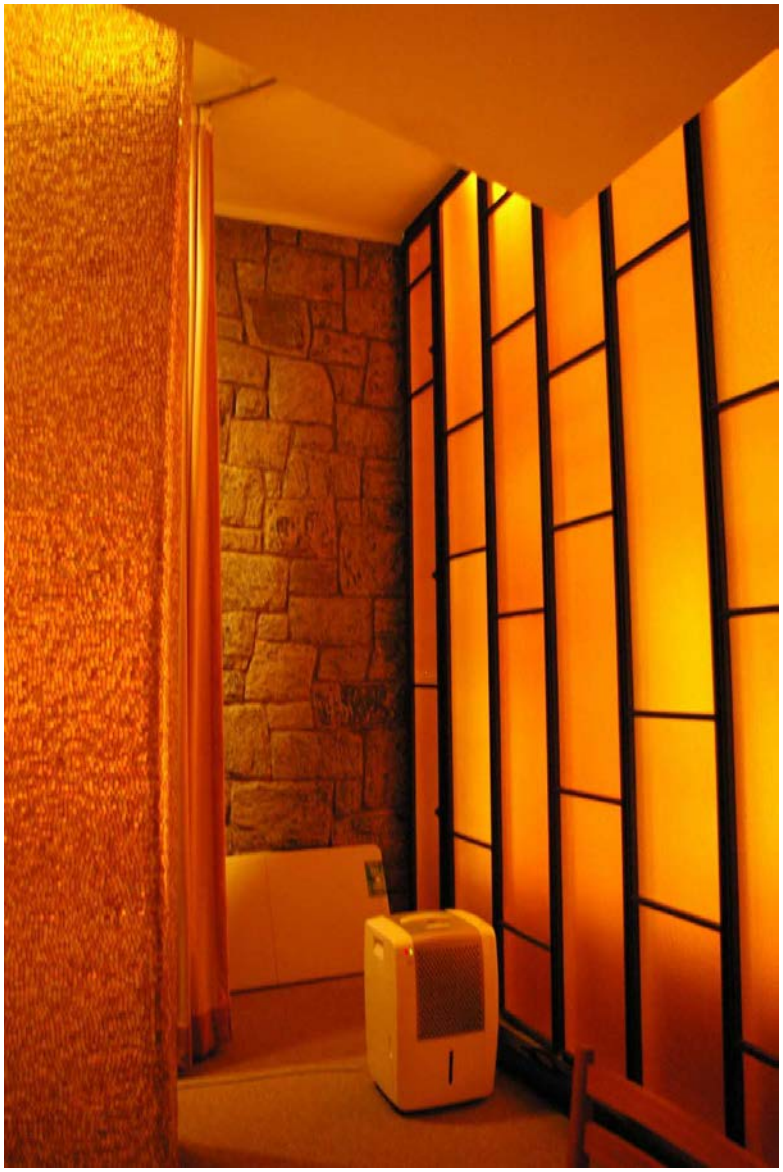


Chapel House- Existing Conditions- Lower Level Floor Plan

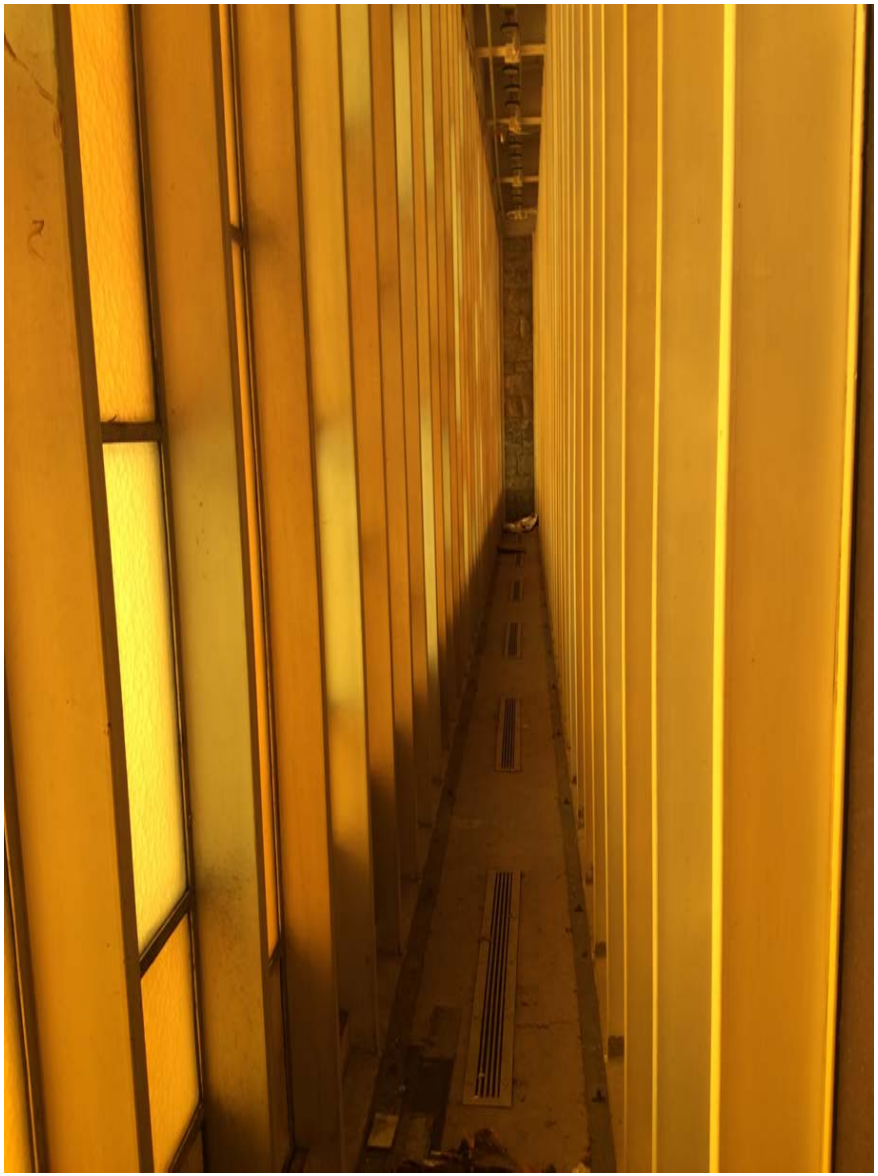


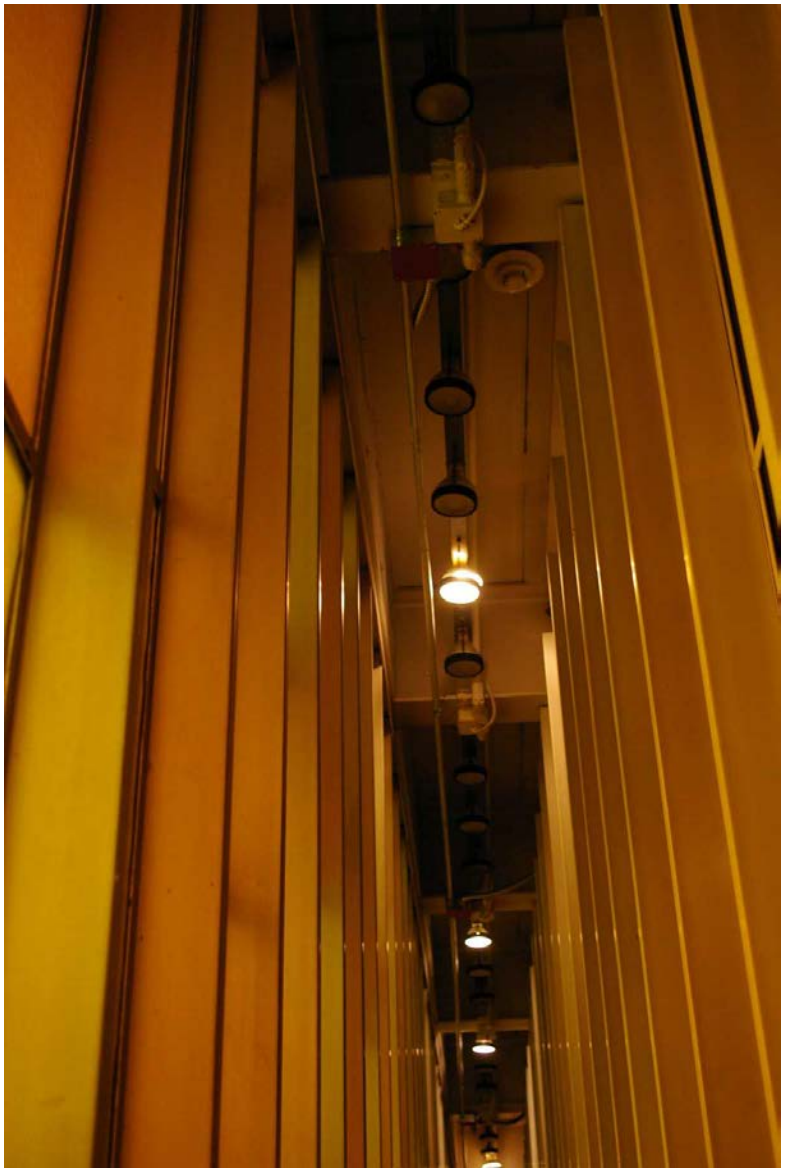
Chapel House- Existing Conditions- Chapel Interior





Chapel House- Existing Conditions- Chapel Interior





Chapel House- Existing Conditions- Chapel Amber Glass

Chapel House- Existing Conditions- Link & Library

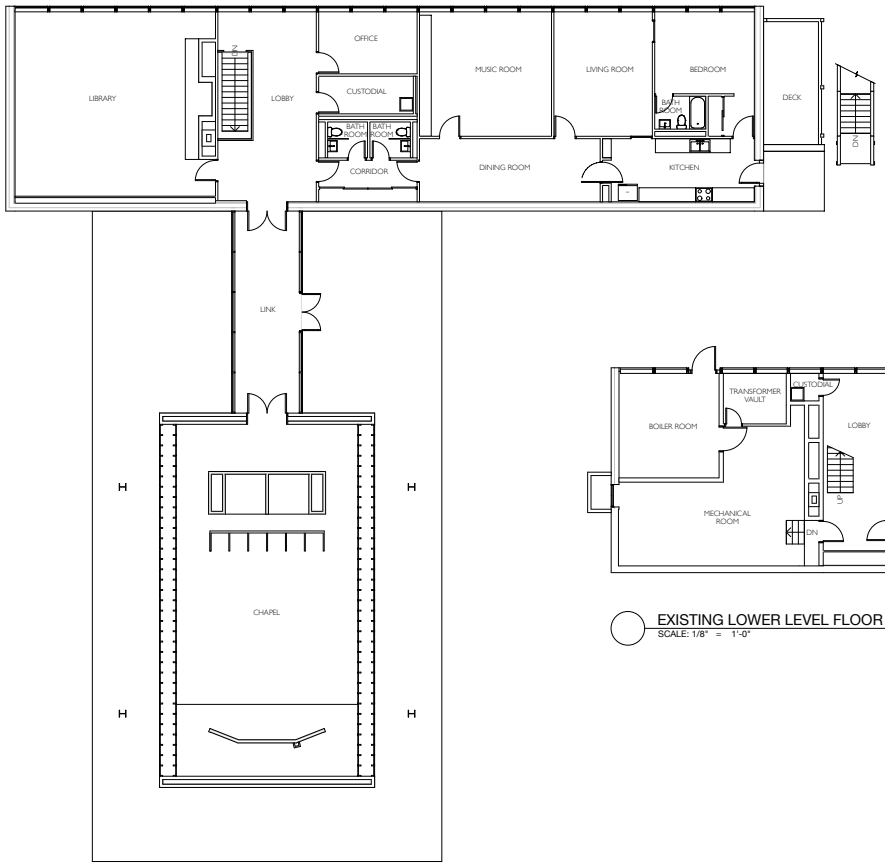
Chapel House- Existing Conditions- Library

Chapel House- Existing Conditions- Lobby View

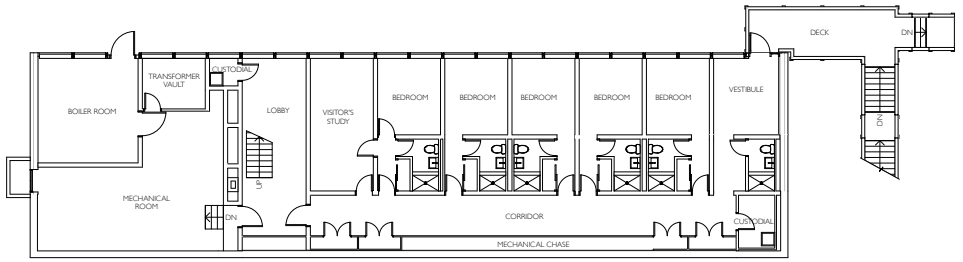
Chapel House- Existing Conditions- Dining & Music Room

Chapel House- Existing Conditions- Kitchen & Sleeping Rooms

Chapel House- Existing Conditions- Existing Curtain wall



EXISTING UPPER LEVEL FLOOR PLAN
SCALE: 1/8" = 1'-0"



EXISTING LOWER LEVEL FLOOR PLAN
SCALE: 1/8" = 1'-0"

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EXISTING UPPER & LOWER LEVEL FLOOR PLANS

Colgate University Chapel House
Schematic Design
24 September 2015

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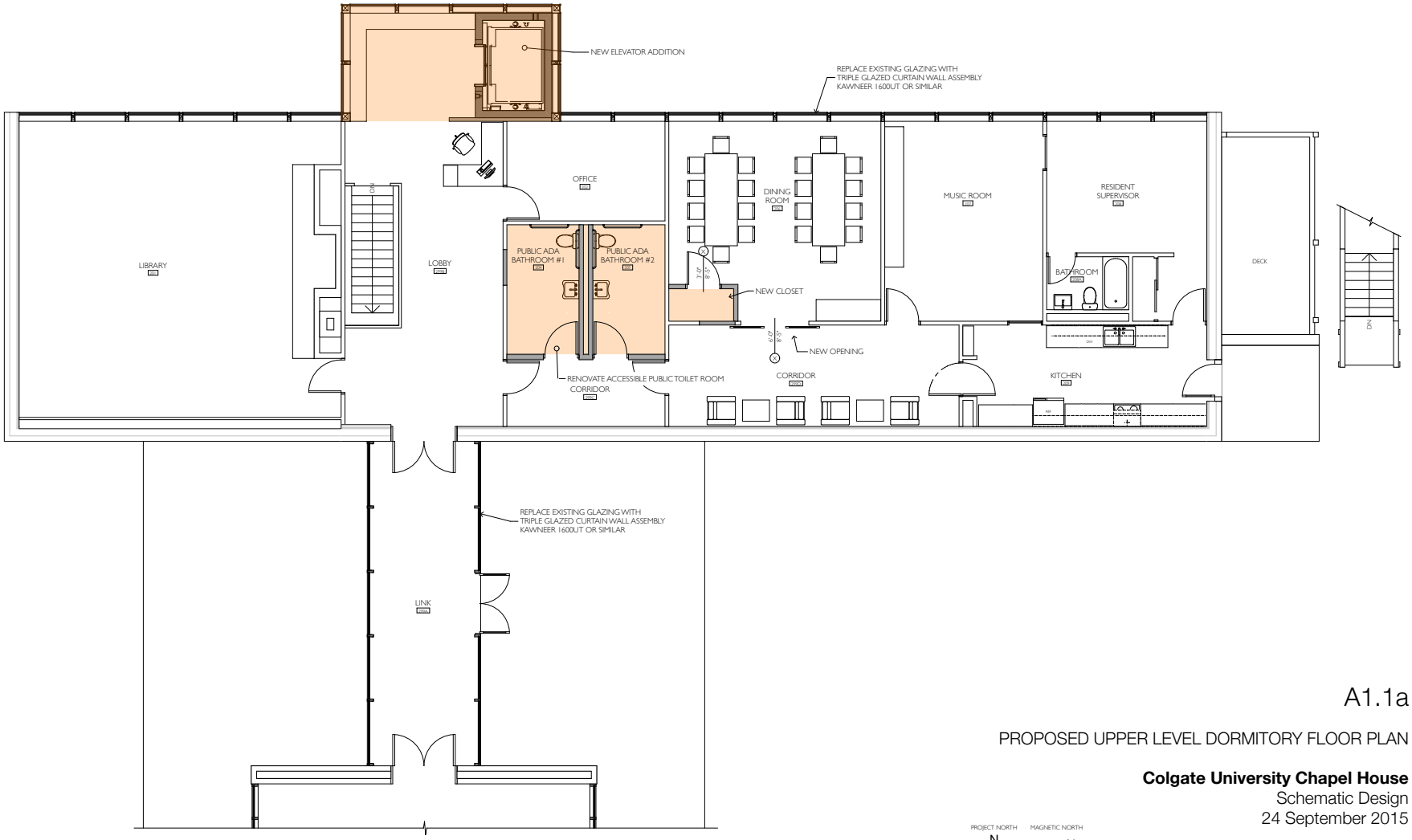

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PROPOSED UPPER LEVEL DORMITORY FLOOR PLAN

Colgate University Chapel House
Schematic Design
24 September 2015

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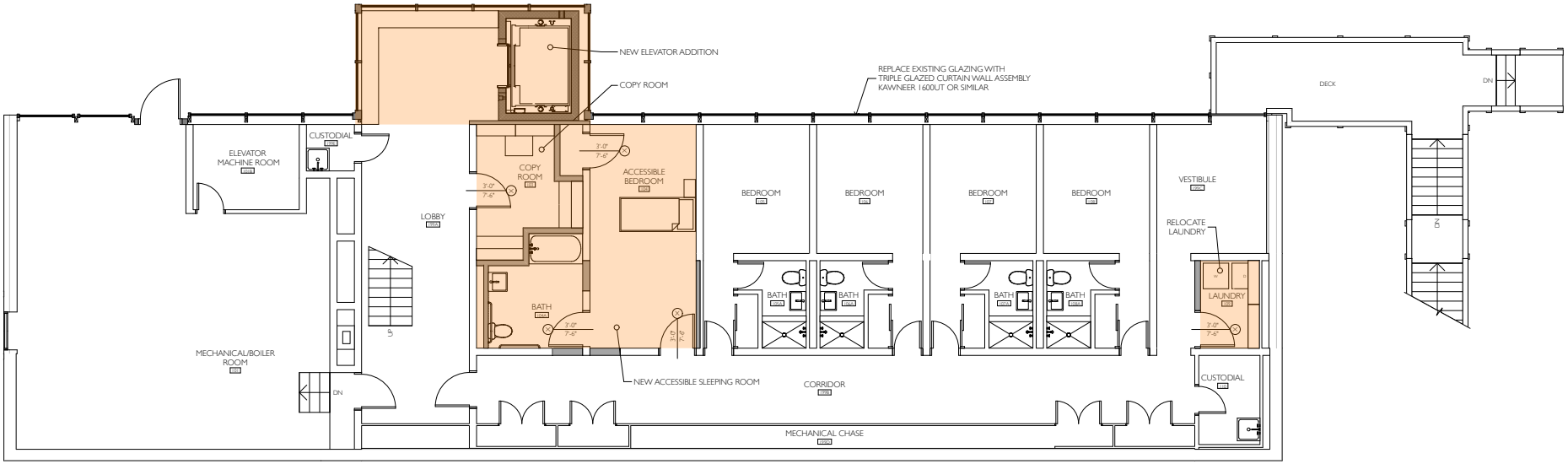
PROJECT NORTH MAGNETIC NORTH

0 1 2 3 4 5 6 7 8 9 10
1/4" = 1'-0"

Chapel House- Design Process- Proposed Addition- Upper Level Plan



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PROPOSED LOWER LEVEL DORMITORY FLOOR PLAN

Colgate University Chapel House
Schematic Design
24 September 2015

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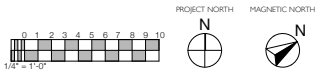

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Colgate - Chapel House Renovation

