CENTER FOR TIMBER STUDY - P.S. 64
350 E 10th Street, New York, NY 10009

100% DD Submission Set

ATIV - ABKST

Architect
Joe Hand
SHoP Architects

Structural Consultant
Amy Harrington
Silman

Mechanical Consultant
Chris Ashton
Buro Happold

Enclosure Consultant
Aaron Davis
GSAPP

Designers
Thiago Lee
Blake Kem
Khadija Tarver
Stephen Zimmerer
Aaron Smolar

ABKST
COMMUNITY DISTRICT 3

NEIGHBORHOOD: ALPHABET CITY

ADDRESS: 350 E 10TH STREET
SIX PROGRAMMATIC VOLUMES BUFFERED BY GARDEN TERRACES AND JUXTAPOSED TO CREATE A DYNAMIC, INTERIOR ATRIUM SPACE
NEW YORK CITY ADA DIAGRAMS AS PER 2009 ICC/ ANSI A117.1

ARCHITECT
Joe Hand
SHoP Architects

STRUCTURAL CONSULTANT
Amy Harrington
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MECHANICAL CONSULTANT
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ENCLOSURE CONSULTANT
Aaron Davis
GSAPP

DESIGNERS
Thiago Lee
Blake Kem
Khadija Tarver
Stephen Zimmerer
Aaron Smolar

COMMUNICATION ELEMENTS TACTILE SIGNS

ADA NOTES
1. PROVIDE ACCESSIBLE MEANS OF EGRESS COMPLIANT WITH ICCANSI A117.1 CODE
2. ALL TACTILE SIGNAGIES TO BE MOUNTED AT 60" A.F.F. ON THE LATCH SIDE OF THE DOOR

ARCHITECTURAL NOTES AND ADA DIAGRAMS

PROJECT NUMBER: 21001
DATE: Dec. 17, 2021
SCALE: NTS
Site Plan

Architect: Joe Hand
SHoP Architects

Structural Consultant: Amy Harrington
Silman

Mechanical Consultant: Chris Ashton
Buro Happold

Enclosure Consultant: Aaron Davis
GSAPP

Designers: Thiago Lee, Blake Kem, Khadija Tarver, Stephen Zimmerer, Aaron Smolar

Scale: 1/32" = 1'-0"

Project Number: A002

Date: 01/32/2021
Floor Plans - Level 2

Architect
Joe Hand
SHoP Architects

Structural Consultant
Amy Harrington
Silman

Mechanical Consultant
Chris Ashton
Buro Happold

Enclosure Consultant
Aaron Davis
GSAPP

Designers
Thiago Lee
Blake Kem
Khadija Tarver
Stephen Zimmerer
Aaron Smolar

Scale
3/32" = 1'-0"

Date
Dec. 17, 2021

Revisions

21001

A102
**Floor, Ceiling, and Roof Types**

**Typical Roof Terrace Detail**
- 12" x 12" GLULAM COLUMN
- 8 3/4" GLULAM BEAM
- 12" x 12" GLULAM COLUMN
- 6 7/8" THICK CLT FLOOR SLABS
- APPROX. 1" ACOUSTIC MAT PRODUCT
- 2" GYPCRETE TOPPING
- FINISHED FLOORING
- SLATTED WOOD MECHANICAL SCREEN (2x6s W/ BIRCH VENEER)
- MECHANICAL ZONE
- 3" MINERAL WOOL (TYP.)
- STONE COPING CAP
- AIR VAPOUR BARRIER (AVB)
- WALL TO FLOOR BRACKET
- INTEGRAL SLAB EDGE COVER
- PAINTED ALUMINUM, DARK GREY
- 8 3/4" GLULAM BEAM
- 12" x 12" GLULAM COLUMN
- TERRACE GUARDRAIL
- 3" MINERAL WOOL (TYP.)
- METAL FLASHING
- HORIZ. TRANSOM MULLION @ WOOD SCREEN
- DOUBLE-GLAZED IGU (TYP.)
- BACKER ROD AND SEALANT
- VERTICAL MULLION BEYOND (TYP.)
- 3" HORIZONTAL Z-GIRT
- 3" HORIZONTAL Z-GIRT
- BEDDING SAND
- CONCRETE PAVERS
- SLATTED WOOD MECHANICAL SCREEN (2x6s W/ BIRCH VENEER)
- MECHANICAL ZONE
- 8 3/4" GLULAM BEAM
- 5-PLY 6 7/8" THICK CLT FLOOR PANEL
- APPROX. 1" ACOUSTIC MAT PRODUCT
- 2" CONCRETE TOPPING
- 4" POLYISOCARBONATE
- DOUBLE-GLAZED IGU (TYP.)
- DRAIN AND GUTTER
- WINDOW SILL RECEPTOR FRAME
- 5-PLY 6 7/8" THICK CLT FLOOR PANEL
- APPROX. 1" ACOUSTIC MAT PRODUCT
- 2" CONCRETE TOPPING
- 4" POLYISOCARBONATE
- DOUBLE-GLAZED IGU (TYP.)
- DRAIN AND GUTTER
- WINDOW SILL RECEPTOR FRAME

