One Thousand Years of Evolution: A Timeline

900 C.E. Palisade wall: Closely spaced posts embedded in the ground.

1200 Timber frame: Stave construction, timber four-sided frame with vertical exterior weatherboards.

1600 Wattle and daub: Tar coated exposed frame with an early pre-evolutionary version of exterior stucco—Neanderthal Stucco. Board sheathing inner lining.
1900
Clapboard timber frame: Typical 1900 New England timber frame with plaster and lath interior lining and exterior board sheathing, rosin paper and clapboards.

1950
Platform frame: Typical 1950 American wood frame assembly with plywood sheathing and an interior gypsum board lining.

1990
Advanced frame: Insulating sheathing over 2x6 advanced frame.
3” spray polyurethane foam (2 lb/ft³ density)

1½” metal stud wall

Gypsum board thermal barrier

¾” drainage mat (filter fabric side facing up)

2” extruded polystyrene (XPS)

New concrete slab

Existing slab
Asphalt shingles

Roof underlayment

1/2" plywood roof sheathing

Two layers of 2" polyisocyanurate rigid insulation

Existing board roof sheathing

6" high-density (2.0 pcf) sprayed polyurethane foam insulation

Self-adhering ice/water membrane

4' from roof edge

Existing attic joists extended, widening soffit to accommodate exterior insulation

Metal starter strip with drip edge

1 X 3 trim

2 X 12 facia board

Continuous beadboard soffit

5/4" X 8" frieze board

Siding over 3/4" pressure treated wood strapping

Existing 2 X 6 wood rafter

1/2" gypsum board interior sheathing

Existing attic flooring removed at perimeter to allow for installation of sprayed polyurethane foam insulation seal to top plate

Existing interior plaster
Remove demising wall

Remove windows and infill openings

Add column support

Basement

Crawlspace
Building Science Corporation
Four layers of 2" rigid insulation
1x4 furring strip
Wood siding
Cellular PVC trim
Polypropylene insect mesh
Aluminum "C" section protection
Timber
Board floor planks
Board sheathing
Tar paper
Plywood
Fully-adhered membrane
Spray polyurethane foam (2 lb/ft³ density)
Rubble foundation
New roof deck
New crown molding
New fascia
New soffit
New dentil molding
New second frieze board
Original dentil molding removed
Original frieze board remains
Siding
Building Science Corporation

Coping/cap flashing over top of parapet

Embedded wood timber roof structure

Exterior wythe (repointed or coated with polymer cement slurry)

Multi-wythe masonry wall

Fully-adhered membrane roofing extending up interior and over top of parapet wall

4" spray applied foam insulation (closed-cell, high-density)

Timber decking

2" sprayed cellulose fire-proofing ("K-13")

Dropped ceiling structure

2" spray applied foam insulation (closed-cell, high-density)

Uninsulated steel stud assembly

Gypsum board
Liquid applied membrane
waterproofing

Flanged window

Trim closure

Concrete sill

2x6 wood buck

Exterior wythe (repointed or coated with polymer cement slurry)

Multi-wythe masonry wall

Air seal

1½” rigid insulation

Plywood spacer

1x2 backdam

2” spray applied foam insulation (closed-cell, high-density)

Uninsulated steel stud assembly

Gypsum board
Multi-wythe mass wall

Interior lining (gypsum board)

Interior framing

Rock wool or Roxul rigid mineral wool insulation

Fluid-applied water control layer (vapor semi-permeable)

Cementitious rendering
Multi-wythe mass wall

Interior lining (gypsum board)

Cellulose or fiberglass cavity insulation

Wood frame wall (2x6)

Fluid-applied water control layer (vapor semi-permeable)
Multi-wythe mass wall

Interior lining (gypsum board)

Cellulose or fiberglass cavity insulation

Wood frame wall (2x6)

Fluid-applied water control layer (vapor semi-permeable)
1x4 wood furring attached through rigid insulation to 2x4 wood furring

2x4 wood furring mechanically attached to masonry wall

Fluid-applied water control layer and air control layer

Cladding

Joints offset horizontally and vertically with each layer taped

Masonry wall

Interior plaster and lath
2” semi-rigid mineral fiber insulation; seams offset horizontally and vertically

2x4 wood furring mechanically attached to masonry wall

Fluid-applied water control layer and air control layer

Metal hat channel

Fiber cement panel

“Reveal” in panel joint

Spacer/joint backer

1½” semi-rigid mineral fiber insulation

Masonry wall

Interior plaster and lath
Plywood or OSB

Fully-adhered membrane

Metal cap flashing

Plywood or OSB

Metal counter flashing

New roof membrane

Plywood or OSB

Existing roof membrane

Fluid-applied water control layer and air control layer