Heating Energy - Summary

With Actual Blower Door

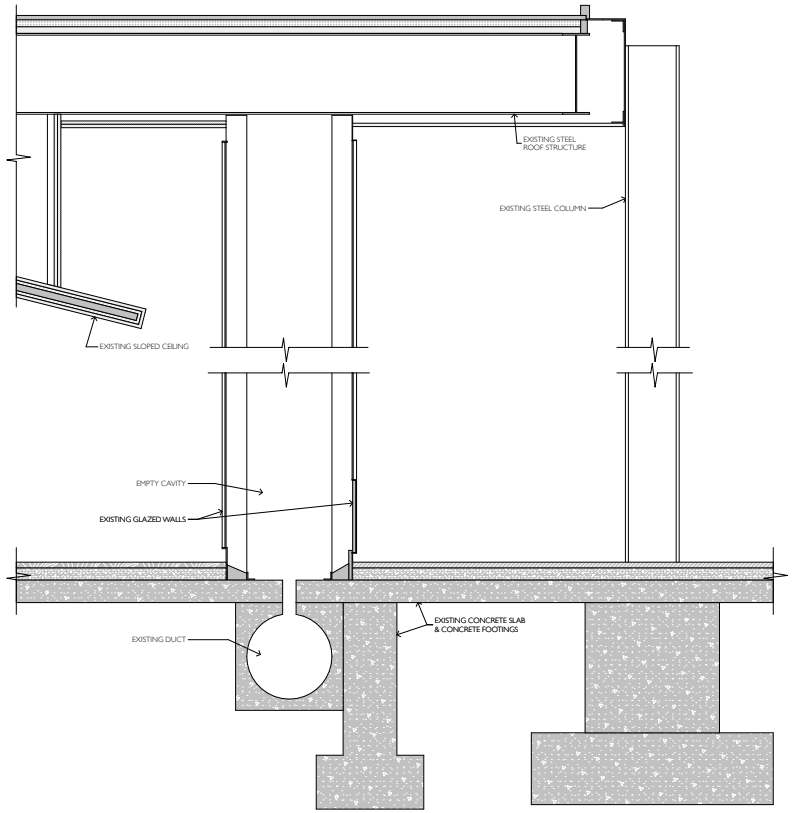
rev. 9/23/16

	Assembly R-Values								Other Loads								
DORMITORY	Stone Wall	Window	Spandrel	Sill/Band	Slab Edge (below grade)	Roof	Door	Glass Door	Infiltration (cfm50)	Internal Gains (kwh)	Ventilation (cfm cont.)	Heat Recovery	Net Annual Load (MMBTU)	**Load Reduction (Envelope)**	Heating System (incl. distr.)	Input (MMBTU)	**Savings (BTU) with GSHP**
Existing Conditions	5.00	1.75	2.00	1.25	0.20	15.00	3.00		2688	2000	600	0%	383	0	70%	547	-
Base Case	5.00	5.00	20.00	20.00	0.20	50.00	3.00		1000	1000	1300	65%	171	**55%**	320%	53	65-75%
All The Way	20.00	6.00	30.00	30.00	10.00	60.00	5.00		550	1000	1300	80%	63	**84%**	320%	20	75-85%

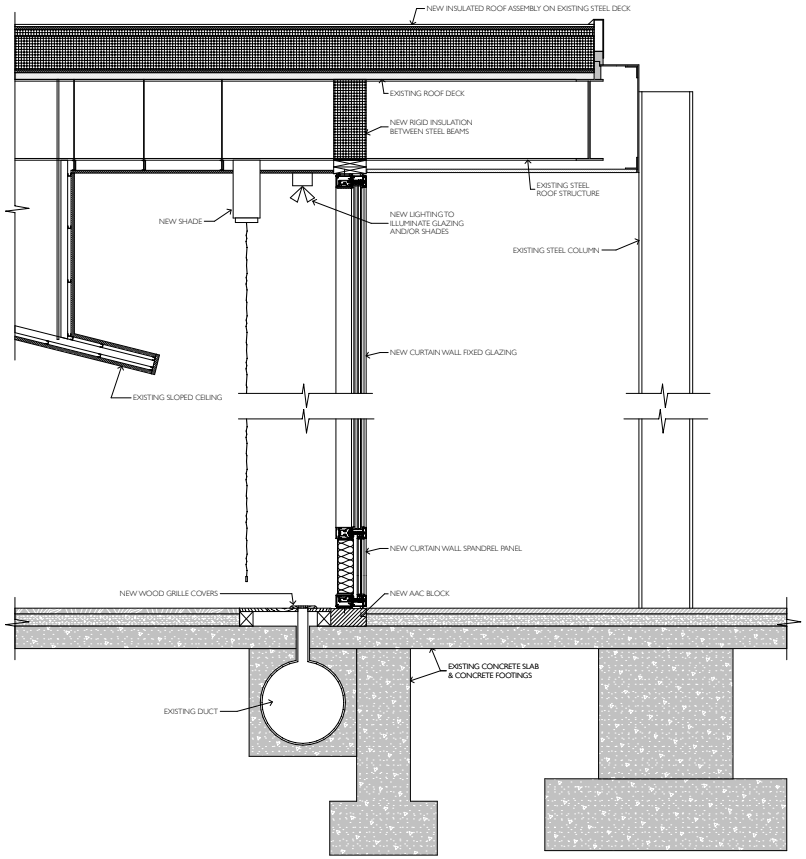
CHAPEL	Stone Wall	Window		Slab Edge	Roof	Door	Glass Door	Infiltration	Internal Gains	Ventilation	Heat Recovery	Net Annual Load (MMBTU)	**Load Reduction (Envelope)**	Heating System	Input (MMBTU)	**Savings (BTU) with GSHP**
Existing Conditions	5.00	1.75		0.20	15.00	3.00	2.00	2500	4000	1200	0%	289	0	65%	445	-
Base Case	5.00	5.00		0.20	50.00	3.00	5.00	500	2000	1200	65%	65	**78%**	300%	22	70-80%
All The Way	20.00	6.00		10.00	60.00	5.00	5.00	200	2000	1200	80%	22	**92%**	300%	7	85-90%

Includes Entry/ Connector

WHOLE BUILDING		Net Annual Input (MMBTU)	**Savings vs. Existing**
Existing Conditions	50% Reduction of existing electric consumption also assumed - based on conversion to LED fixtures.	992	
Base Case	NOTE: Building will incur additional energy CONSUMPTION due to addition of Cooling capacity.	75	65-75%
All The Way	No calculations made in reference to the added cooling load.	27	80-90%



EXISTING WALL SECTION @ CHAPEL GLAZING
SCALE: 1" = 1'-0"



PROPOSED WALL SECTION @ CHAPEL GLAZING
SCALE: 1" = 1'-0"

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CHAPEL GLAZING WALL SECTIONS

Colgate University Chapel House
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Sacred White

Colgate University Chapel House
Schematic Design
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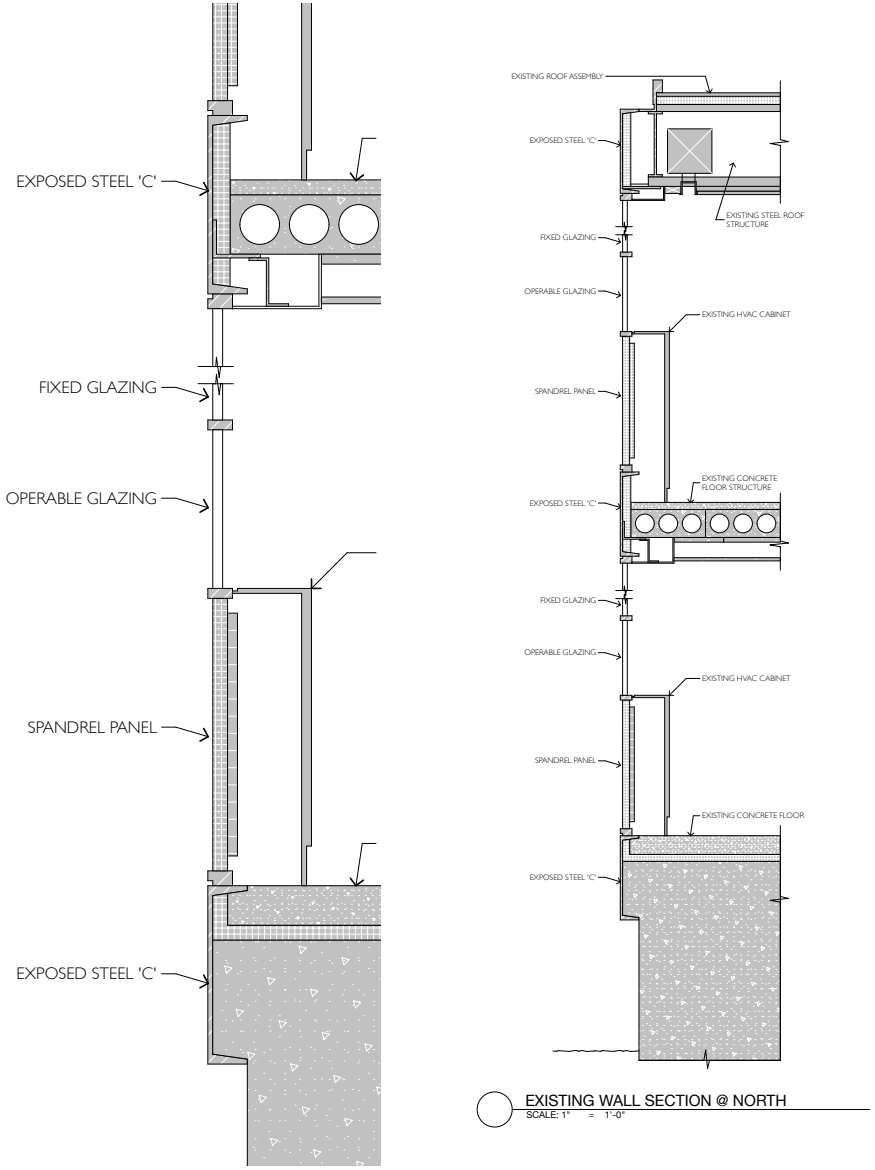
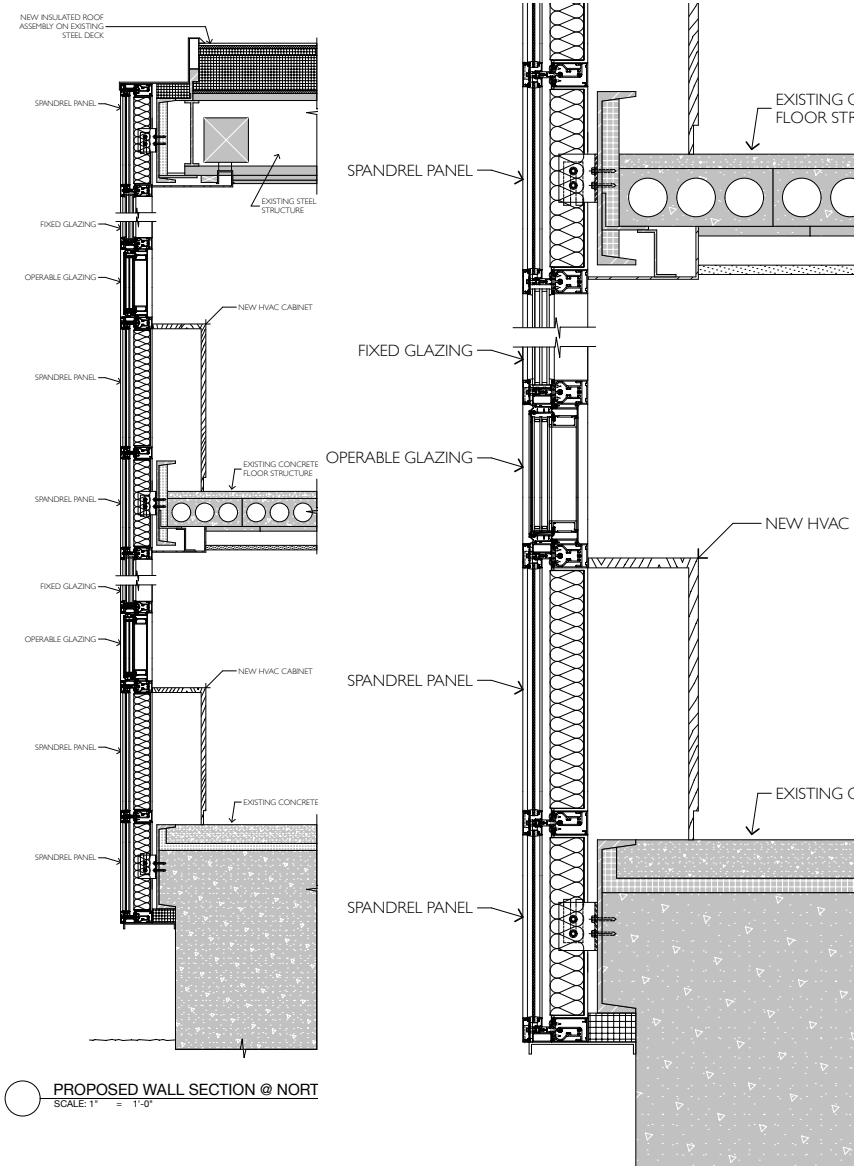


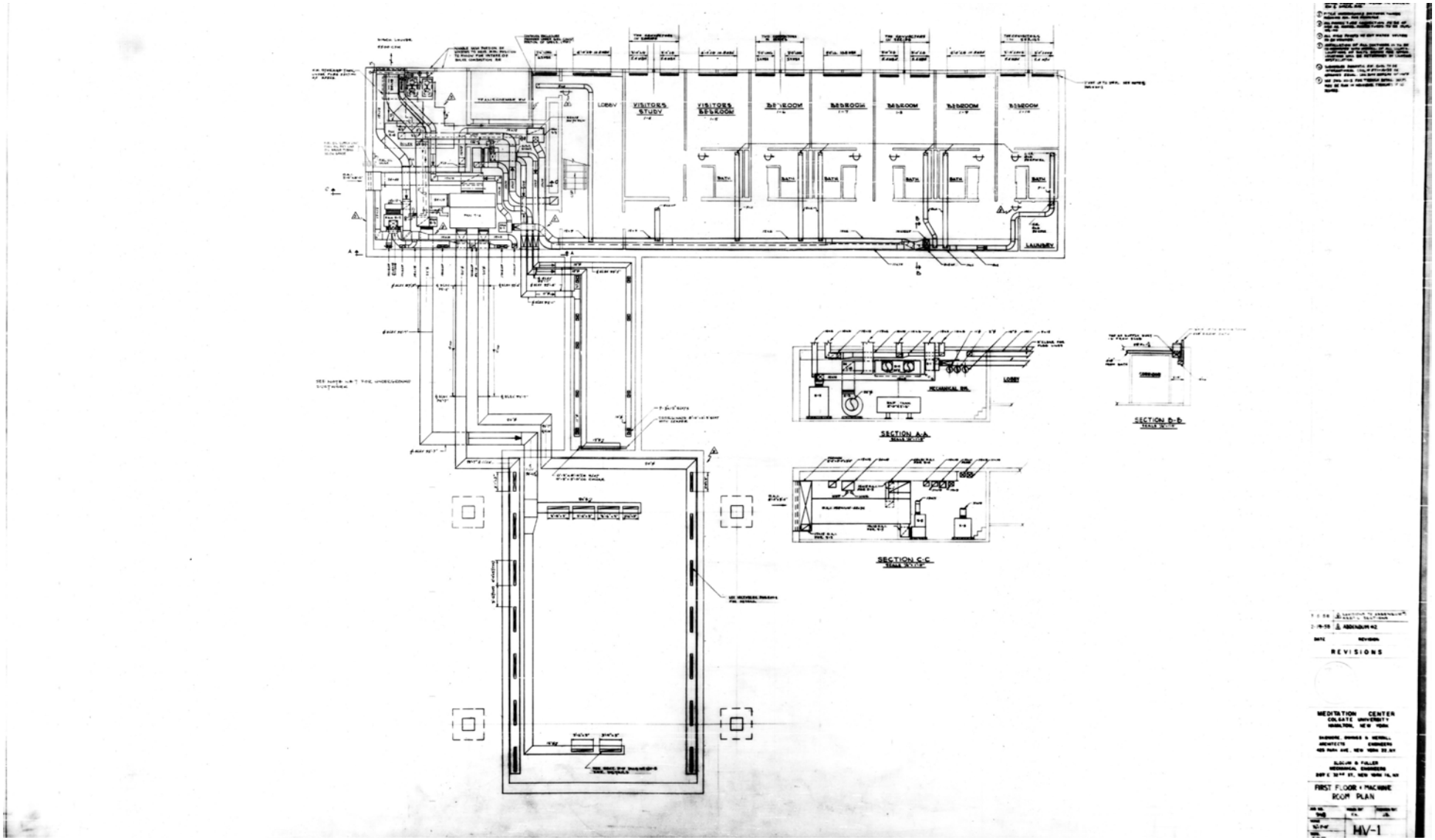


Chapel House- Design Process – New curtain wall outside structure

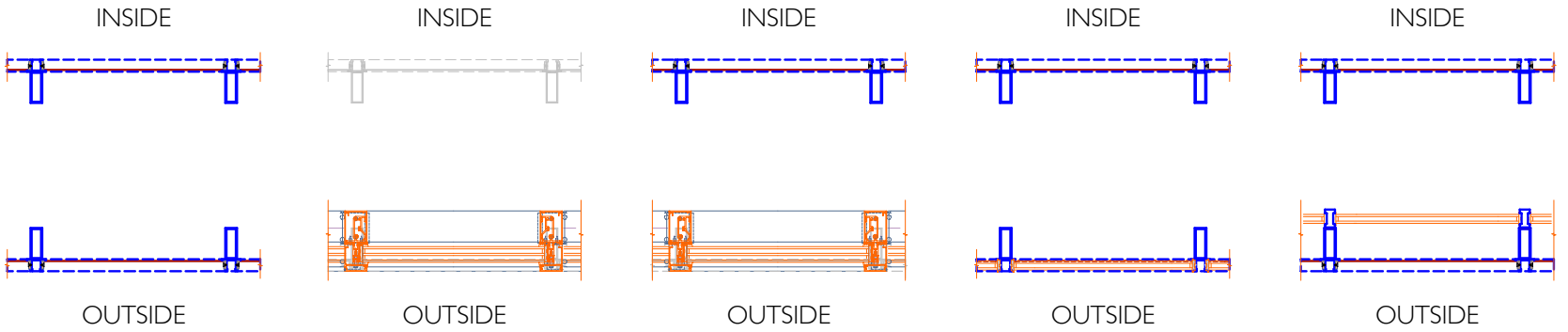
Community Feedback (beyond the Design Committee):

- Plan changes and elevator addition were embraced
- Envelope proposal for new curtain wall at west wall embraced
- Proposal to change the aesthetic of the Amber Glass rejected despite recommendation from the Design Committee

- What to do?