**Typical Floor to Floor Detail**
- SCALE: 1 1/2" = 1'-0"
- ENGINEERED SOIL W/ PLANTING
- FILTER FABRIC
- RESERVOIR LAYER
- MOISTURE RETENTION LAYER
- AERATION LAYER
- DRAINAGE LAYER
- ROOT BARRIER
- MEMBRANE PROTECTION
- GREEN ROOF MEMBRANE
- TWO (2) LAYERS 3" FOIL-FACED POLYISOCYANURATE
- STAGGER JOINTS
- WINDOW SILL RECEPTOR FRAME
- 5-PLY 6 7/8" THICK CLT FLOOR PANEL
- APPROX. 1" ACOUSTIC MAT PRODUCT
- 2" CONCRETE TOPPING
- 4" POLYISOCARBONATE
- DOUBLE-GLAZED IGU (TYP.)
- DRAIN AND GUTTER
- WINDOW SILL RECEPTOR FRAME
- 5-PLY 6 7/8" THICK CLT FLOOR PANEL
- APPROX. 1" ACOUSTIC MAT PRODUCT
- 2" CONCRETE TOPPING
- 4" POLYISOCARBONATE
- DOUBLE-GLAZED IGU (TYP.)
- DRAIN AND GUTTER
- WINDOW SILL RECEPTOR FRAME

**GSAPP**

**Designers**
- Thiago Lee
- Blake Kem
- Khadija Tarver
- Stephen Zimmerer
- Aaron Smolar

**Structural Consultant**
- Amy Harrington
- Silman

**Mechanical Consultant**
- Chris Ashton
- Buro Happold

**Enclosure Consultant**
- Aaron Davis
- GSAPP

**Architect**
- Joe Hand
- SHoP Architects

**Scale**
- 1/2" = 1'-0"
**Detail - Ext. Wall - 2 Hour (C1)**

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

- Two (2) layers 5/8" GYP. BRD.
- 4 1/8" 3-PLY CLT WALL PANEL

**Detail - Rated Wall - 1 Hour (A2)**

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

- Three (3) layers 5/8" GYP. BRD.
- 3 1/2" MINERAL WOOL

**Detail - Rated Wall - 2 Hour (A1)**

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

- Three (3) layers 5/8" GYP. BRD.
- 4 3/4" CLT WALL PANEL

**Detail - Rated Wall - 4 Hour (C3)**

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

- Two (2) layers 5/8" GYP. BRD.
- 10" REINFORCED CONCRETE SHEAR WALL

**Detail - Rated Wall - 4 Hour (C5)**

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

- Two (2) layers 5/8" GYP. BRD.
- 3 1/2" MINERAL WOOL
- 3 5/8" LIGHT GAUGE METAL STUD

**Detail - Rated Wall - 4 Hour (C4)**

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

- One (1) layer 5/8" GYP. BRD.
- 3 1/2" MINERAL WOOL

**Detail - Shear Wall - 4 Hour (C5)**

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

- Two (2) layers 5/8" GYP. BRD.
- 10" REINFORCED CONCRETE SHEAR WALL

**Detail - Shear Wall - 4 Hour (C4)**

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

- Two (2) layers 5/8" GYP. BRD.
- 4" AIR GAP

**Detail - Ext. Wall - 2 Hour (C3)**

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

- Two (2) layers 5/8" GYP. BRD.
- 3 1/2" MINERAL WOOL

**Detail - Ext. Wall - 2 Hour (C2)**

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

- Two (2) layers 5/8" GYP. BRD.
- 4" AIR GAP

GSAPP

**Rated Wall Sections**

Project number: 21001

Date: Dec. 17, 2021

Scale: 1 1/2" = 1'-0"
5" THICK CLT FLOOR SLABS (TYPICAL MODULE: 15' x 0' x 30' x 0')

