

## GUIDE 06 OF 6 | WE BUILD NH

### REGIONAL KNOWLEDGE

# Building in the White Mountains

This is not southern NH. The land, the climate, and the codes demand more.

I have built in the White Mountains and Lakes Region my entire career. Building here is different. 100-plus inches of snow, ledge in every other excavation, and temperature swings of 80 degrees between July and January.

The builders who last in this region respect what the land and climate demand. The ones who do not or who cut corners on materials to win a bid -- leave a trail of frozen pipes, failed roofs, and ice-dammed ceilings behind them. In this climate, value engineering envelope materials is not a budget decision. It is a long-term liability.

### CLIMATE -- PLAN FOR ALL OF IT

- \* Design for NH snow loads. Ground snow loads vary by elevation. In Lincoln and at higher elevations, structural snow loads are substantial. We calculate this using engineering software. We do not estimate.

- \* Ice dams are a design problem, not a weather problem. Proper attic insulation, air sealing, and ventilation prevent them. Cutting insulation to save money creates ice dams. Ice dams create \$20,000-\$50,000 interior damage claims.

- \* Frost depth is 48 inches minimum deeper at elevation. Foundations must bear below the frost line. No value-engineering this. A shallow footing in NH heaves.

- \* Wind exposure increases dramatically with elevation. Above 2,000 feet, engineering for wind loads is not optional.

- \* Solar orientation matters. Passive solar design, south-facing glazing, and proper overhangs reduce heating costs meaningfully over the life of the home.

### SITE CONDITIONS UNIQUE TO THIS REGION

- \* Ledge is everywhere. GPR scanning before excavation is standard practice. Budget for blasting regardless -- it is a probability, not a possibility.

- \* Shallow soils -- 18-24 inches of topsoil over glacial till or bedrock -- affects drainage, landscaping, and foundation design.

- \* Shoreland regulations: within 250 feet of any surface water body, NH DES governs what you can build, where, and how. Know this before you buy land.

- \* Wetlands are more common than they appear. Dry in August can mean saturated in May.

- \* Driveway grades: a 15% grade is inaccessible in February. Plan access as carefully as the house.

### MATERIALS THAT CANNOT BE VALUE-ENGINEERED IN THIS CLIMATE

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\* Roofing system: specify a manufacturer-backed roofing system warranty covering shingles, underlayment, ice and water shield, and flashing as a complete assembly. NH's climate voids piecemeal roofing warranties quickly. Do not downgrade here.

\* Windows: specify windows with U-factors appropriate for NH's climate zone (zone 6 in most of the White Mountains). Cheap windows fog, fail, and cost more to heat around than the price difference. Demand a minimum 20-year warranty on glass seals.

\* Insulation: the White Mountains demand a high-performance envelope. Spray foam at rim joists and roof deck, dense-pack or blown cellulose in walls, continuous exterior insulation where the budget allows. Reducing R-values to save upfront money is the most common and most expensive mistake I see.

\* Foundation waterproofing: specify a named, warranted waterproofing system not tar and hope. A failed foundation waterproofing in NH's freeze-thaw environment is a six-figure repair.

\* Ice and water shield: NH code requires it at eaves and in valleys. Some contractors extend it further. We do, because we have seen what happens when a wind-driven storm finds a gap.

## BUILDING SYSTEMS SIZED FOR NH

\* Heating: load calculation software sizes every system. Undersized fails in January. Oversized wastes money. Demand to see the load calculation before equipment is ordered.

\* Air sealing: blower door test before drywall. Fix deficiencies before they are closed in. This is far cheaper than fixing them after.

\* Plumbing protection: all supply lines in exterior walls or unheated spaces protected with heat tape, insulated chases, or interior routing. Frozen pipes are preventable.

\* Backup power: extended outages are common. A whole-home standby generator is worth integrating at design stage.

## WARRANTIES IN THE WHITE MOUNTAINS

\* Roofing system warranty: manufacturer-backed, minimum 30 years on shingles, full coverage on system components. Register immediately after installation.

\* Window warranty: minimum 20-year glass seal warranty, lifetime frame warranty from a manufacturer rated for zone 6. Verify the rating before ordering.

\* Foundation waterproofing warranty: ask for the manufacturer's documentation. A reputable system carries a transferable warranty.

\* HVAC equipment: minimum 10-year parts warranty, registered at installation. Extended labor warranty worth considering.

\* Workmanship: your contractor's labor warranty should cover any defect in installation for a minimum of one year. Get scope and term in writing.

## TECHNOLOGY WE USE TO BUILD BETTER HERE

\* GPR scanning: locates ledge, utilities, and soil transitions before excavation.

\* Thermal imaging: pre- and post-insulation scans verify envelope performance before walls close.

- \* Structural analysis software: snow, wind, and seismic load calculations for every structural member.
- \* Energy modeling: models home energy performance before construction to verify code compliance and operating cost expectations.
- \* Digital project management: real-time schedule, permit logs, daily photo documentation.

## WHITE MOUNTAINS BUILD CHECKLIST

- Snow load calculated by engineer for specific site elevation
- Frost depth established -- 48 inches minimum, deeper at elevation
- GPR scan completed before excavation
- Shoreland buffers confirmed with NH DES
- Wetlands review completed
- Driveway grade reviewed for winter access
- Roofing system warranty reviewed and manufacturer confirmed
- Windows specified for climate zone 6 -- U-factor and warranty reviewed
- Insulation R-values specified and locked no value-engineering
- Foundation waterproofing system specified by manufacturer name
- Ice and water shield coverage specified and reviewed
- Heating system load calculation reviewed before equipment order
- Blower door test scheduled before insulation and at completion
- All plumbing in exterior/unheated spaces protected
- Backup power included or rough-in planned
- IECC 2021 compliance confirmed
- All material warranties reviewed and registration plan in place
- Contractor workmanship warranty scope and term in writing