Chapel House- Underground ductwork



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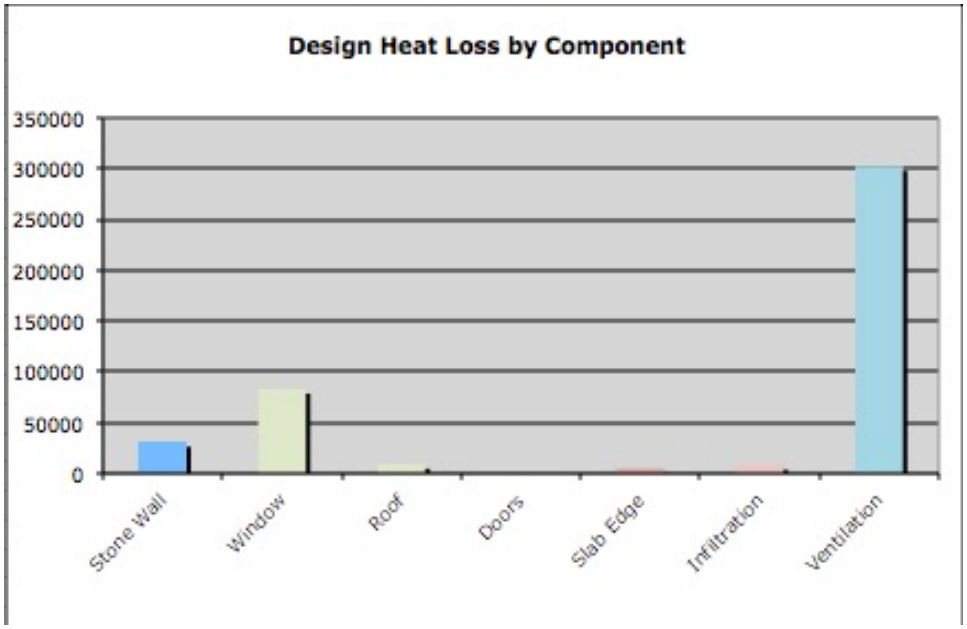
File: 15-06 Colgate Chapel House Print Date: 10/6/15

Chapel Glazing - Options
Date: 06 Oct 2015
Project: 15-06
COLGATE UNIVERSITY
CHAPEL HOUSE

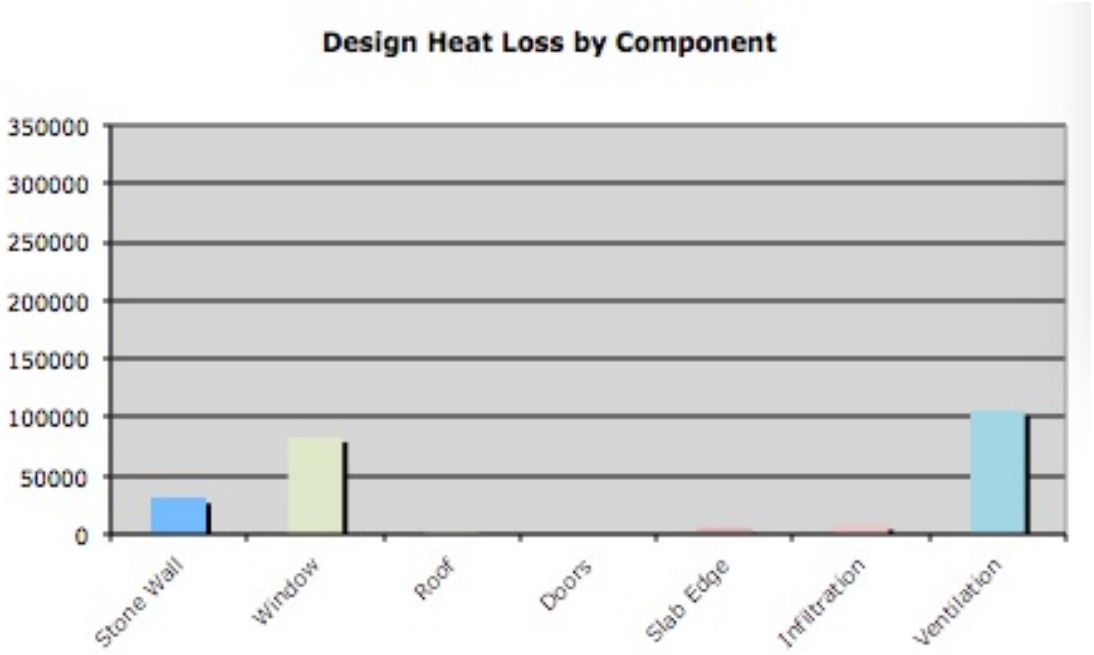
Chapel House- Design Process – Amber Glass options

The graph below shows the existing loads with the 4,000 cfm exhaust:



The next graph shows the revised loads with the new ventilation system, roof being replaced, and no change to the Amber Glazing at all. This represents a 65-70% reduction in the heating load.

Leave Chapel Glazing As Is (R-1.75 Glazing):



Chapel House- Construction – Replace Link and patio

Chapel House- Construction – Geo well vault

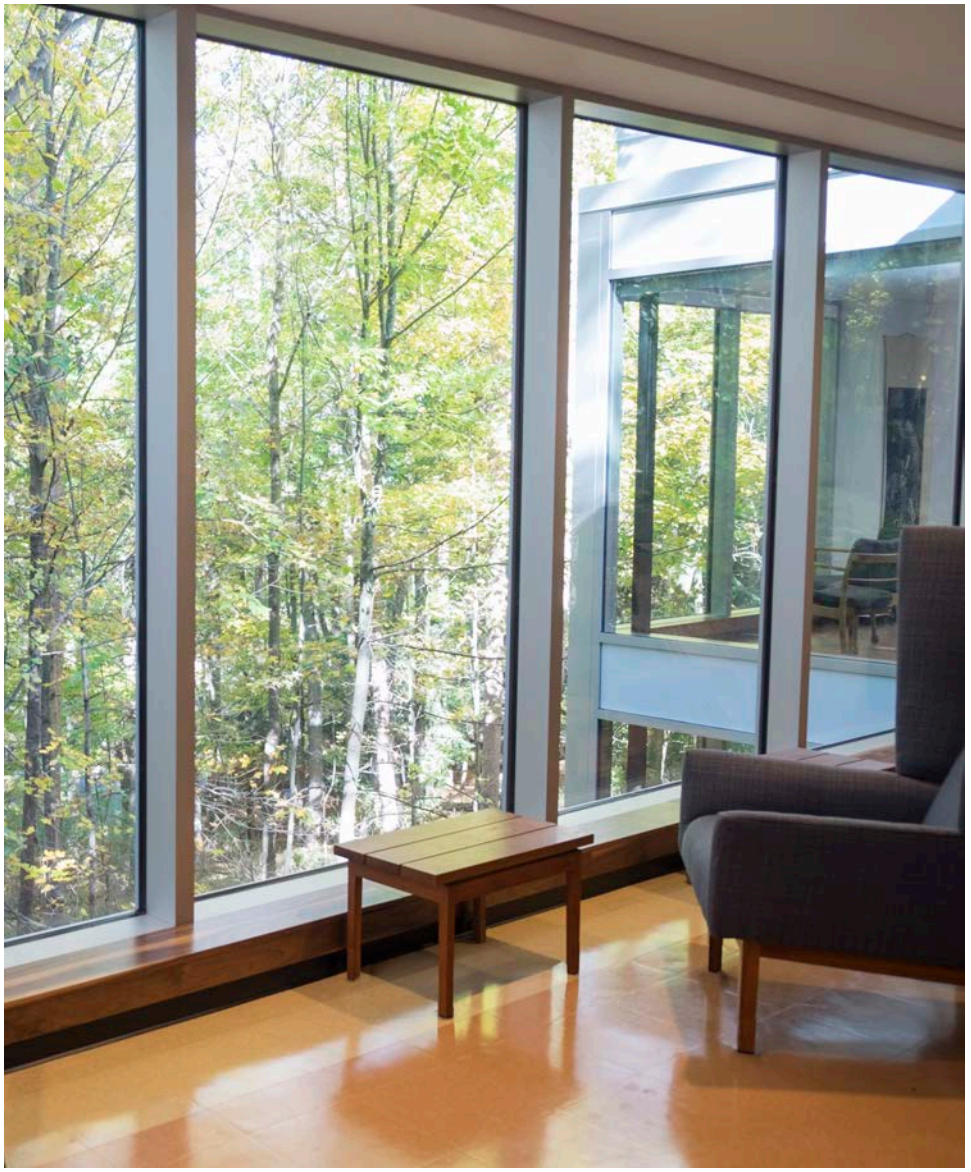
Chapel House- Construction – Airsealing

Chapel House- Completed photos– Entrance

Chapel House- Completed photos– Elevator lobby addition

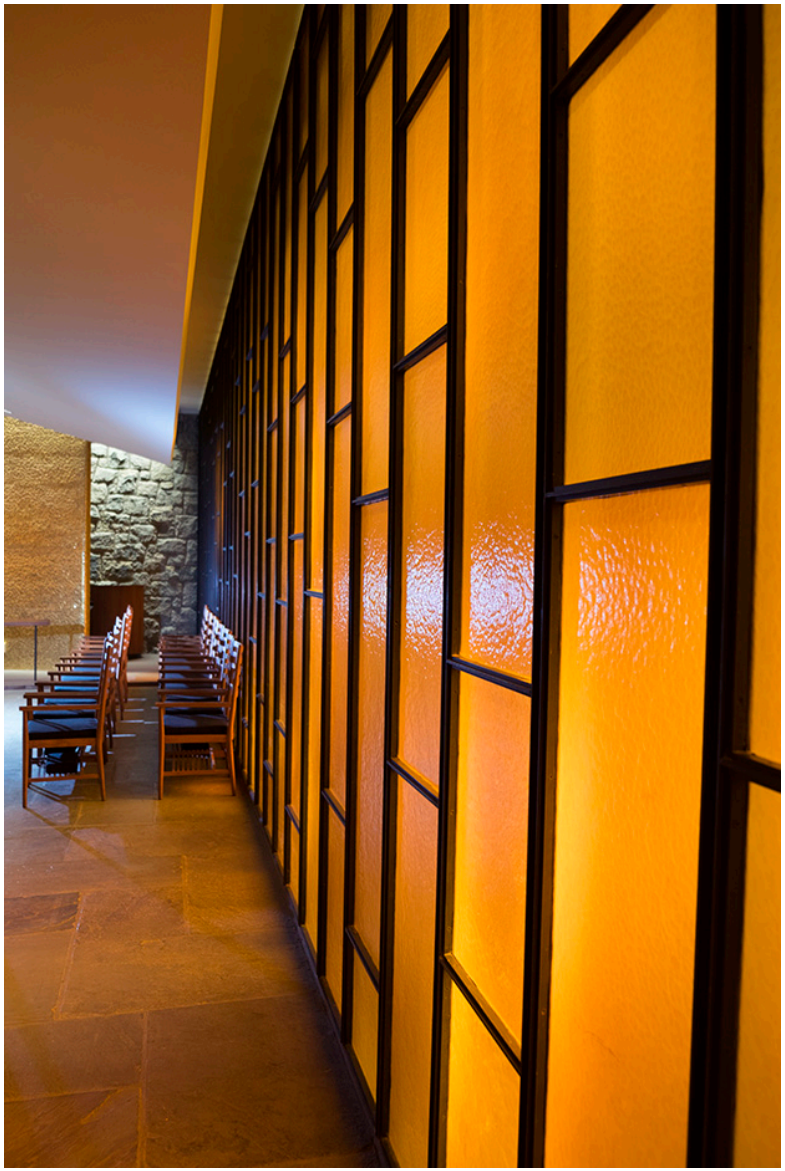
Chapel House- Completed photos– Elevator lobby

Chapel House- Completed photos– Elevator lobby



Chapel House- Completed photos– Stairway and Library

Chapel House- Completed photos– Chapel



Chapel House- Completed photos– Amber Glass

Chapel House- Completed photos–

Chapel House- Completed photos

Starting Energy Use Intensity (EUI) Kbtu/sf/year	992 Mmbtu or EUI of 104
Predicted EUI	EUI of 35
Actual EUI	pending
Starting infiltration rate	.38 cfm75/sfs
Code	.40 cfm75/sfs
Resulting	.26 cfm75/sfs

Chapel House- Projected Results

The Log, Williams College — Williamstown, MA

Original Architect	Kenneth Reynolds (Marcus T. Reynolds Architects) A Carpenter
Contractor	Cummings General Contractor Inc.
Year built	1941 (1800s)
Building Area	7,890 sf
Construction Cost	$3.7 Million

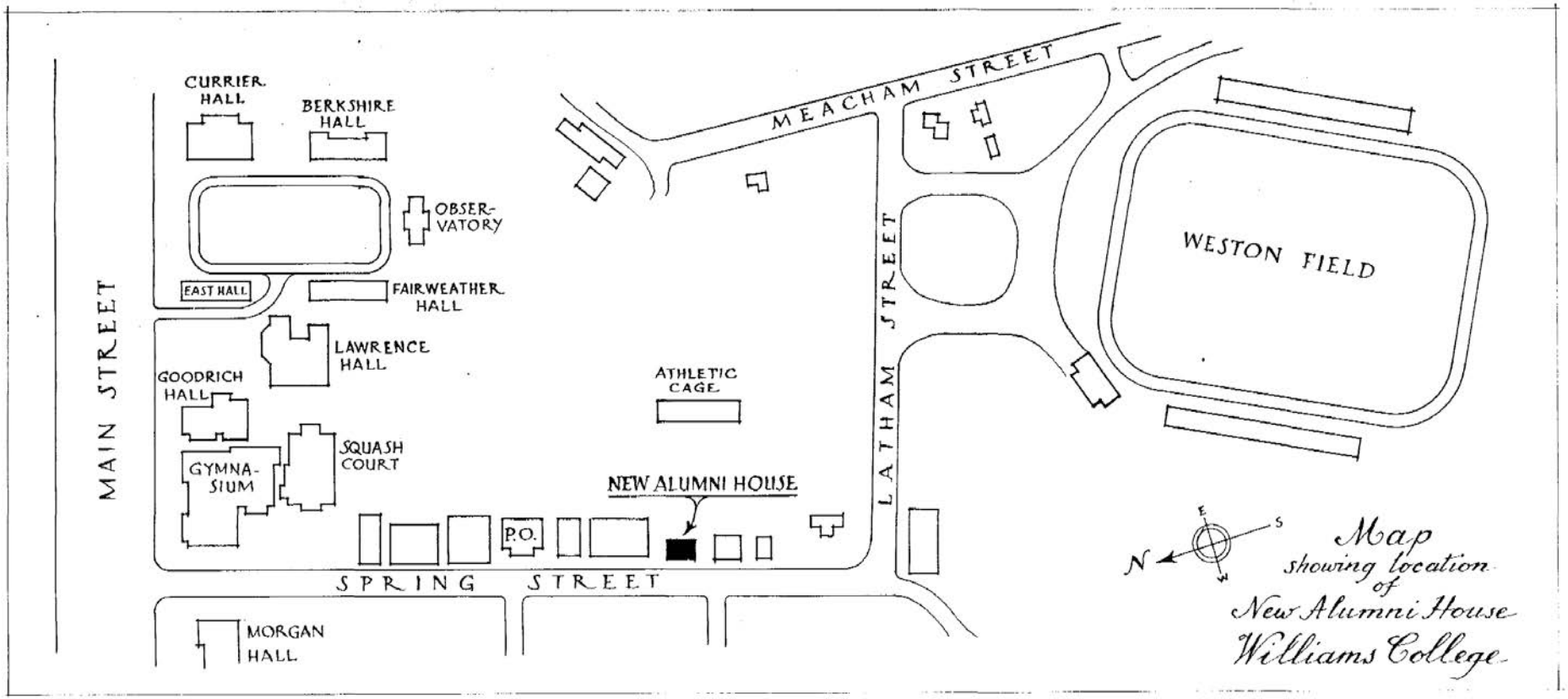
Design Team

C&H Architects	Architect of Record
Energy Balance	Systems & Envelope
B2Q Assoc.	MEP Engineering
Barry Engineering	Structural
Guntlow Assoc.	Civil Engineering
Lorin Starr Interiors	Interior Design
Crabtree & McGrath	Food Services
Conceptual Lighting	Lighting Design
MH Professional	Commissioning Agent (By Owner)

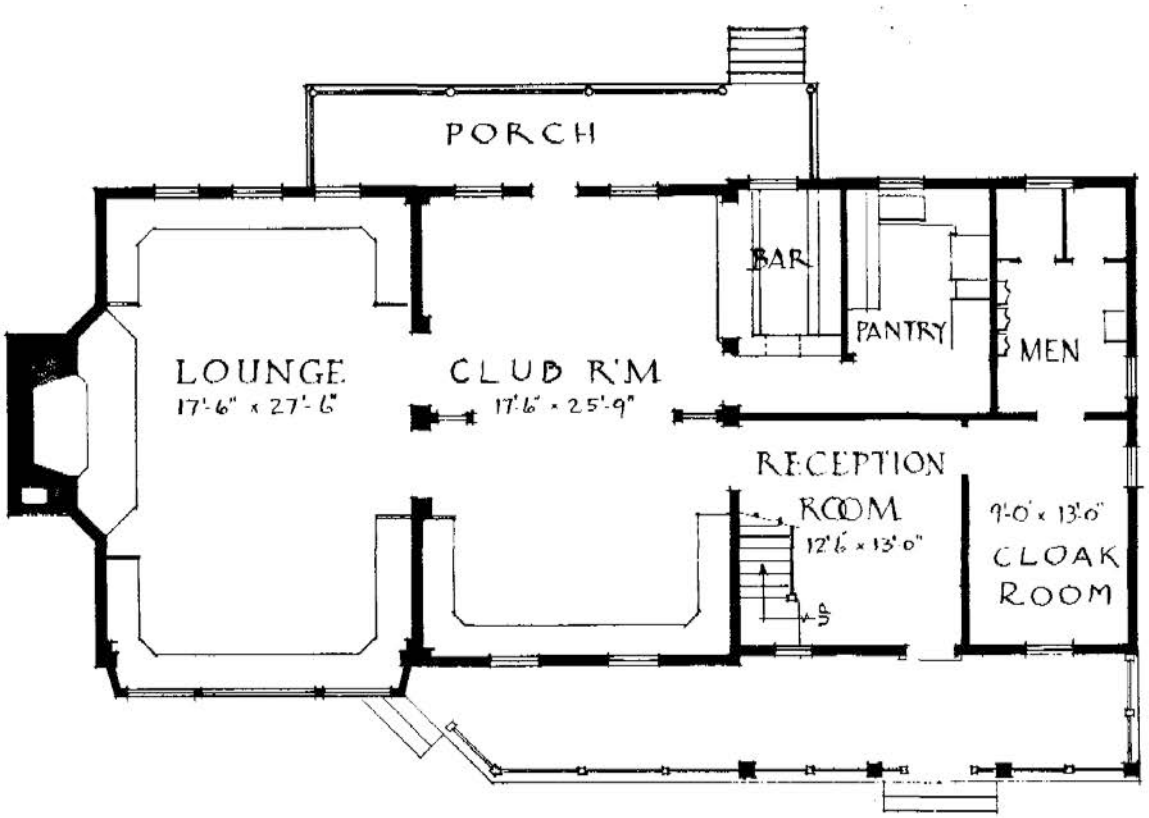
Project Goals:

- Protect and preserve the architectural integrity and historical significance of The Log.