75' CLEAR SPAN OPEN WEB GLULAM TRUSSES W/ STEEL PLATE AND BOLT CONNECTIONS

5 3-DIMENSIONAL AXONOMETRIC VIEW TO SHOW SLAB TO WALL CONNECTIONS

12" REINFORCED CONCRETE SHEAR CORE WALL PROVIDES LATERAL STABILITY

40' CLEAR SPAN GLULAM BEAMS (8 3/4" x 48")

TYPICAL 12" x 12" GLULAM COLUMNS BUTTRESSING SIDEYARD SHARED WALLS

6" CLEAR SPAN GLULAM BEAMS (3 5/8" x 3 11/16")
Structural Details

- Trusses

12" x 18" GLULAM BEAM

TYPICAL BOLTED CONNECTION W/ 1/2" INTERNAL STEEL PLATE (TYPE A)

5-7/8" CLT FLOOR PANEL

12" x 18" GLULAM BEAM

10" x 10" GLULAM BEAM

10" x 12" GLULAM BEAM

10" x 24" GLULAM BEAM

10" x 12" GLULAM BEAM

10" x 12" GLULAM BEAM

10" x 12" GLULAM BEAM

10" x 12" GLULAM BEAM

10" x 24" GLULAM BEAM

10" x 10" GLULAM BEAM

10" x 10" GLULAM BEAM

10" x 10" GLULAM BEAM

10" x 10" GLULAM BEAM

10" x 10" GLULAM BEAM

10" x 10" GLULAM BEAM

TOP OF CLT FLOOR SLAB (FIFTH FLOOR)

TOP OF CLT FLOOR SLAB (SIXTH FLOOR)

Atrium Space Below

1" DIA. HOLES W/ 3/4" THREADED BOLTS

5 A151

4 A151

8 3/4" X 18" CROSS BEAM
NEW - EXISTING FOUNDATION DETAIL

NEW - EXISTING PERIM. FOUNDATION DETAIL

NEW PILE FOUNDATION DETAIL

1" = 1' - 0"

**Structural Details - Foundation**

- **Designers:** Thiago Lee, Blake Kem, Khadija Tarver, Stephen Zimmerer, Aaron Smolar
- **Architect:** Joe Hand, SHoP Architects
- **Structural Consultant:** Amy Harrington, Silman
- **Mechanical Consultant:** Chris Ashton, Buro Happold
- **Enclosure Consultant:** Aaron Davis, GSAPP

**Scale:** 1" = 1' - 0"

- NEW - EXISTING FOUNDATION DETAIL
  - #8 BARS (VERT.)
  - WATERPROOF MEMBRANE
  - #8 BARS (BOT.) @ 3" O.C.
  - 4" GRAVEL
  - 10" CONCRETE WALL
  - #8 BARS
  - EPOXYED INTO EXISTING FND. WALL

- NEW PILE FOUNDATION DETAIL
  - 12" x 12" GLULAM COLUMN
  - COLUMN BASE CONNECTION PLATE
  - #8 BARS (VERT.)
  - #8 BARS (HORIZ. & VERT.)
  - COLUMN BASE CONNECTION PLATE
  - #8 BARS EMBEDDED IN EXISTING BIRCK FOUNDATION WALL

- NEW - EXISTING PERIM. FOUNDATION DETAIL
  - 12" x 12" GLULAM COLUMN
  - COLUMN BASE CONNECTION PLATE
  - #8 BARS (VERT.)
  - #8 BARS (HORIZ.)
  - COLUMN BASE CONNECTION PLATE
  - #8 BARS EMBEDDED IN EXISTING BIRCK FOUNDATION WALL

**Details**

- **Project number:** 21001
- **Date:** Dec. 17, 2021
- **Scale:** 1" = 1'-0"
MASS TIMBER
Mass timber beams and columns reduce the overall carbon footprint of the construction process. Glulam and CLT are entirely renewable and sequester carbon. In addition, they're able to be pre-fabricated which reduces waste and emissions.

