Innovate to Educate

Early Learning Center Goes Passive in a Historic District
LOCATION
INNOVATE TO EDUCATE
Passive House Intro
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CONVINCING THE CLIENT TO DO PASSIVE HOUSE
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**Passive House Benefits**

**Essential factors which influence thermal comfort**

- Air temperature
- Surface temperatures
- Local temperature differences (vertical and horizontal)
- Drafts
- Relative humidity of the air

→ These are all addressed by the Passive House standard
100 CLINTON ST PROPOSED DESIGN

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DEMOLITION

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EXISTING 1ST FLOOR WINDOWS
PROPOSED 1ST FLOOR WINDOWS
PROPOSED 1ST FLOOR WINDOWS

NEW FACEBRICK TO MATCH EXISTING COURSING PATTERN AND PROFILE. MIN 3 COURSES

NEW LINTEL

NEW BRICKMOLD TO MATCH ORIGINAL PROFILE TYPE
- CONTINUOUS LEDGER W/ STRUCTURAL THERMAL BREAK BY FABREEXA TYPE
- 200MM PREP TAPE BY SIGA
- FENTRIM IS 20-100MM
- (15/85) BY SIGA
- 1" RIGID INSULATION

1/2" BLOCKING, FILL SPACING WITH SPRAY FOAM INSULATION

FENTRIM IS 2 75MM BY SIGA
- TRIM AS RED TO CONCEAL AT BRICKMOLD

NEW TILT ONLY OVER FIXED TRIPLE GLAZED WOOD WINDOW

SILL
- SQUAD WD EDGE

PTD RECESSED INSULATED PANEL BY WINDOW MANUFACTURER
- FRAMING AS RED TYP
- 1/2 GWF

1/2" BLOCKING, FILL SPACING WITH SPRAY FOAM INSULATION
- 200MM PREP TAPE BY SIGA
- FENTRIM IS 20-100MM
- (15/85) BY SIGA
- 2" RIGID INSULATION
- FENTRIM IS 2 75MM BY SIGA
- C-JOIST FRAMING

CONTINUOUS LEDGER W/ STRUCTURAL THERMAL

WATERPROOFING MEMBRANE, EXTEND TO TOP OF FIRST FLOOR SLAB TYP
- CONCRETE CURB

PROPOSED 1ST FLOOR WINDOWS
EXISTING 2ND FLOOR WINDOWS
PROPOSED 2ND FLOOR WINDOWS
PROPOSED 2ND FLOOR WINDOWS

EXTC PRECAST CONCRETE HEADER TO BE CAREFULLY REMOVED, SALVAGED, CLEANED AND RESET. NEW LINTEL.

NEW BRICKMOULD TO MATCH EXTC PROFILE TYP. 200MM PREP TAPE BY SIGA FENSTRIP IS 20-100MM (15/85) BY SIGA CORNER BEAD TYP. 1" REED INSULATION.

1/2" BLOCKING, FILL SPACING WITH SPRAY FOAM INSULATION. FENSTRIP IS 2.75MM BY SIGA TRIM AS REED TO CONCEAL AT BRICKMOULD.

NEW TRIPLE GLAZED WOOD SIMULATED DOUBLE HUNG WINDOW.

1" REED INSULATION.

1/2" MARINE GRADE PLYWOOD

BLOCKING AT WINDOW MOUNTING POINTS ONLY - COORDINATE LOCATIONS WITH WINDOW MANUFACTURER. FILL SPACING WITH INSULATION.

1/2" BLOCKING, FILL SPACING WITH SPRAY FOAM INSULATION. CONTINUE Stub EMERALD COAT ALONG TOP OF MASONRY "LEDGE"
68°F

- 1 layer 2" XPS insulation board
- Hydroduct 220 drainage sheet
- Aquarinz-1K waterproofing coating
- 5" concrete slab on grade
- Preprufe 300R Plus waterproofing membrane
- Preprufe tape at roll ends and cut edges typ
- 2 layers 2" XPS insulation board. Seams staggered.
- 6" gravel
- Extg cellar wall and footing
28°F

68°F

CONTINUOUS 2" ROXUL
COMFORTBOARD IS (R-8)

CONTINUOUS Sto EmeraldCoat
VAPOR PERMEABLE MEMBRANE

PARGE COAT
TYPICAL DETAIL OF THERMALLY BROKEN BEAM BEARING ON EXISTING WALL
STEEL INSTALL

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Typical Detail of Thermally Broken Beam Bearing on Existing Wall

Silman
PASSIVE HOUSE BENEFITS FOR THE EARLY LEARNING CENTER

Demand Control Ventilation assures that each class receives the outdoor air that it needs.

Well-designed envelope creates symmetry of local temperature variations (horizontal & vertical).

Room by temperature control and ventilation room control of air temperature satisfies each classes comfort.

Comfortable environment enhances learning.

Well-designed envelope w/ thermal breaks + triple glazed windows at floor slabs eliminates “drafts” from temperature stratification.

Daylight sensors adjust interior fixture levels based on sunlight.

Triple glazed windows improve thermal comfort AND reduce noise from the street.

Well-designed envelope w/ thermal breaks + triple glazed windows at floor slabs eliminates “drafts” from temperature stratification.