- Make extensive deferred maintenance renovations and access upgrades.
- Add full-service restaurant & catering capacity.
- Total Systems Upgrade (MEPF - Envelope - Energy)
- Engage a diverse building commitee including a strong alumnae presence.
- *Do Not Change The Log!*



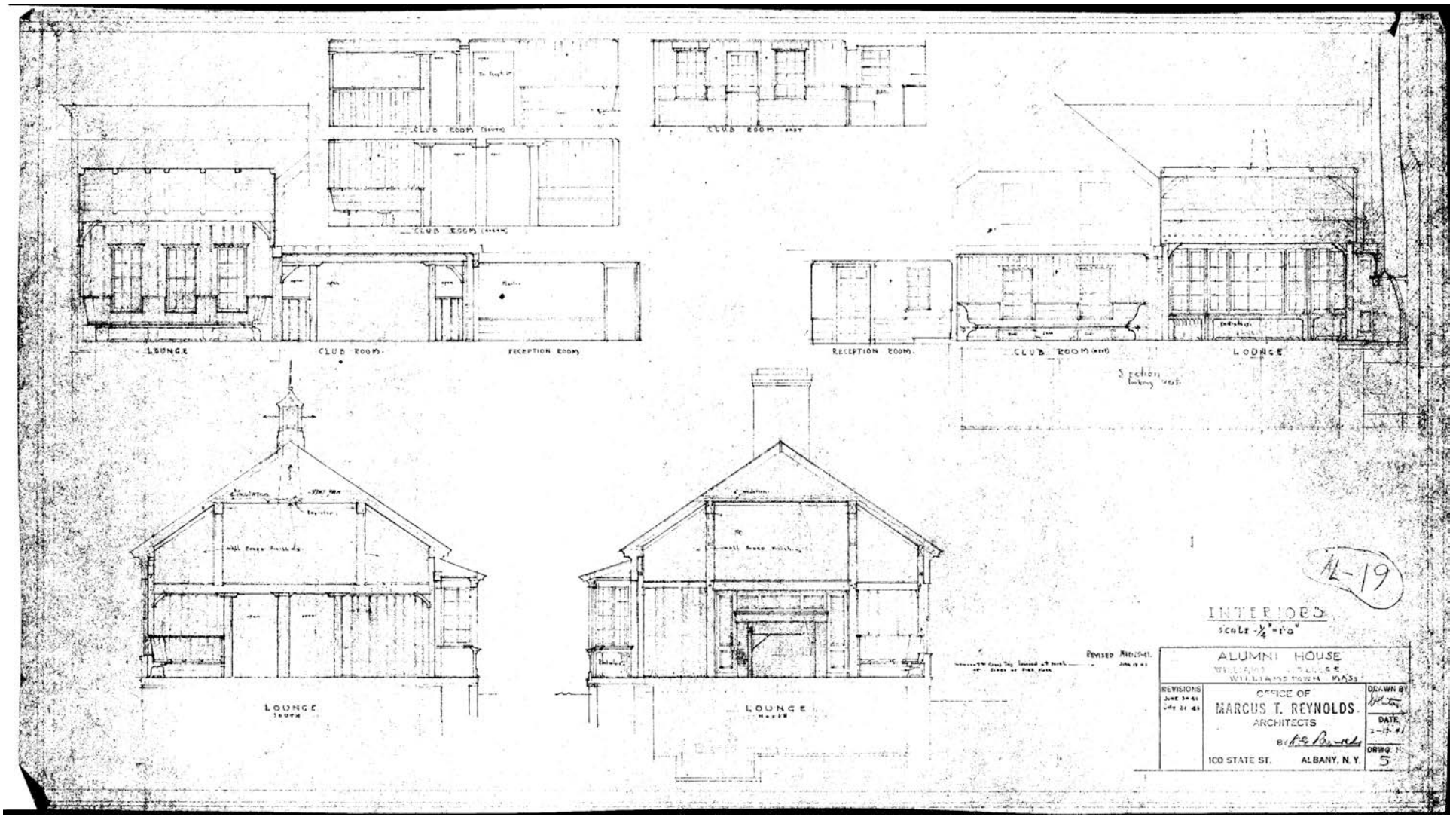
The Log – Original Drawings – 1941 Site Plan



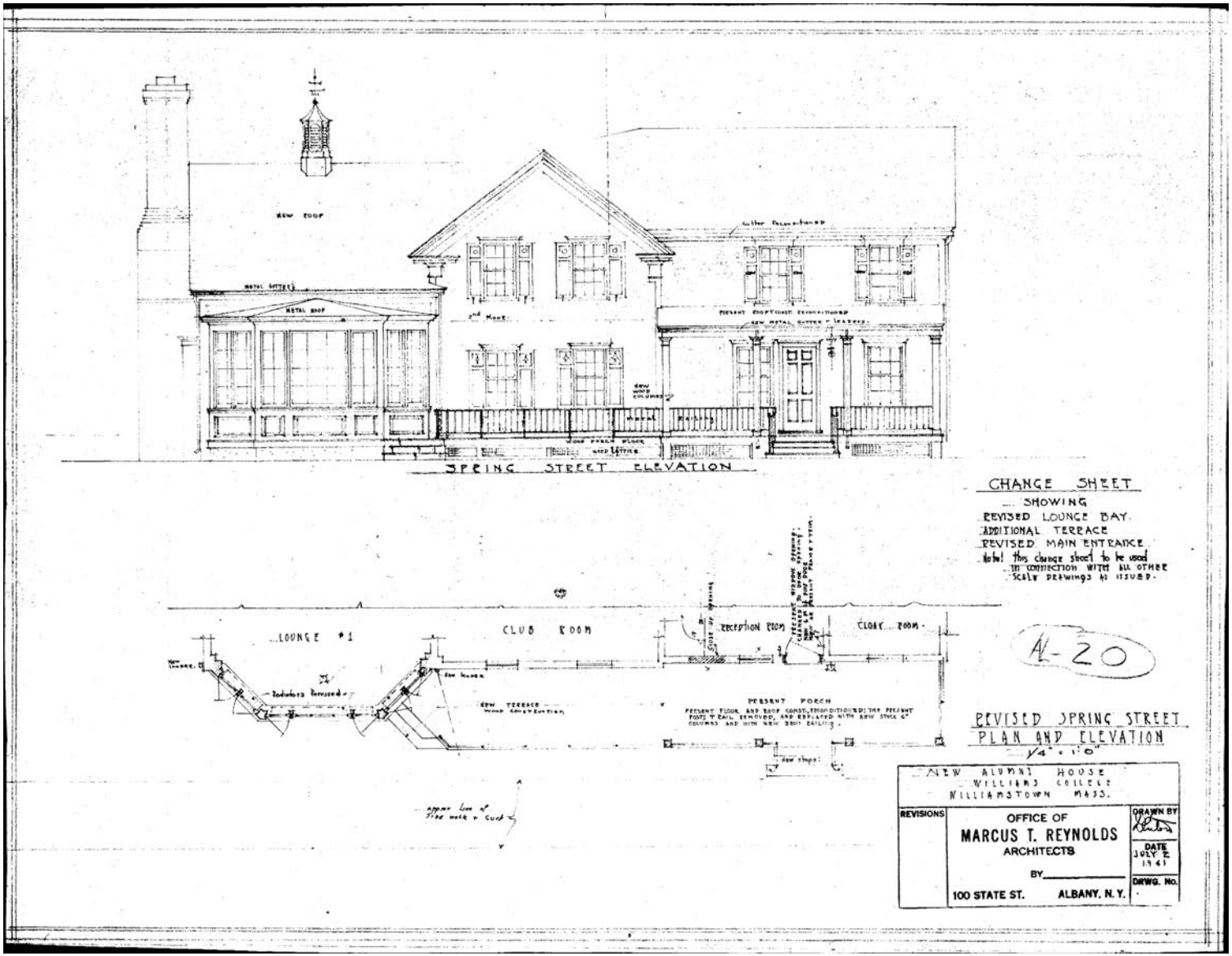
FIRST FLOOR PLAN

Office of Marcus T. Reynolds
Architects
100 State St. Albany. N.Y.

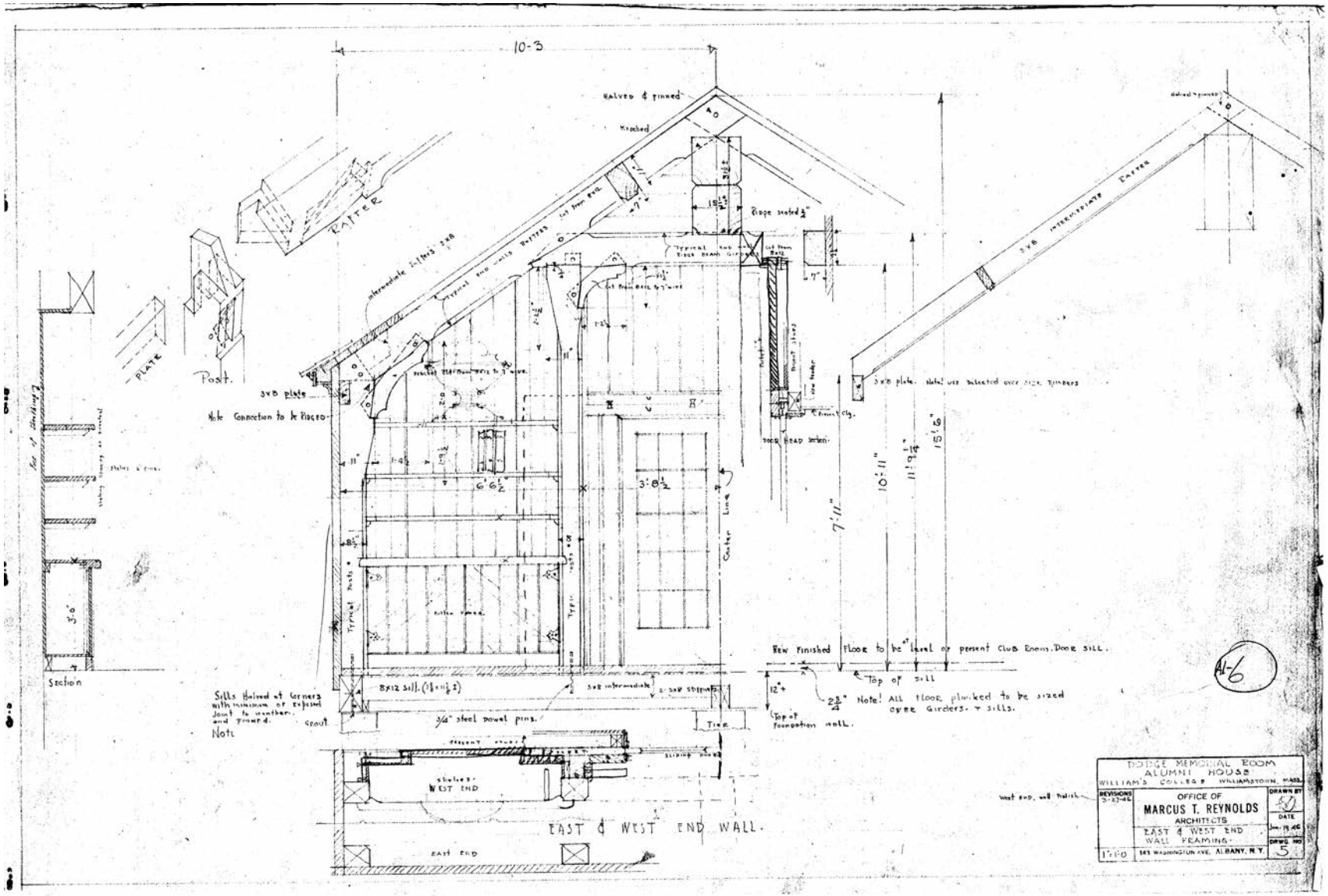
The Log – Original Drawings – 1941 1st Floor Plan



The Log – Original Drawings - Sections



The Log – Original Drawings - Streetscape



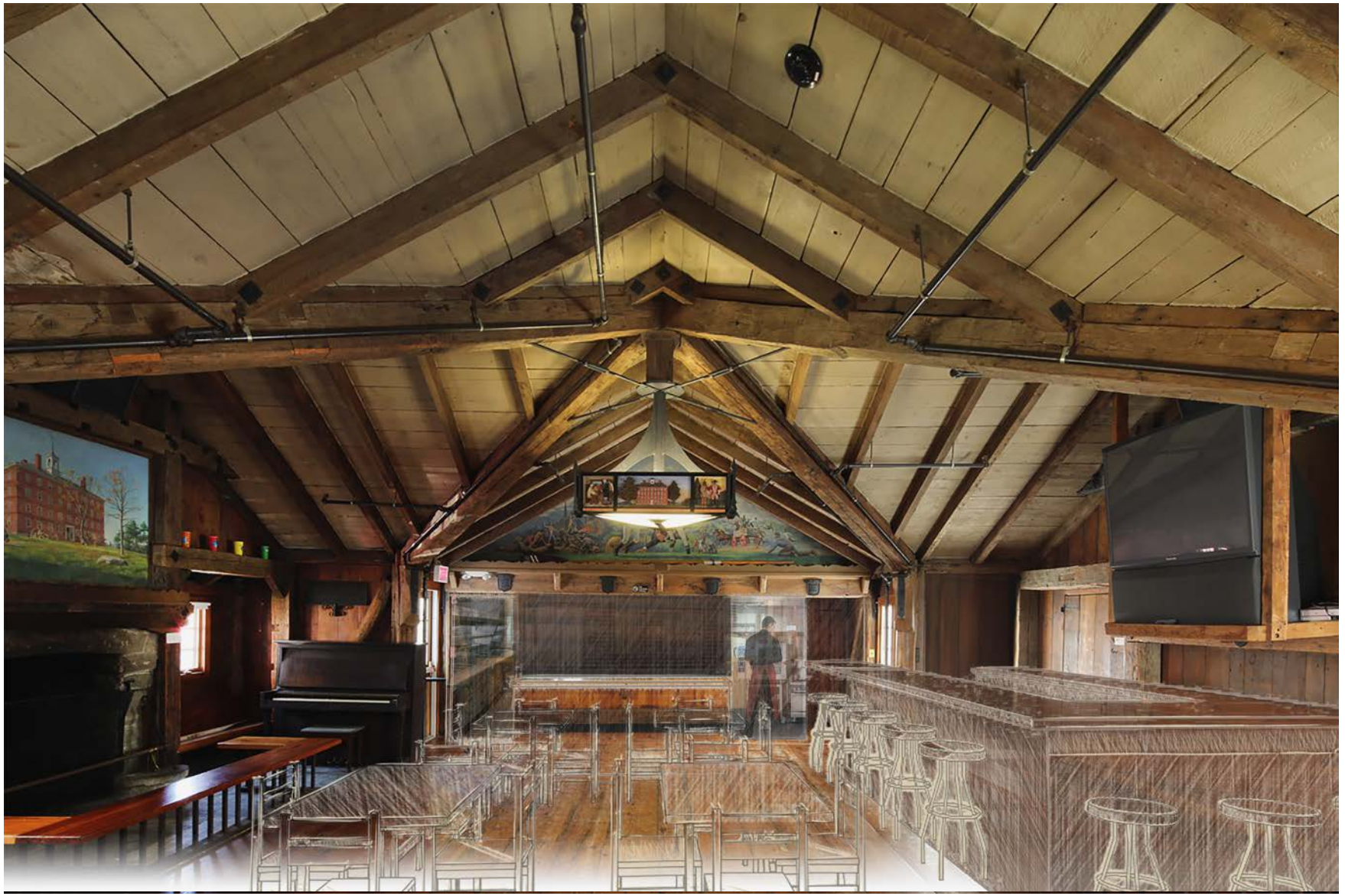
The Log – Original Drawings – 1946 – Dodge Room Beam

The Log – Existing Conditions – The Dodge Room

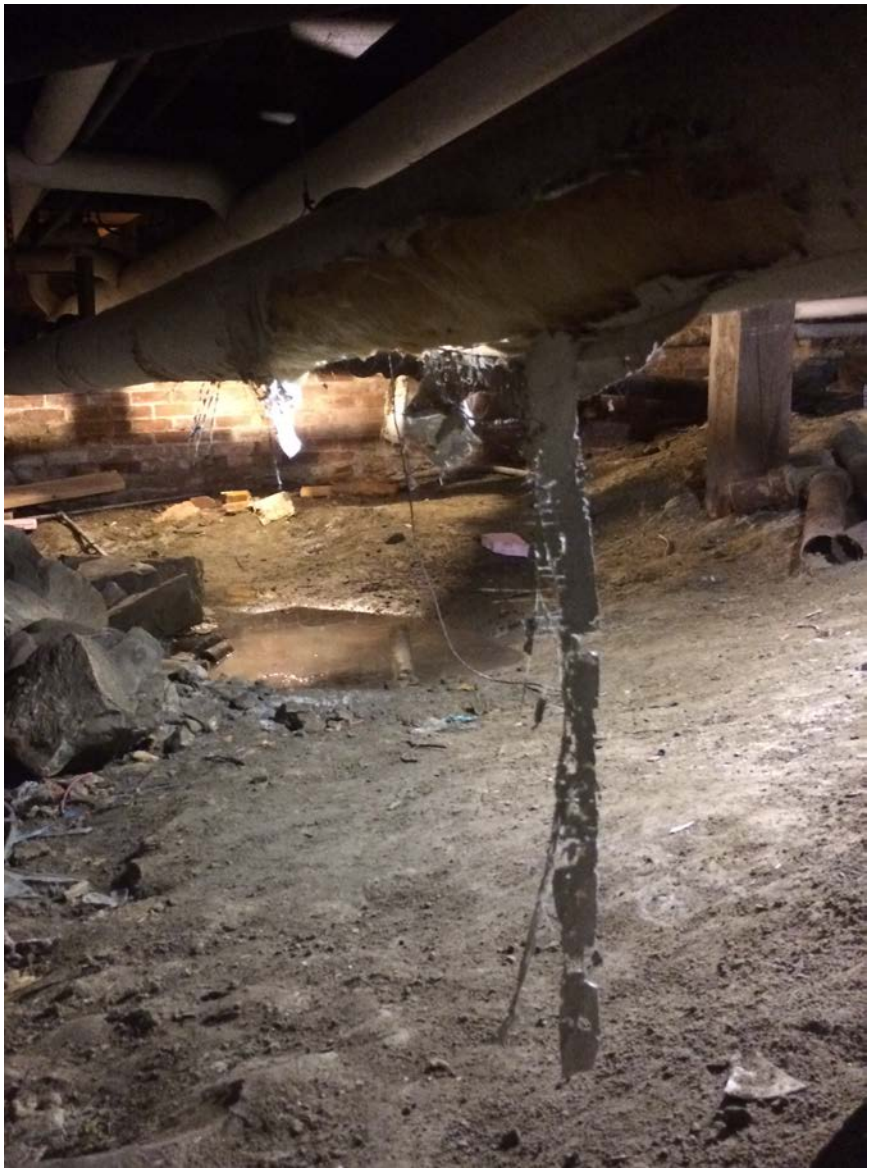
The Log – Existing Conditions – West College Room: West

The Log – Existing Conditions – West College Room: North

The Log – Existing Conditions – West College Room: East



The Log – Existing Conditions – West College Room: East



The Log – Existing Conditions - Basement

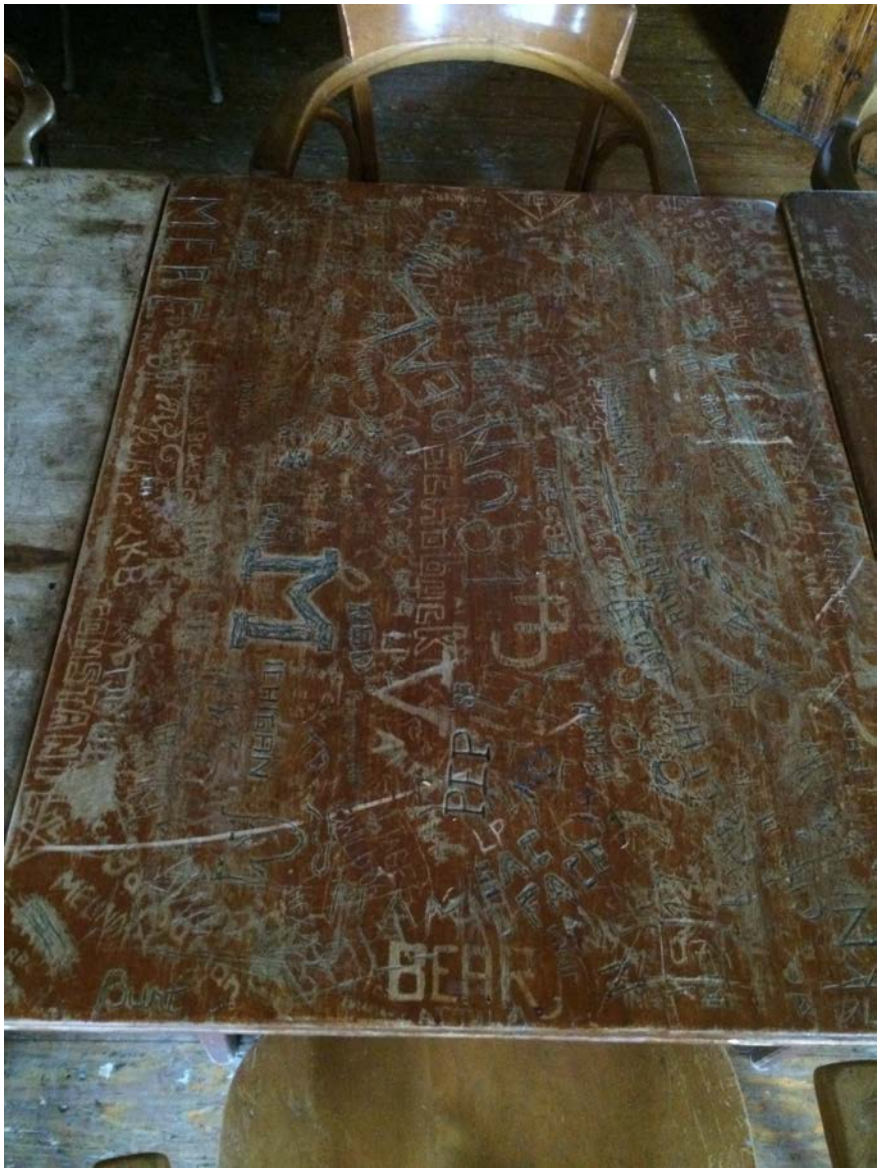
The Log – Existing Conditions - Streetscape