DAYLIGHTING
A large seven-floor atrium in the center of the school allows sunlight to reach all floors. The classrooms are arranged along the wings and central atrium in order to reduce the need for electric lighting. Sun shades on the façade minimize solar heat gain.

SOLAR AND GEOTHERMAL
Geothermal heat pumps generate and transfer electricity from deep below the Earth's surface into the basement of the school without carbon emissions. In conjunction, photovoltaic panels oriented toward the sun provide renewable electricity to the structure as auxiliary to daylighting.

WASTEWATER MGMT & REUSE
Internal wastewater treatment reduces the structure's reliance on traditional water utilities by filtering out compounds deemed harmful from otherwise usable water. Additional cisterns store filtered water that has been used on-site. Extensive green roofs and ground floor rain gardens use rainwater to support plants/wildlife.
1/2" STEEL PLATE INSERT

1' - 3" TERRA. RAINSCREEN

1 1/4" AIR GAP

4" MINERAL WOOL (TYP.)

12" x 12" GLULAM COLUMN

FINISHED FLOOR

2x8 WOOD STUD - NAILED TO EACH CLT PANEL

3-PLY 4 1/8" CLT WALL PANEL

TWO (2) LAYERS 5/8" GYP. BRD.

HORIZONTAL HAT CHANNEL

INSULATION PANEL BRACKETS

AIR VAPOUR BARRIER (AVB)

TWO (2) LAYERS 5/8" GYP. BRD.

TOP OF CLT SLAB

LAPPED AVB

3-PLY 4 1/8" THICK CLT WALL PANEL

BACKER ROD AND SEALANT

PRE-FASTENED METAL TIE

VERTICAL Z-GIRT

HORIZONTAL Z-GIRT

PRE-FASTENED METAL TIE

2" CONCRETE TOPPING

APPROX. 1" ACOUSTIC MAT PRODUCT

5-PLY 6 7/8" THICK CLT FLOOR PANEL

8 3/4" X 18" GLULAM BEAM

WALL TO FLOOR L-BRACKET

SLATTED WOOD MECHANICAL SCREEN

(2x6s W/ BIRCH VENEER)

INSULATION PANEL BRACKETS

AIR VAPOUR BARRIER (AVB)

12" x 12" GLULAM COLUMN

FINISHED FLOOR

COLUMN SPLINE (REFER TO STRUCT. DETAILS)

2" CONCRETE TOPPING

PRE-FASTENED METAL TIE

VERTICAL Z-GIRT

HORIZONTAL Z-GIRT

PRE-FASTENED METAL TIE

2" CONCRETE TOPPING

APPROX. 1" ACOUSTIC MAT PRODUCT

5-PLY 6 7/8" THICK CLT FLOOR PANEL

8 3/4" X 18" GLULAM BEAM

WALL TO FLOOR L-BRACKET

SLATTED WOOD MECHANICAL SCREEN

(2x6s W/ BIRCH VENEER)

THICKNESS VARIES

ONE (1) LAYER 5/8" GYP. BRD.

PLASTIC SHIM W/ SILICON (BOTH SIDES)

12" x 12" GLULAM COLUMN
TYPICAL INTERFACE DETAIL - SECTION

12" x 12" GLULAM COLUMN
ALUM. ANGLE @ BUNN BOW
PRIMERED FLOOR
2" CONCRETE TOPPING
APPROX. 1" ACOUSTIC MAT PRIMER

TYPICAL INTERFACE DETAIL - PLAN

12" x 12" GLULAM COLUMN
FOOTING OR MOLDING (TOP)
ALUM. ANGLE @ SLAB EDGE

SCALE: 1 1/2" = 1'

DESIGNERS
Thiago Lee
Blake Kem
Khadija Tarver
Stephen Zimmerer
Aaron Smolar

GSAPP