The Log – Existing Conditions – South Porch

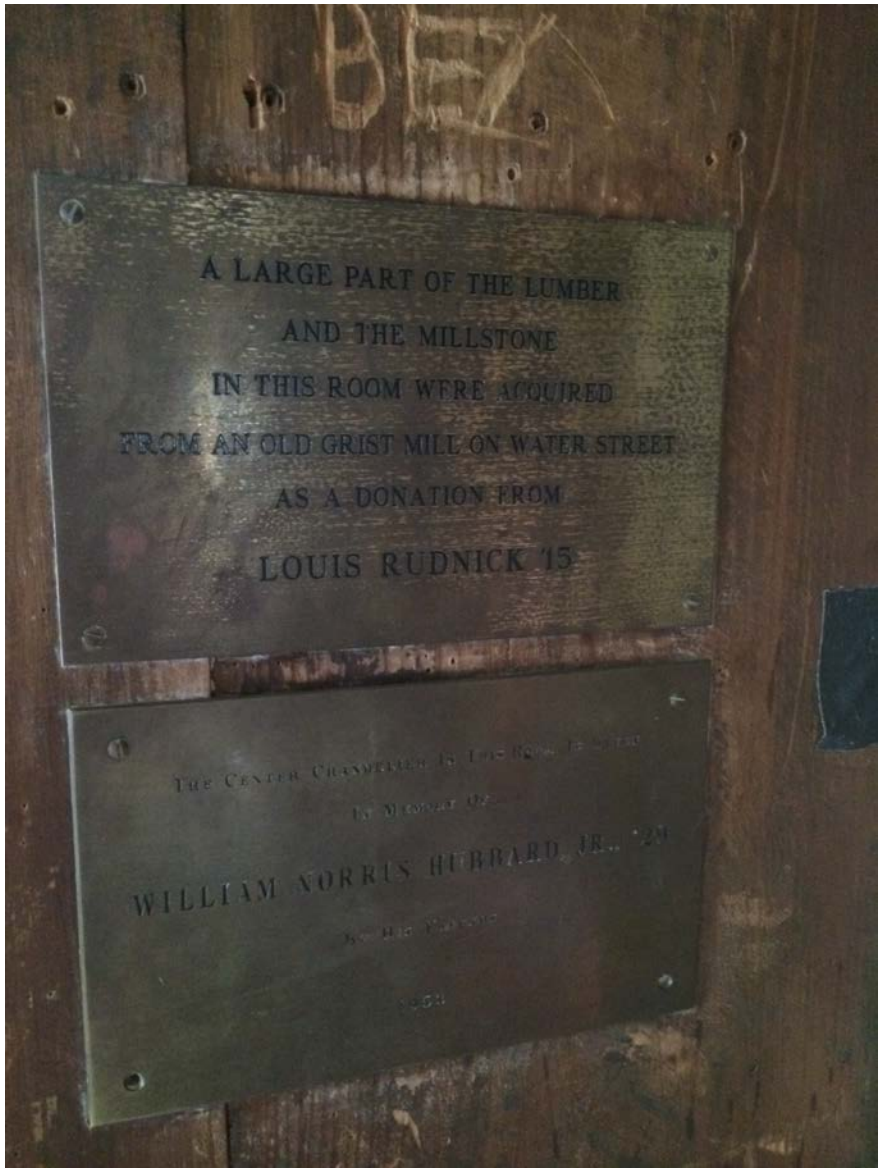
The Log – Existing Conditions - Mural

The Log – Existing Conditions - Ceilings

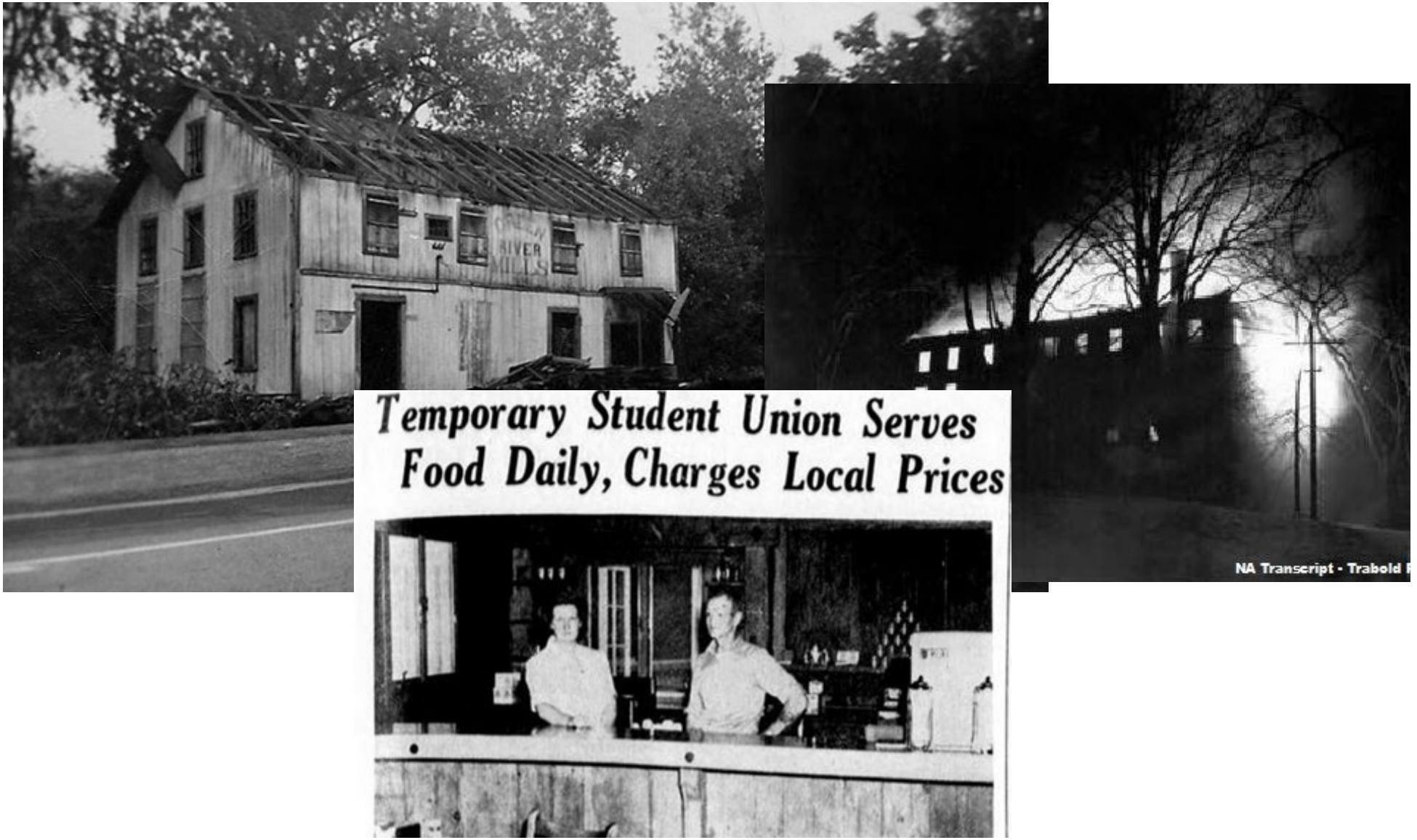
The Log – Existing Conditions – The Club Room



The Log – Existing Conditions - Tables

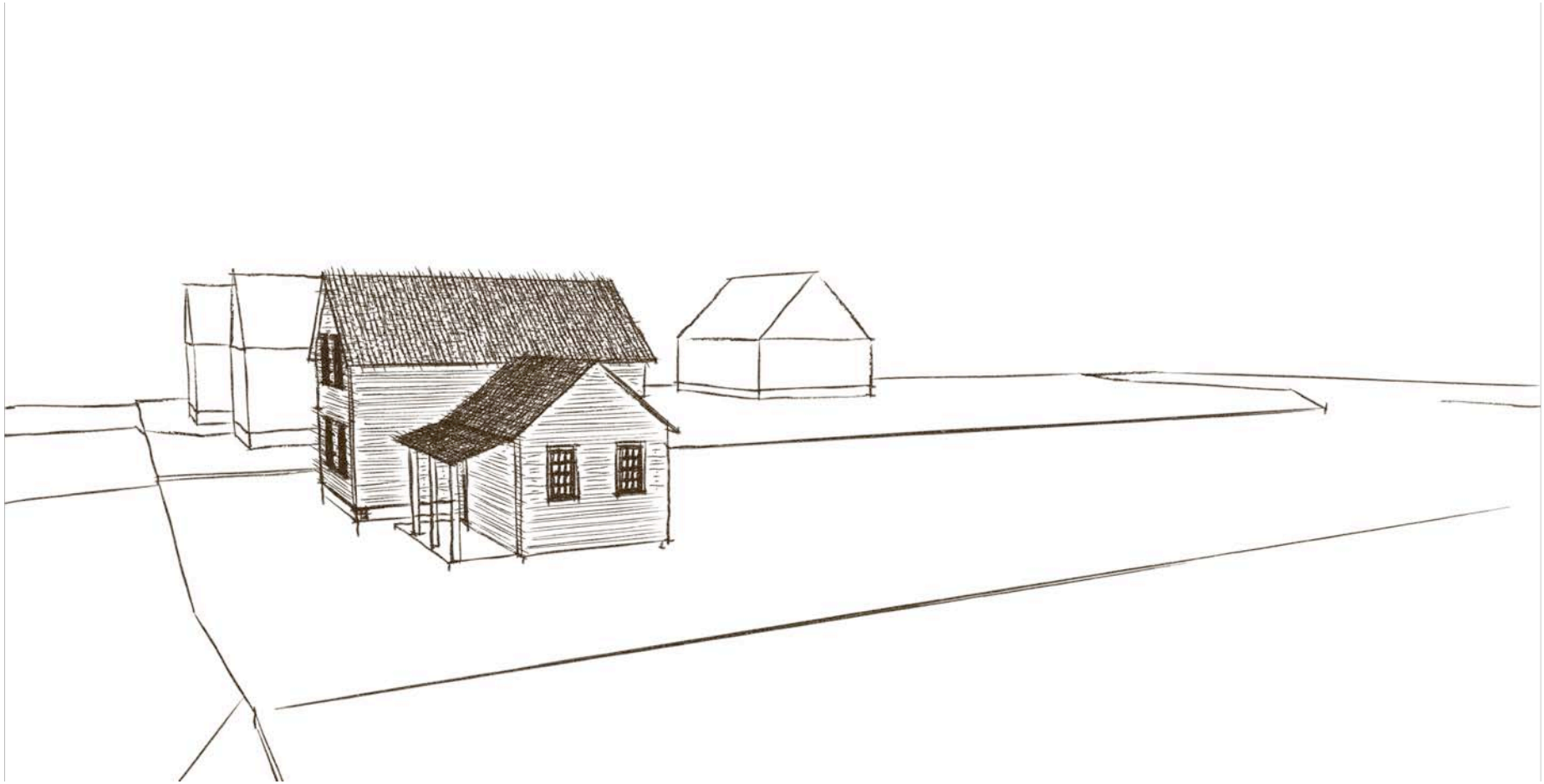


The Log – Existing Conditions - Plaques

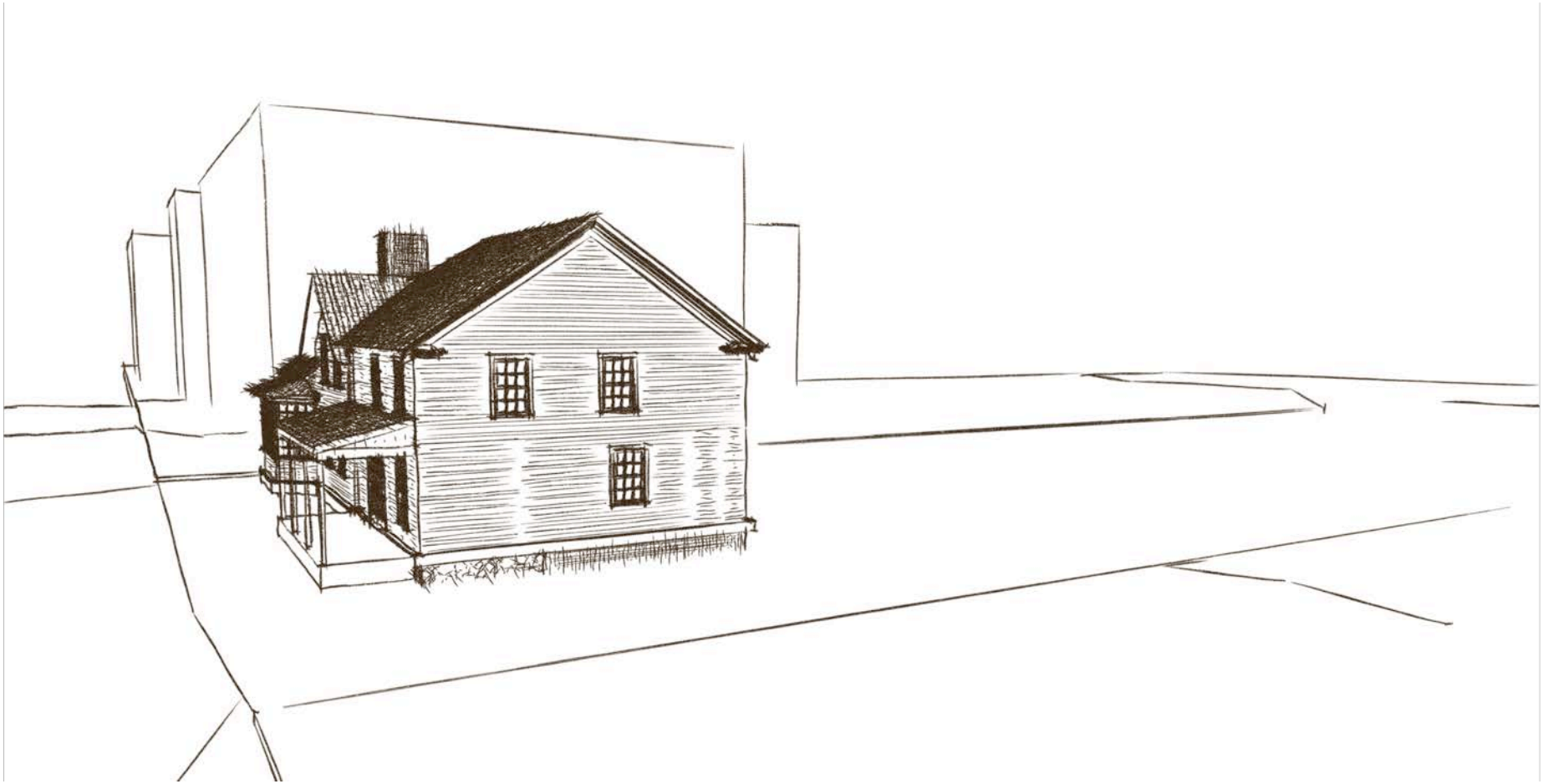


The Log – Existing Conditions - History

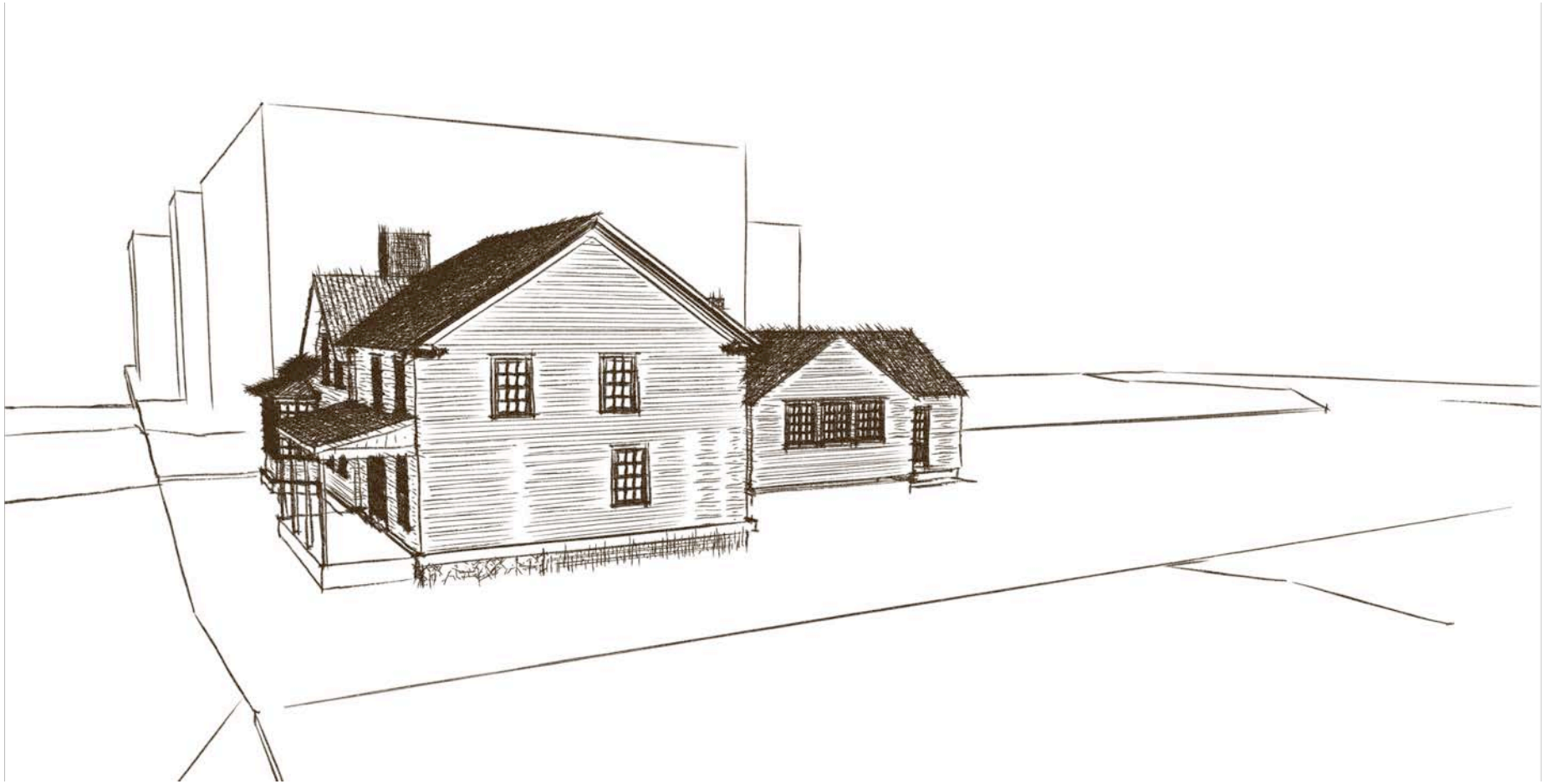
The Log – Existing Conditions - Postcard



The Log – 1800

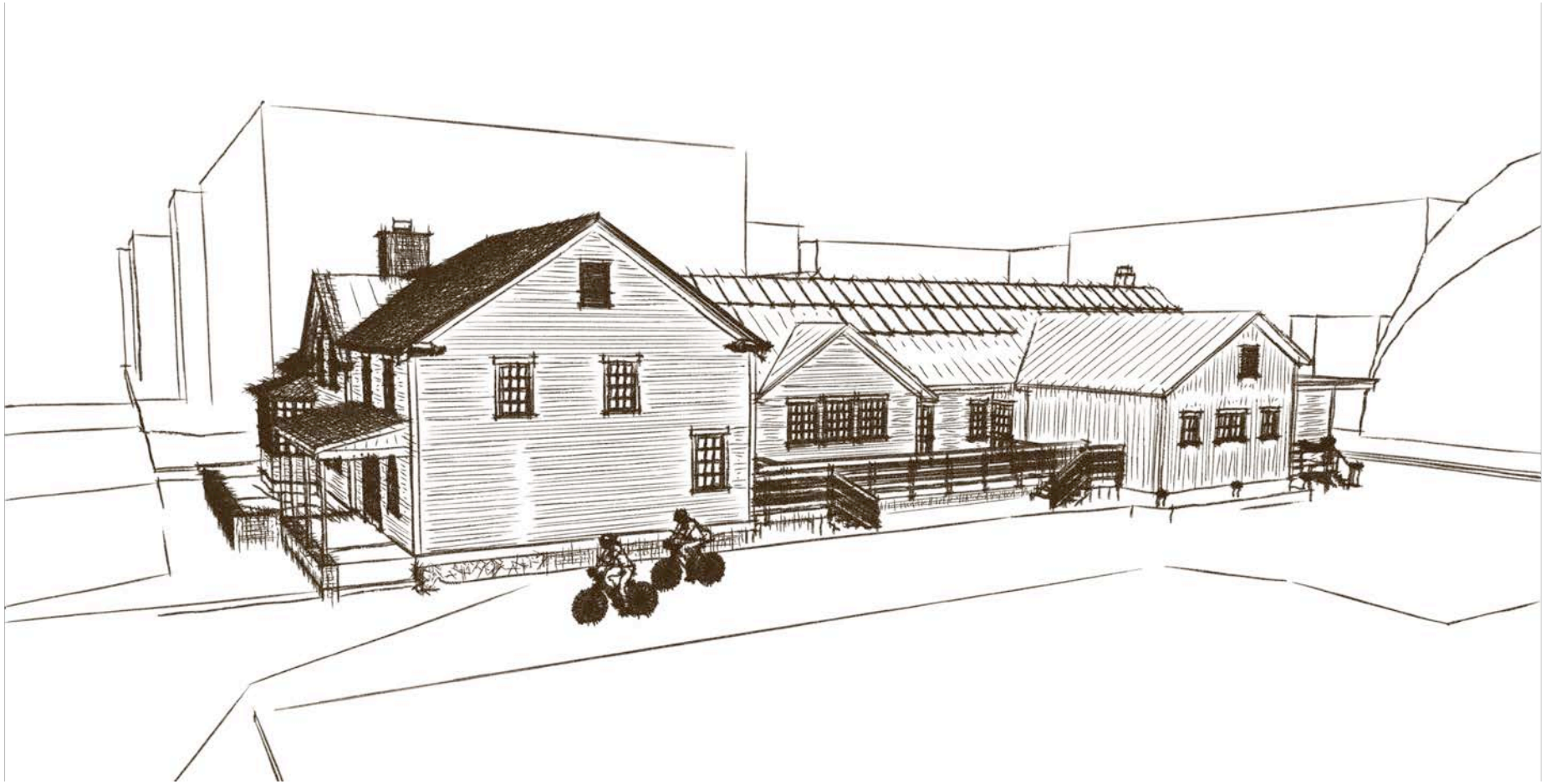


The Log – 1941



The Log – 1946

The Log – 1952



The Log – 2016

PROGRAMMED SPACES	EXISTING SF	NEW SF
PRESERVED HISTORIC SPACE - SEATING & GATHERING	2,595	2,210
RENOVATED HISTORIC SPACE - ENTRY, WELCOME, COATS, SEATING	620	1,125
ACCESSIBLE RESTROOM	75	440
BAR - RELOCATED	200	150
KITCHEN - ADDITION	520	1,175
2nd FLOOR & BASEMENT - EMPLOYEE, MECH, UTILITY, ETC.	710	1,160
TOTAL	4,720	6,260

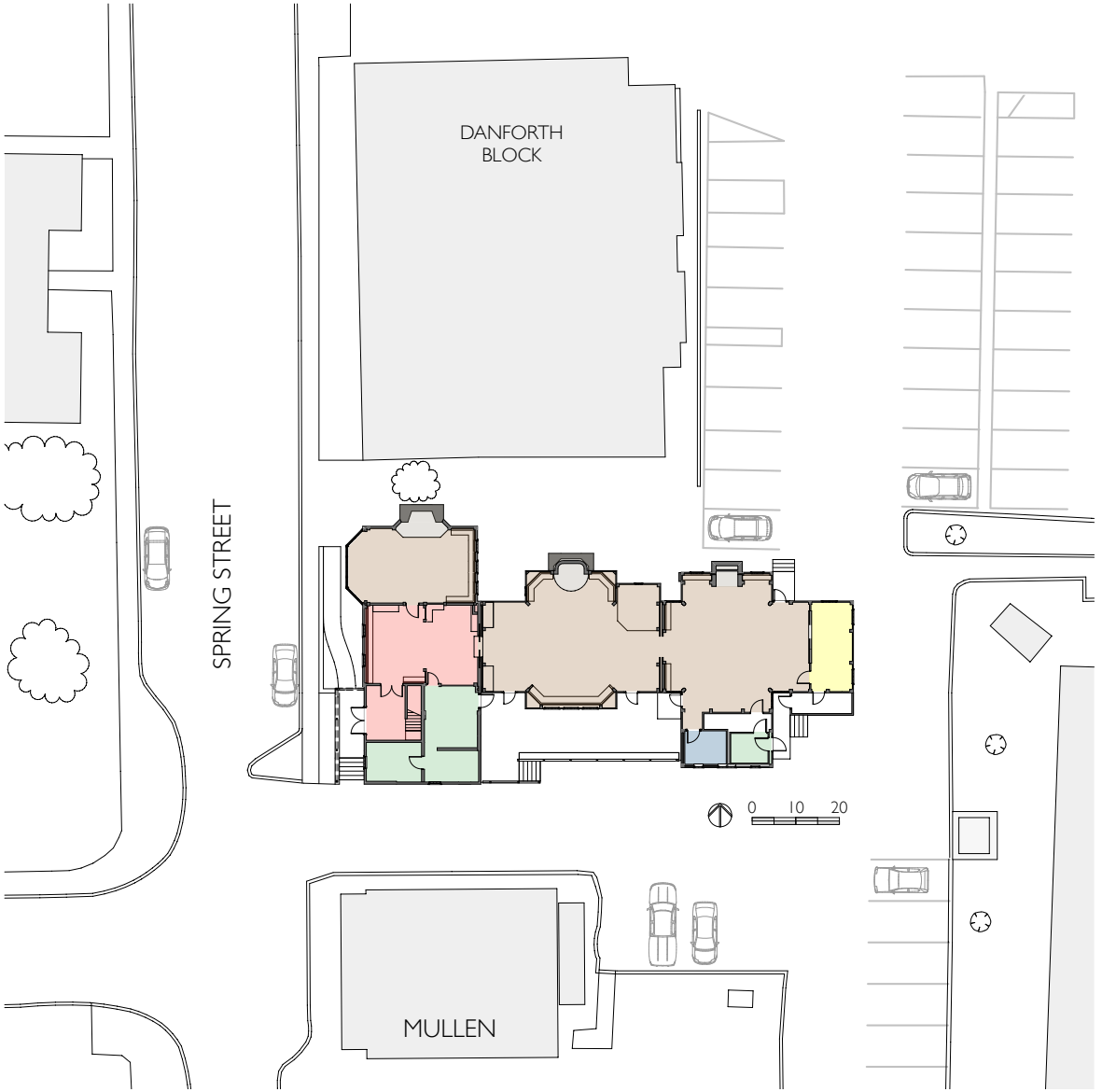
Program Goals

A revitalization project - not a repurposing, intended to enable the Log to serve its constituency into the next century.

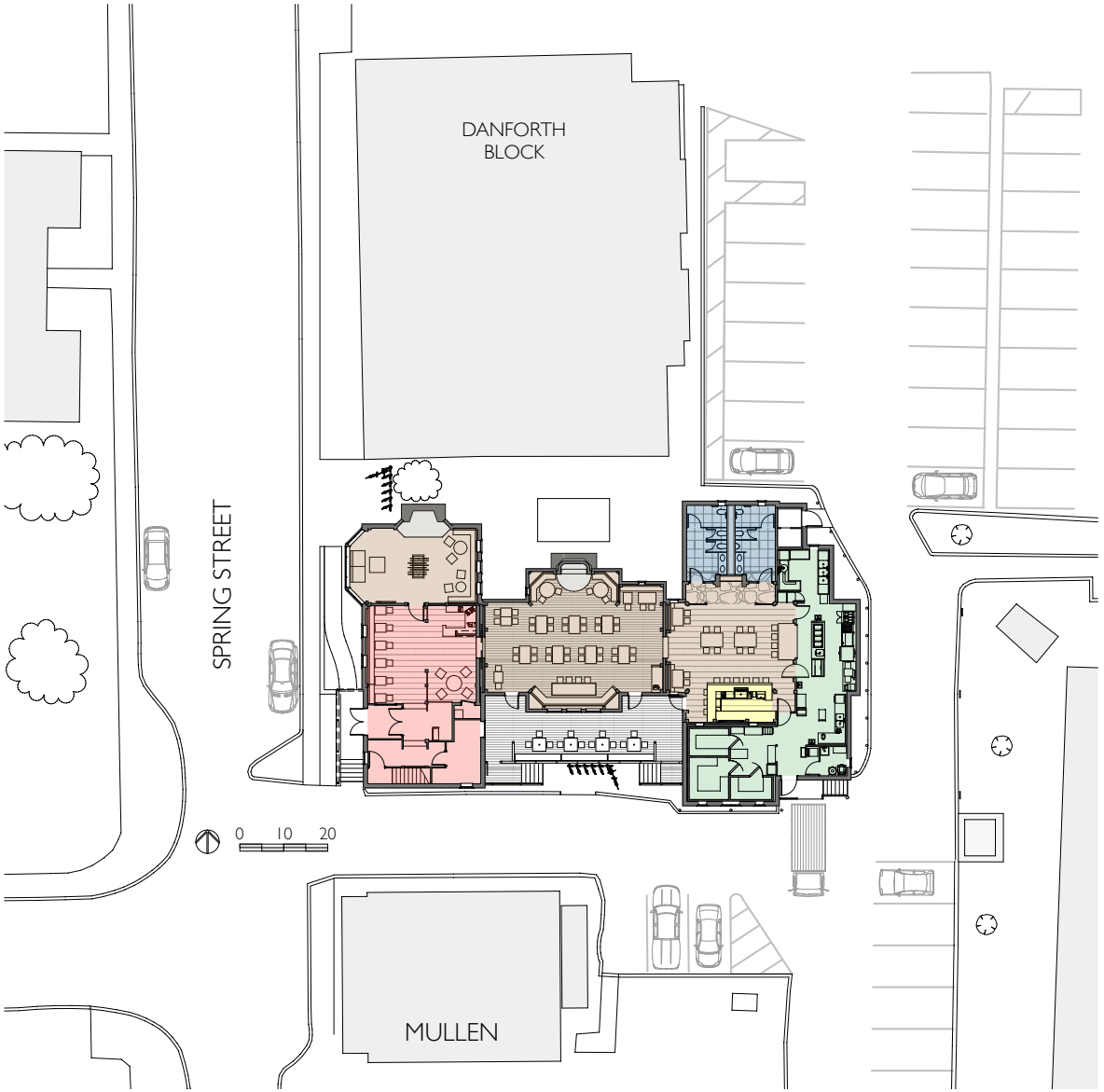
Expansion of the capacity of the building – to open its doors to the public as a place to meet, eat, drink, learn, network, perform, and more.

Conservation of deep sense of history embedded in the structure of the building made ready for a sustainable future and increased engagement.

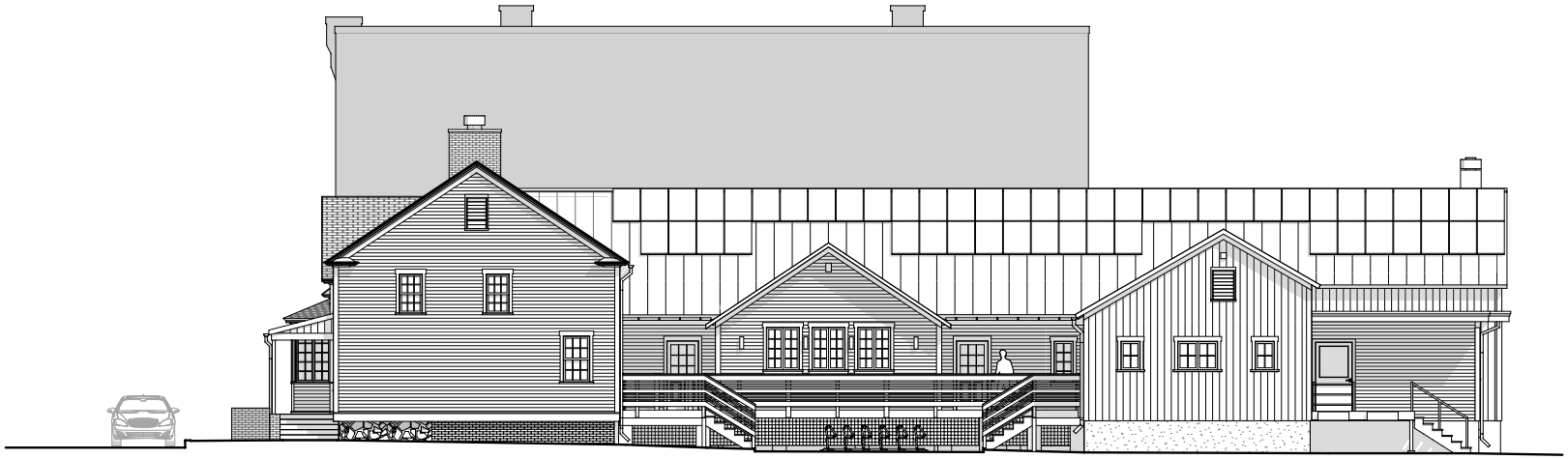
Capacity: 180 persons
Typical Dinner Seating: 80 persons
Typical Buffet Lunch Event: 100 persons



The Log – Program & Plans

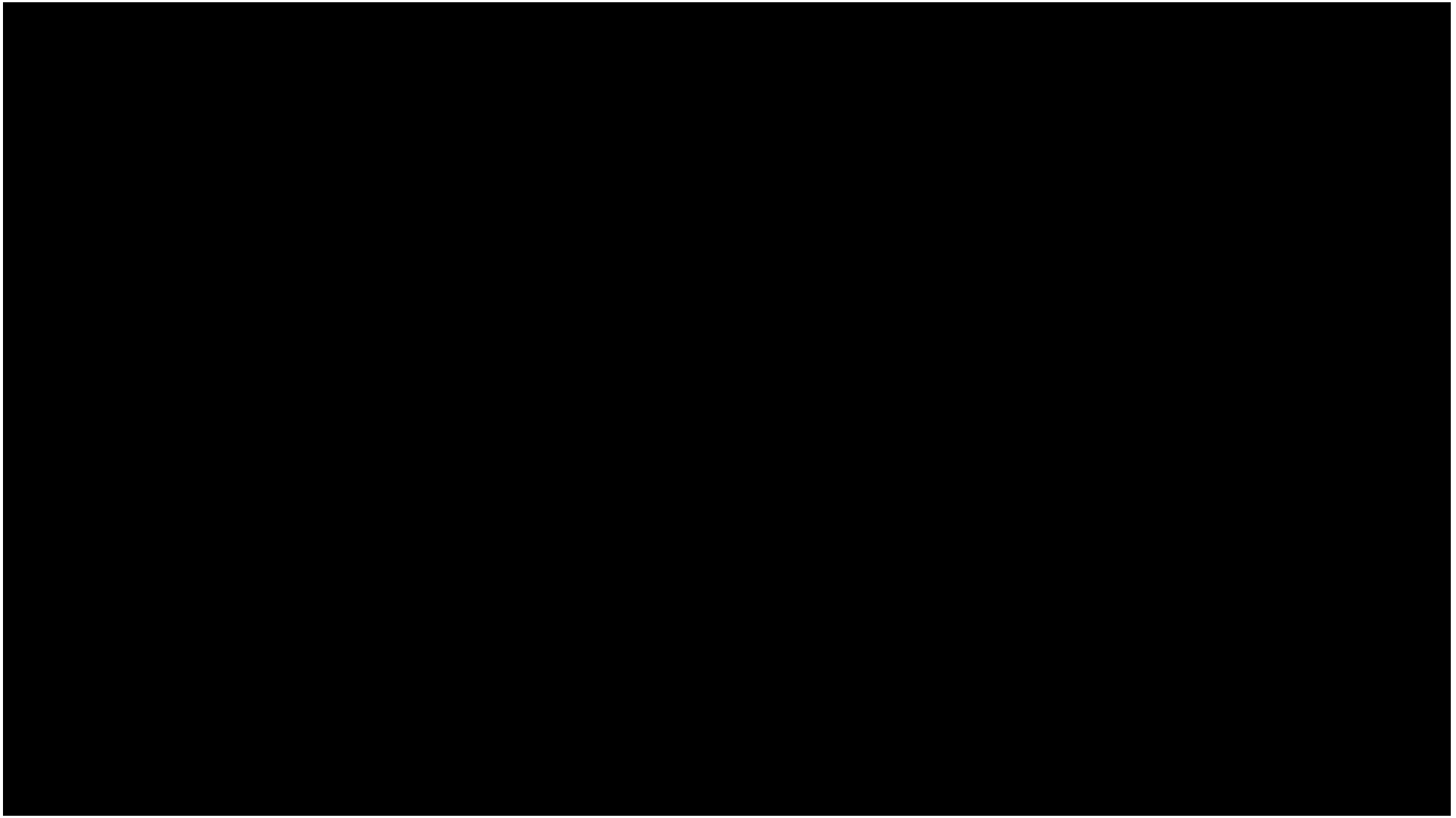


The Log – Program & Plans

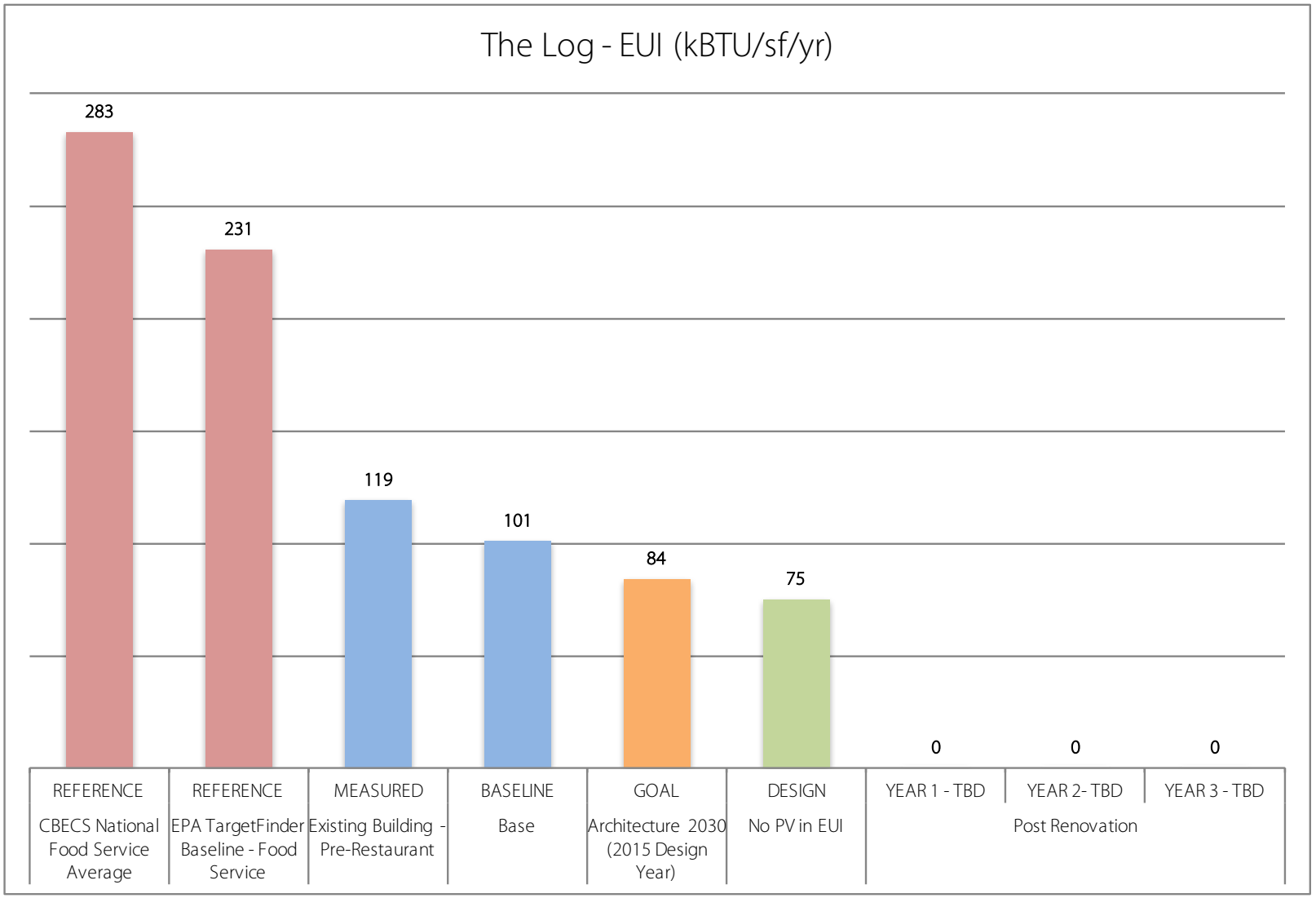


The Log – Program & Plans

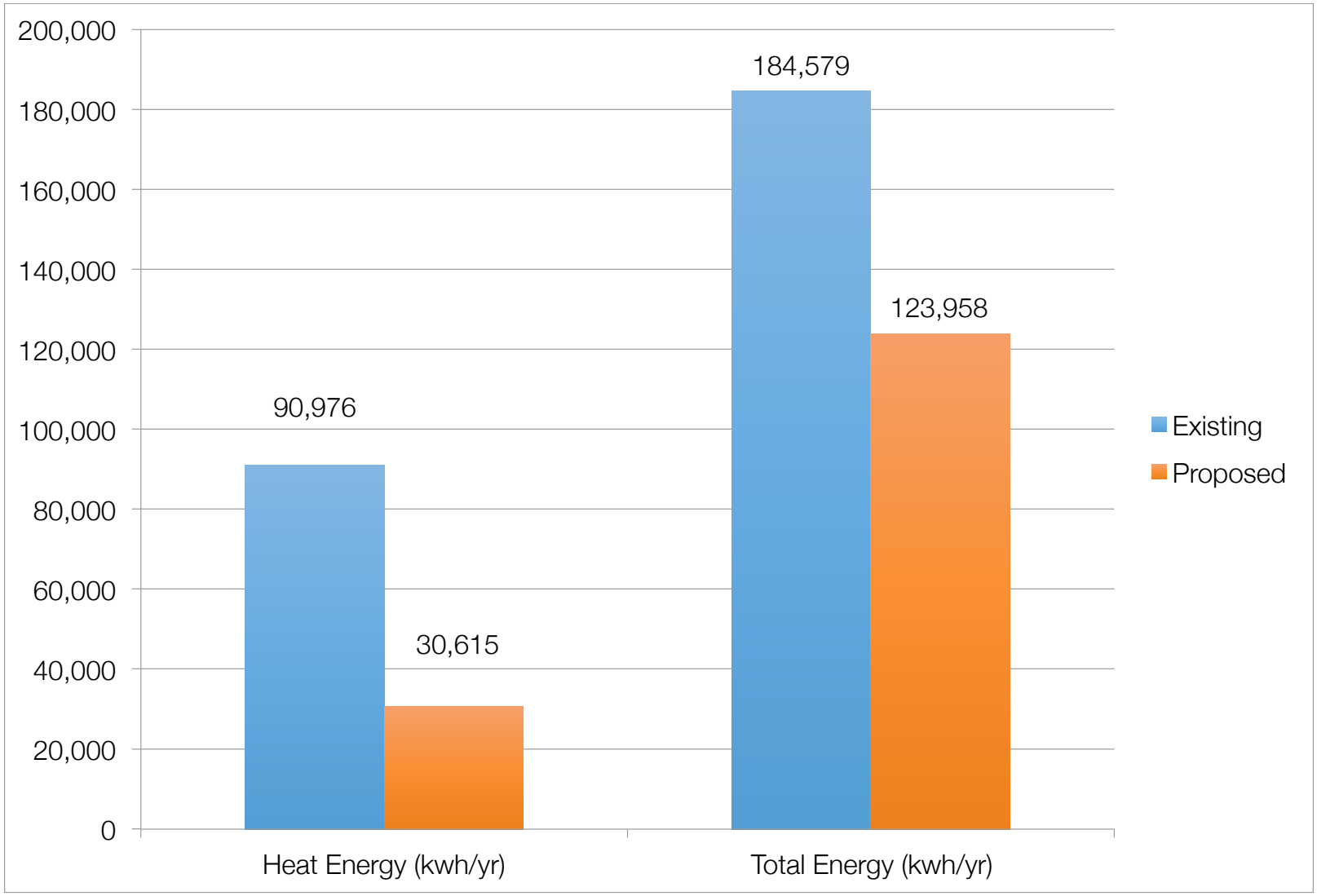
The Log – Program & Plans



The Log – Timelapse



The Log – Energy & Systems – EUI

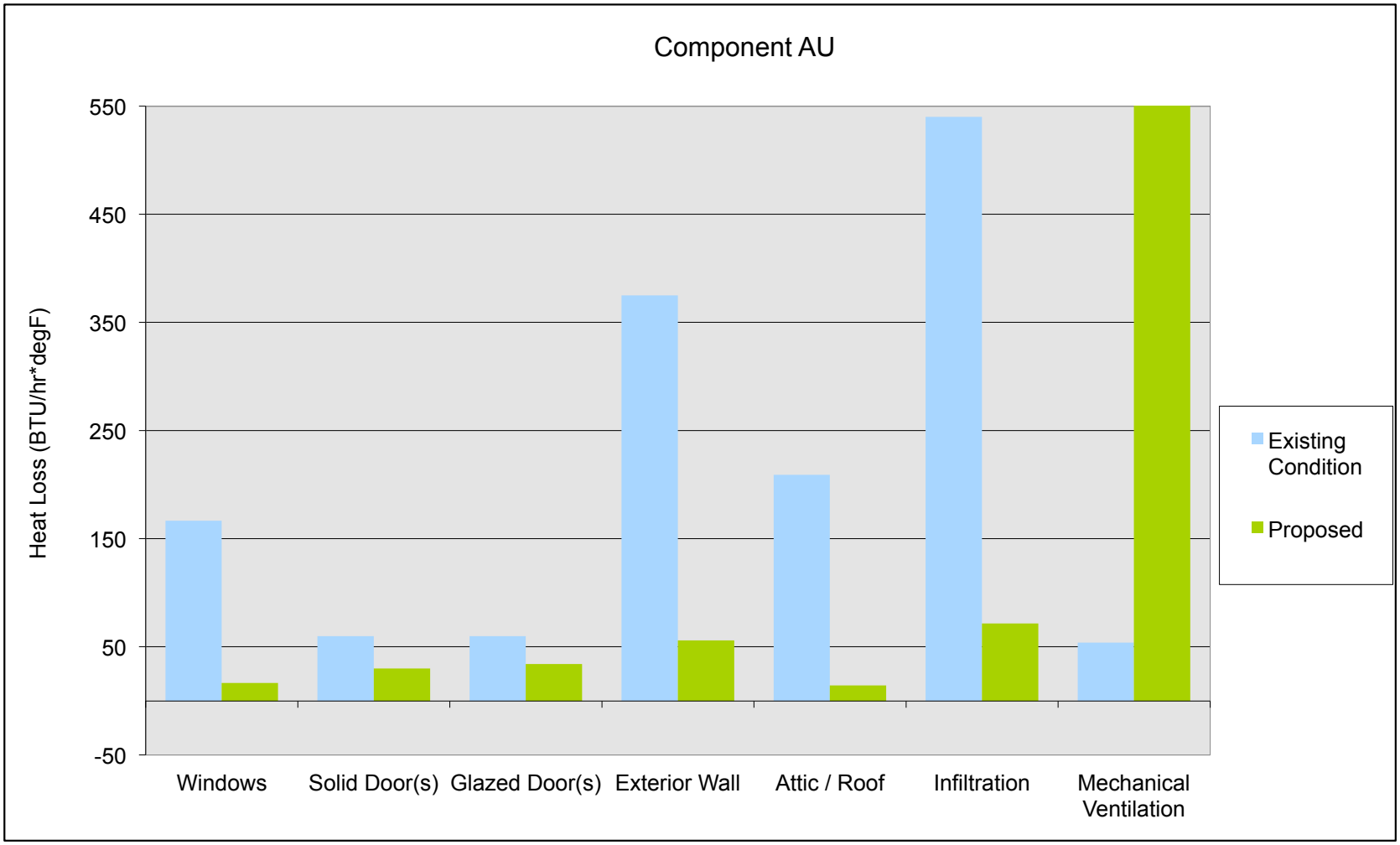


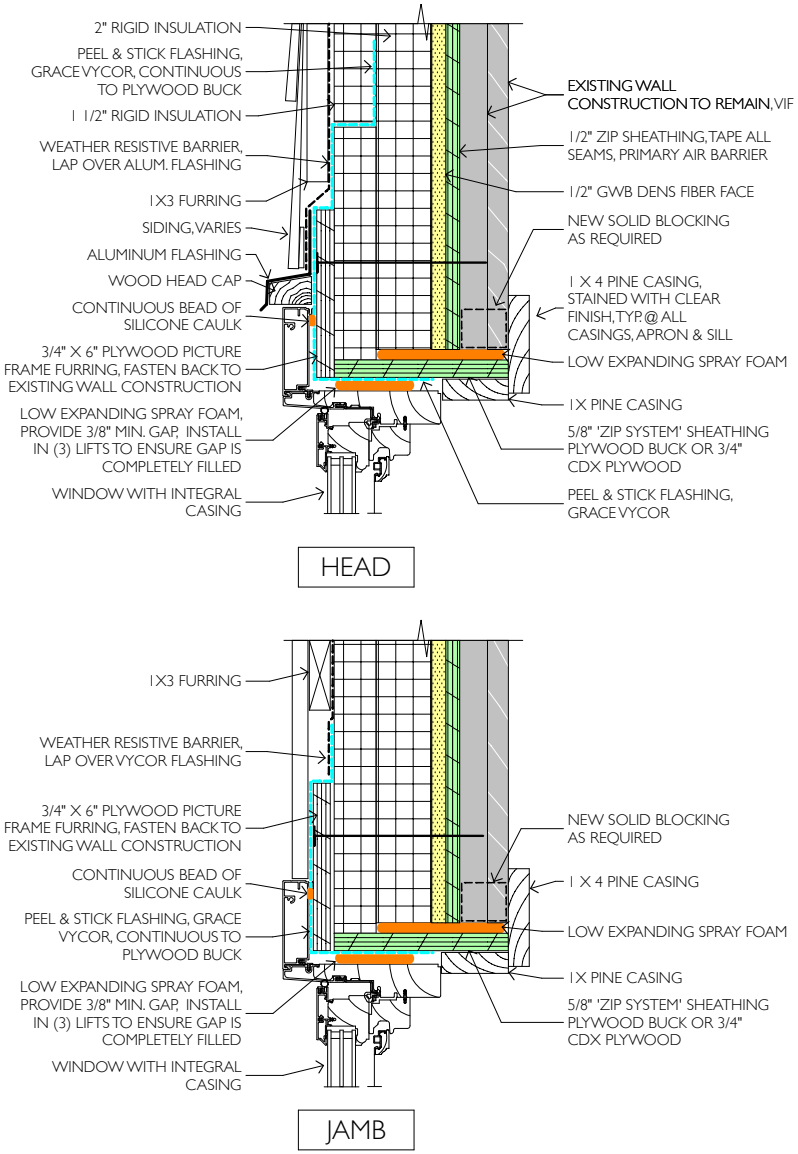
The Log – Energy & Systems – Annual Energy

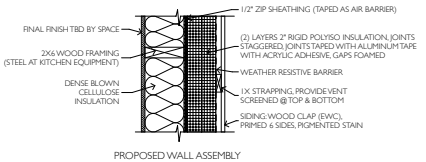
	Steam + Gas only (no cooling)	Steam + Gas + AC	Steam + Gas + ASHP	Air Source Heat Pump (ASHP) only
Space heating	steam to hot water converter, hydronic coil in ductwork for air distribution or hot water baseboard [5]	steam to hot water converter, hydronic coils in ducts, 3 dining zones + kitchen	ASHP indoor units, ducted, 3 dining zones + kitchen zone [6]	ASHP indoor units, ducted, 3 dining zones + kitchen zone [6]
Space cooling	**none**	Split system AC, Dx coil in ductwork, 3 dining zones	ASHP indoor units, ducted, 3 dining zones, available in kitchen	ASHP indoor units, ducted, 3 dining zones, available in kitchen
Kitchen Hood	variable speed demand controlled	variable speed demand controlled	variable speed demand controlled	variable speed demand controlled
Ventilation air	3 ERVs, one per dining area with CO2 demand control [3]	3 ERVs, one per dining area with CO2 demand control [3]	3 ERVs, one per dining area with CO2 demand control [3]	3 ERVs, one per dining area with CO2 demand control [3]
Hood makeup air heat	hydronic coil in ductwork	hydronic coil in ductwork	hydronic coil in ductwork	staged ASHP air-water units with hydronic coil in duct
Makeup air cool	none	outdoor condenser, staged Dx coils in duct	outdoor condenser, staged Dx coils in duct	staged ASHP air-water units with hydronic coil in duct
Service hot water	gas fired condensing water heater with optional hydronic heated hot water tank [6]	gas fired condensing water heater with optional hydronic heated hot water tank [6]	gas fired condensing water heater with optional hydronic heated hot water tank [6]	Heat pump water heater in kitchen with resistance top-up [1] [6]
All renewable possible?	No	No	No	Yes, all electric
Energy Modeling	Steam operates mid-Oct - mid-May; otherwise gas	Steam operates mid-Oct - mid-May; otherwise gas	Steam operates mid-Oct - mid-May; otherwise gas	All thermal energy from HP's except SHW boost

	Steam + Gas only (no cooling)	Steam + Gas + AC	Steam + Gas + ASHP	Air Source Heat Pump (ASHP) only
Advantages	Lower cost, simple system, uses existing steam lines; flexibly switch between steam and gas depending on cost	Typical system, similar to others,; flexibly switch between steam and gas depending on cost	Uses existing steam lines; excellent temperature control and efficiency for cooling; flexibly switch between steam and gas and electric heat pumps, depending on cost; allows	Excellent modulating temperature control for both heating and cooling; allows for all renewable operation
Disadvantages	No air conditioning; fixes building to fossil fuels, vulnerable to gas prices increases in future - steamline maintenance.	Airconditioning not well controlled; fixes building to fossil fuels, vulnerable to gas prices increases in future - steamline maintenance.	Fixes building to fossil fuels, vulnerable to gas prices increases in future; multi systems, but . . .	Makeup air difficult to engineer with heat pumps
All renewable possible?	No	No	Yes: Heat can be all electric by using heat pumps; hot water could be converted to heat pumps	Yes: all electric

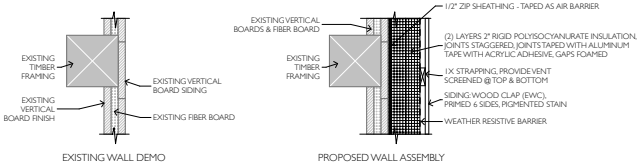
First Year Energy Cost [1]	$11,500	$12,500	$12,200	$13,000
Installed Cost	$$$$$	$$$$$$	$$$$$$$	$$$$$$$$
CO2 emissions, lbs/yr, no PV's	99,000	107,000	105,000	106,000
CO2 emissions, lbs/yr, PV's to offset electricity only	40,000	40,000	40,000	-


Component AU
Heat Loss (BTU/hr*degF)
550
450
350
250
150
50
-50
Windows
Solid Door(s)
Glazed Door(s)
Exterior Wall
Attic / Roof
Infiltration
Mechanical Ventilation
Existing Condition
Proposed

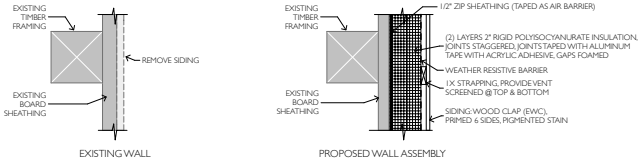

2" RIGID INSULATION
PEEL & STICK FLASHING, GRACE VYCOR, CONTINUOUS TO PLYWOOD BUCK
1 1/2" RIGID INSULATION
WEATHER RESISTIVE BARRIER, LAP OVER ALUM. FLASHING
1X3 FURRING
SIDING, VARIES
ALUMINUM FLASHING
WOOD HEAD CAP
CONTINUOUS BEAD OF SILICONE CAULK
3/4" X 6" PLYWOOD PICTURE FRAME FURRING, FASTEN BACK TO EXISTING WALL CONSTRUCTION
LOW EXPANDING SPRAY FOAM, PROVIDE 3/8" MIN. GAP, INSTALL IN (3) LIFTS TO ENSURE GAP IS COMPLETELY FILLED
WINDOW WITH INTEGRAL CASING
EXISTING WALL CONSTRUCTION TO REMAIN, VIF
1/2" ZIP SHEATHING, TAPE ALL SEAMS, PRIMARY AIR BARRIER
1/2" GWB DENS FIBER FACE
NEW SOLID BLOCKING AS REQUIRED
1 X 4 PINE CASING, STAINED WITH CLEAR FINISH, TYP. @ ALL CASINGS, APRON & SILL
LOW EXPANDING SPRAY FOAM
1X PINE CASING
5/8" 'ZIP SYSTEM' SHEATHING PLYWOOD BUCK OR 3/4" CDX PLYWOOD
PEEL & STICK FLASHING, GRACE VYCOR
HEAD
1X3 FURRING
WEATHER RESISTIVE BARRIER, LAP OVER VYCOR FLASHING
3/4" X 6" PLYWOOD PICTURE FRAME FURRING, FASTEN BACK TO EXISTING WALL CONSTRUCTION
CONTINUOUS BEAD OF SILICONE CAULK
PEEL & STICK FLASHING, GRACE VYCOR, CONTINUOUS TO PLYWOOD BUCK
LOW EXPANDING SPRAY FOAM, PROVIDE 3/8" MIN. GAP, INSTALL IN (3) LIFTS TO ENSURE GAP IS COMPLETELY FILLED
WINDOW WITH INTEGRAL CASING
NEW SOLID BLOCKING AS REQUIRED
1 X 4 PINE CASING
LOW EXPANDING SPRAY FOAM
1X PINE CASING
5/8" 'ZIP SYSTEM' SHEATHING PLYWOOD BUCK OR 3/4" CDX PLYWOOD
JAMB



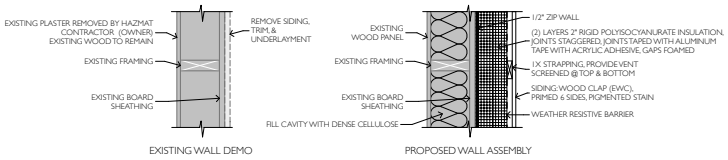
4 WALL ASSEMBLY PLAN SECTION - NEW CONSTRUCTION
SCALE: 1 1/2"= 1'-0"



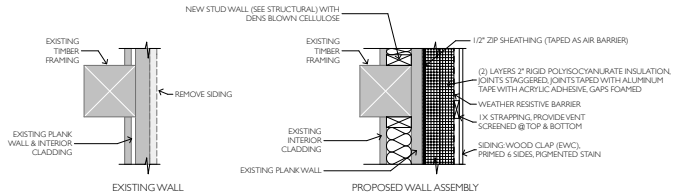
3 WALL ASSEMBLY PLAN SECTION - WEST COLLEGE ROOM
SCALE: 1 1/2"= 1'-0"



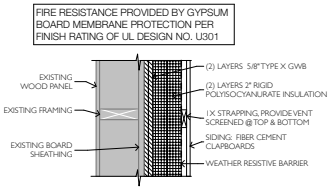
2 WALL ASSEMBLY PLAN SECTION - DODGE ROOM
SCALE: 1 1/2"= 1'-0"



1 WALL ASSEMBLY PLAN SECTION - FRONT BUILDING
SCALE: 1 1/2"= 1'-0"

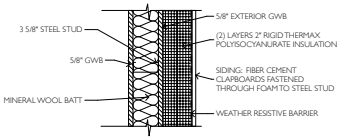


1a WALL ASSEMBLY PLAN SECTION - CLUB ROOM
SCALE: 1 1/2"= 1'-0"



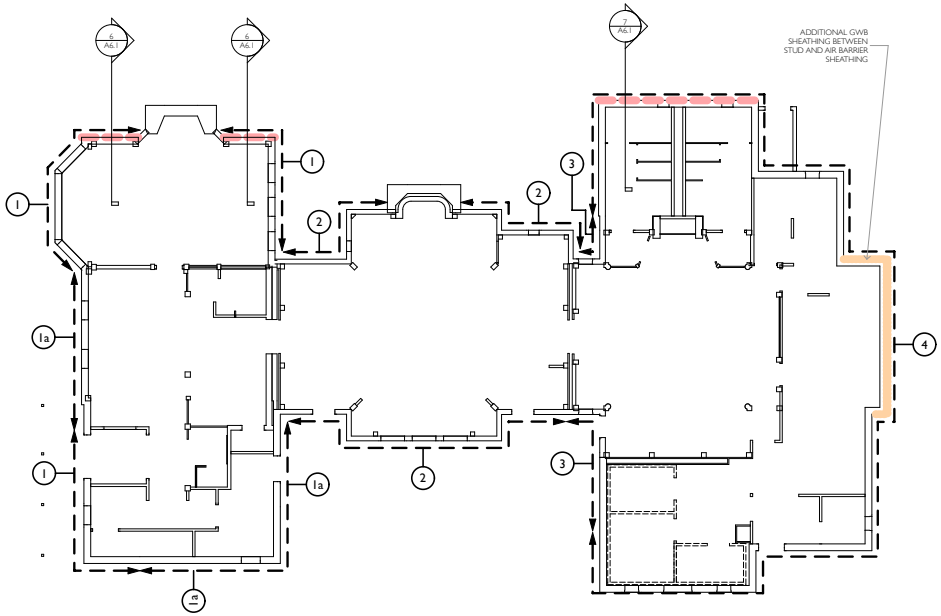
1. Nailheads — Exposed or covered with joint compound.
2. Joints — Exposed joints covered with joint compound and paper tape. Joint compound and paper tape may be omitted when square edge boards are used. As an alternate, nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard with the joints reinforced with paper tape.
3. Nails — 6d cement coated nails 1-7/8 in. long, 0.0915 in. shank diam, 1/4 in. diam heads, and 8d cement coated nails 2-3/8 in. long, 0.113 in. shank diam, 9/32 in. diam heads.
4. Gypsum Board* — 5/8 in. thick, two layers applied either horizontally or vertically. Inner layer attached to studs with the 1-7/8 in. nails spaced 6 in. OC. Outer layer attached to studs over inner layer with the 2-3/8 in. long nails spaced 8 in. OC. Vertical joints located over studs. All joints in face layers staggered with joints in base layers. Joints of each base layer offset with joints of base layer on opposite side.
When used in widths other than 48 in., gypsum board to be installed horizontally.

6 RATED ASSEMBLY - 1
SCALE: 1 1/2"= 1'-0"



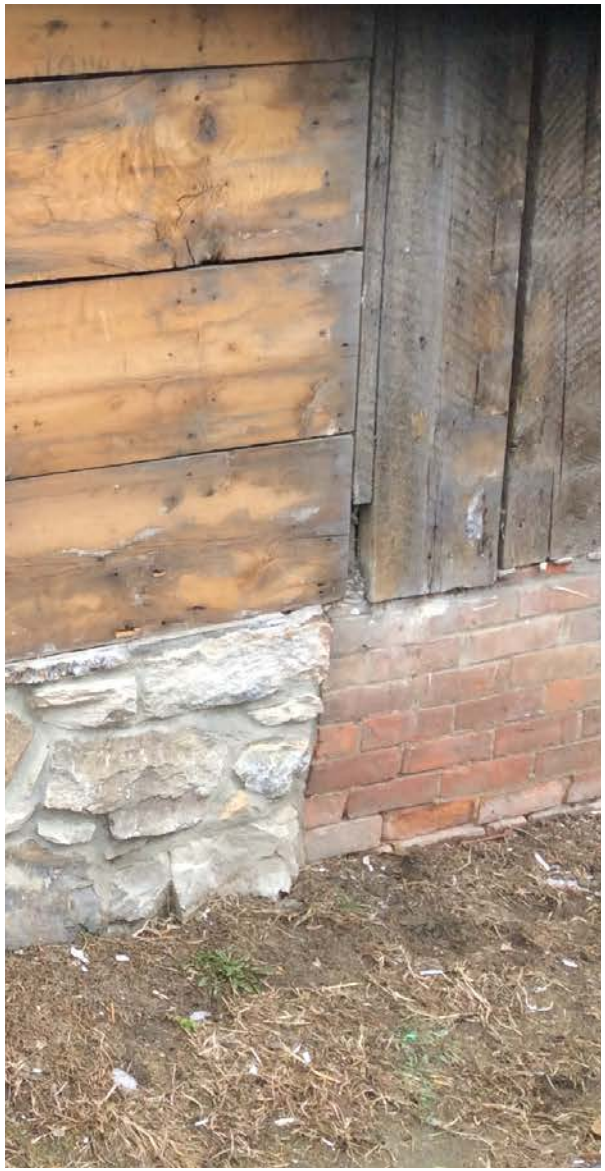
ALL CONNECTIONS AND PRODUCTS PER UL DESIGN No.V454

7 RATED ASSEMBLY -2
SCALE: 1 1/2"= 1'-0"

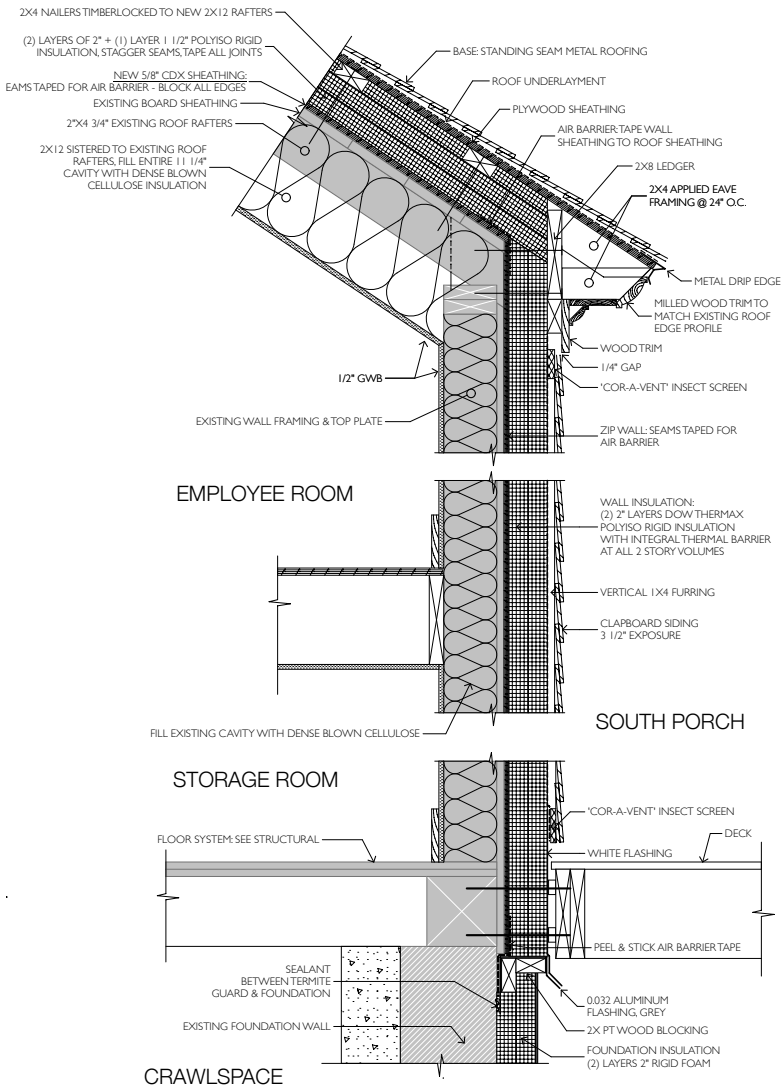


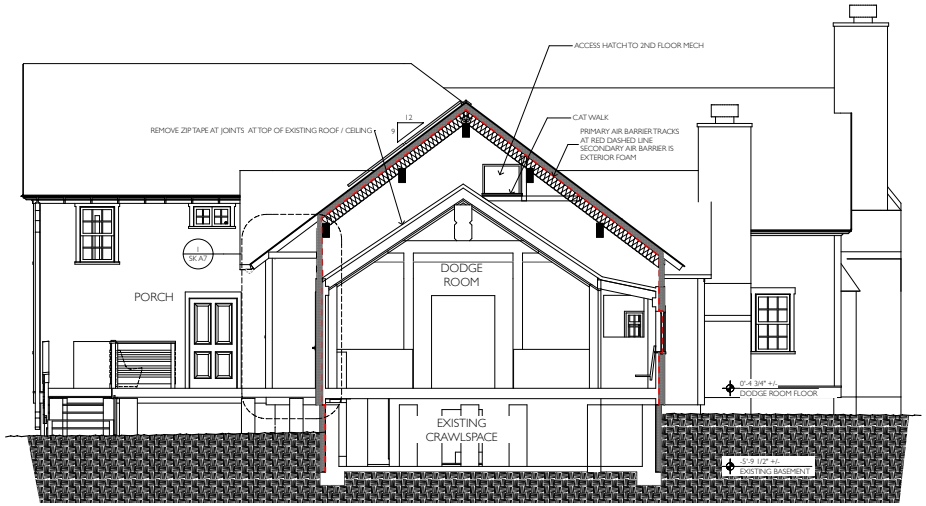
WALL ASSEMBLIES KEY PLAN

The Log – Energy & Systems – Varied Conditions

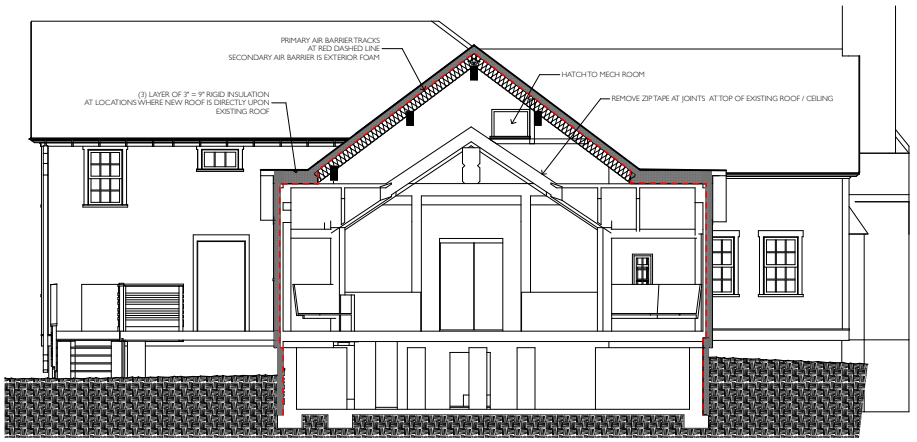



GP
GP

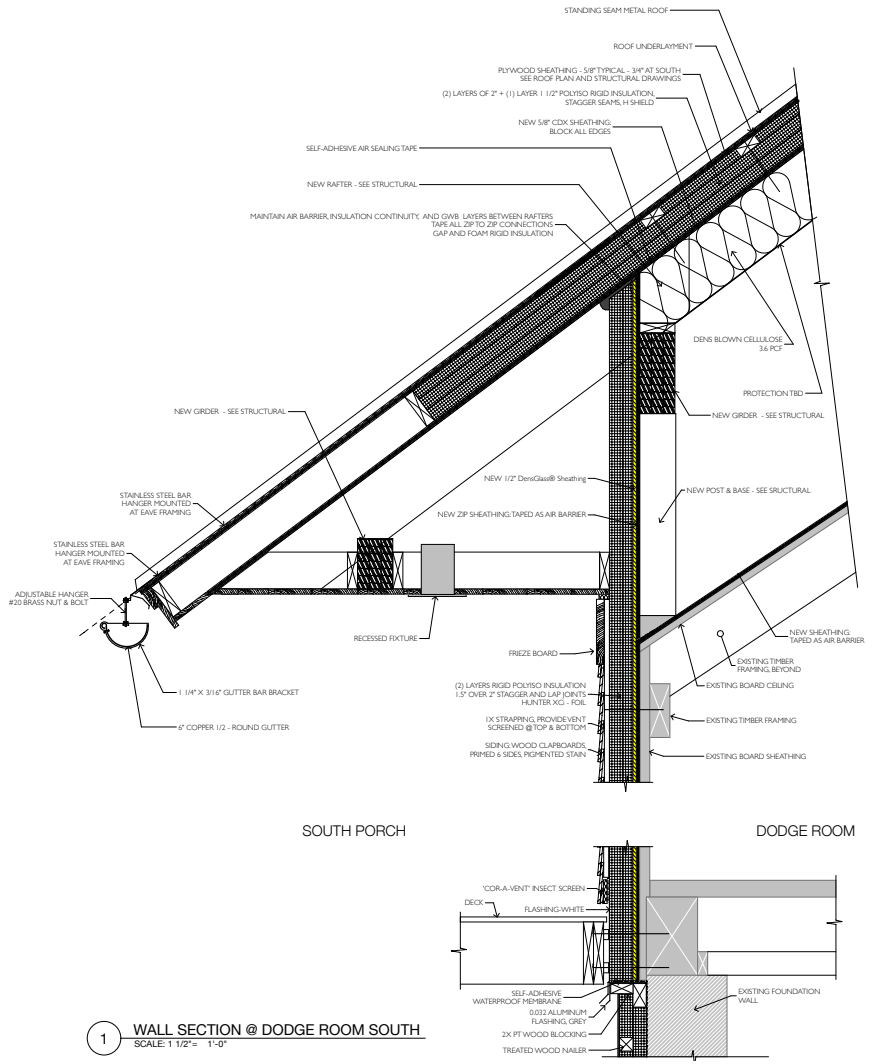

2X4 NAILERS TIMBERLOCKED TO NEW 2X12 RAFTERS
(2) LAYERS OF 2" + (1) LAYER 1 1/2" POLYISO RIGID INSULATION, STAGGER SEAMS, TAPE ALL JOINTS
NEW 5/8" CDX SHEATHING; EAMS TAPED FOR AIR BARRIER - BLOCK ALL EDGES
EXISTING BOARD SHEATHING
2"X4 3/4" EXISTING ROOF RAFTERS
2X12 SISTERED TO EXISTING ROOF RAFTERS, FILL ENTIRE 11 1/4" CAVITY WITH DENSE BLOWN CELLULOSE INSULATION
BASE: STANDING SEAM METAL ROOFING
ROOF UNDERLAYMENT
PLYWOOD SHEATHING
AIR BARRIER: TAPE WALL SHEATHING TO ROOF SHEATHING
2X8 LEDGER
2X4 APPLIED EAVE FRAMING @ 24" O.C.
METAL DRIP EDGE
MILLED WOOD TRIM TO MATCH EXISTING ROOF EDGE PROFILE
WOOD TRIM
1/4" GAP
'COR-A-VENT' INSECT SCREEN
1/2" GWB
EXISTING WALL FRAMING & TOP PLATE
ZIP WALL: SEAMS TAPED FOR AIR BARRIER
EMPLOYEE ROOM
WALL INSULATION: (2) 2" LAYERS DOW THERMAX POLYISO RIGID INSULATION WITH INTEGRAL THERMAL BARRIER AT ALL 2 STORY VOLUMES
VERTICAL 1X4 FURRING
CLAPBOARD SIDING 3 1/2" EXPOSURE
SOUTH PORCH
FILL EXISTING CAVITY WITH DENSE BLOWN CELLULOSE
STORAGE ROOM
'COR-A-VENT' INSECT SCREEN
DECK
FLOOR SYSTEM: SEE STRUCTURAL
WHITE FLASHING
PEEL & STICK AIR BARRIER TAPE
SEALANT BETWEEN TERMITE GUARD & FOUNDATION
0.032 ALUMINUM FLASHING, GREY
EXISTING FOUNDATION WALL
2X PT WOOD BLOCKING
FOUNDATION INSULATION (2) LAYERS 2" RIGID FOAM
CRAWLSPACE



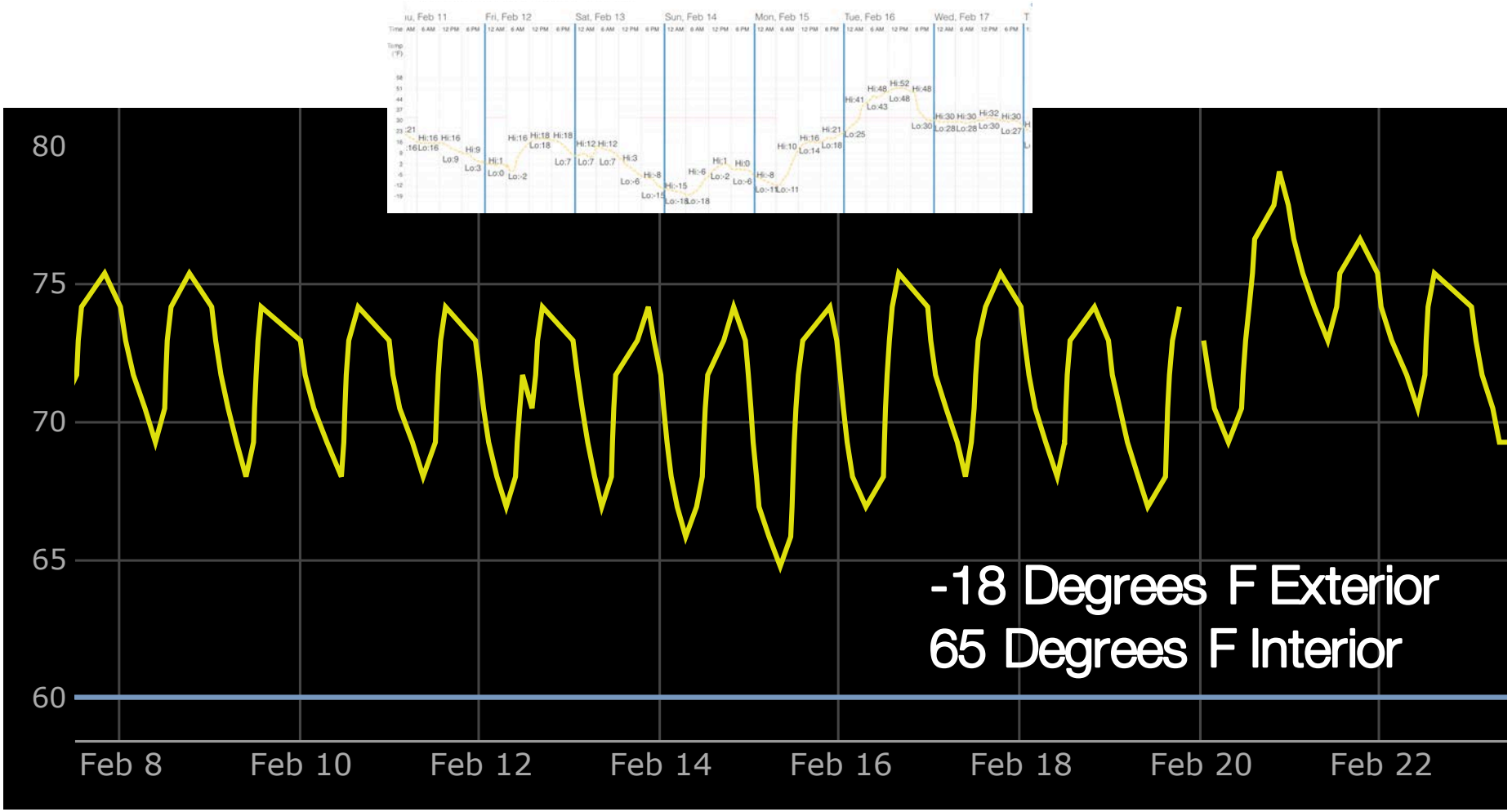
2 SECTION @ DODGE ROOM
SCALE: 1/4" = 1'-0"



3 SECTION @ DODGE ROOM-1
SCALE: 1/4" = 1'-0"



1 WALL SECTION @ DODGE ROOM SOUTH
SCALE: 1 1/2"= 1'-0"


80
75
70
65
60
Feb 8
Feb 10
Feb 12
Feb 14
Feb 16
Feb 18
Feb 20
Feb 22
-18 Degrees F Exterior
65 Degrees F Interior

The Log - Truth Window

The Log – Beer Museum

The Log – Dodge Room

The Log – Dodge Room

The Log – West College Room

The Log – West College Room

The Log - Kitchen

The Log – Spring Street

The Log – Spring Street

The Log – South Porch

Questions?

Thank you.

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