Old houses carry their history in the grain of their beams. You can read the story of a 19th century farmhouse by the tool marks, the hand cut tenons, the way a joist pocket was carved into soft brick. Termites add a different sort of writing, silent and destructive. When they find a way into sill plates and beams, the effects ripple through floors, plaster, door frames, even rooflines. Repairing that damage without erasing a building’s character takes patience, a steady plan, and judgment you usually only gain after a few messy projects.

I have repaired beams eaten to lace in basements with dirt floors, swapped out sill plates behind granite stoops, and stabilized attic purlins that looked fine from the street yet crumbled at a touch. This guide gathers the practical techniques that work on historic homes, with a focus on termite beam repair, and the related work that follows once you open the envelope. It also speaks to when you should call termite repair services, how to coordinate treatment and structural work, and which paths keep you in step with preservation standards.

Where termite damage starts, and how to read it

Termites do not chew beams because they hate you. They chase moisture and cellulose. In older houses, that means wood in contact with damp masonry, leaky plumbing in crawlspaces, earth-filled porches that bridge right to the sill, and ventilation paths that let humid air linger. Subterranean termites leave mud tubes and hollowed interiors, often leaving a shell that looks fine until you press a screwdriver and it sinks.

A simple way to read a suspect beam starts with rapping. A sound beam rings faintly. A damaged one thuds or flakes. I carry a scratch awl and a moisture meter. In a 1915 foursquare, the front sill looked intact until the awl pushed through an inch of surface and found sawdust. The moisture meter hovered around 18 to 22 percent in that zone, too high for a basement beam if the environment is healthy. Upstairs, telltale dips in the floor and doors rubbing at the head often trace back to sill or beam deflection below.

You also need to identify the species of termite and whether they are still active. Evidence of fresh mud tubes, live workers, http://www.atoutmots.fr/?p=780#comment-55143 and damp frass calls for immediate treatment before any structural repairs. If a licensed operator has already completed treatment, keep the documentation. Building officials and insurers ask for it, and it guides whether you include borate spot treatments as part of your wood repair.

Stabilize first, then diagnose

Once you suspect significant loss of section in a beam, stabilize the load. Shoring prevents cascading damage once you start probing and removing wood. I have seen plaster ceilings drop and wainscot crack because someone yanked a compromised sill without transferring loads first.

A typical shoring setup for a beam in a basement uses two screw jacks under a continuous 4x6 or LVL strongback, with 2x10 plates to spread load at the floor. For beams pocketed into masonry, you often need one shore near the pocket to catch the end bearing. In crawlspaces with limited headroom, I have framed short “cribs” from 4x4s and hydraulic jacks, then swapped to screw jacks for long term control. Always go up in small increments, a quarter turn or less, pausing to listen for any protesting plaster overhead.

One practical caution: do not chase level in a single day. In a Victorian I lifted a settled dining room in 1/8 inch steps over three weeks to avoid cracking crown. If plaster is already brittle, score paint joints where casings and baseboards meet walls, to soften stress.

How much beam you need to replace

Termite structural repair starts with the same math as any framing problem. If a beam has lost more than about 20 to 25 percent of its cross section in a critical zone, assume it no longer carries design loads safely. That threshold is not arbitrary. Section loss reduces capacity nonlinearly, and in historic houses you have extra variables like longer spans and heavier finishes.

Measure the damage accurately. Pop a small inspection window in the beam’s side with a multi tool to see how far clean wood extends. A borescope helps in tight spots. Probe both faces and the bottom, and map the compromised length. Verify bearing conditions at posts and pockets. A beam that looks intact in the middle might be dust at the pockets, especially where brick or stone wicks moisture. I have found six foot runs that needed full replacement, and I have also left beams in place with targeted reinforcement after a one foot section was cut back to sound wood.

Choosing the right repair path

You have three broad options for termite beam repair in old houses. Each has limits.

- Sistering and reinforcement. You leave the original member in place, then add full depth sisters or flitch reinforcement to restore capacity. When headroom allows, I prefer laminating two LVLs on one or both sides of the original, then through bolting at 16 to 24 inch centers with staggered patterns. If the beam is a 7 by 9 hand hewn timber, a steel flitch plate sandwiched with new timber or LVL can add a lot of stiffness without doubling the visual bulk. This approach works when the original still has an intact compression flange and bearing points you can trust.
- Partial replacement with scarf or dutchman. You cut out damaged sections and splice in new wood with a structural scarf, key, or a concealed steel plate across the joint. I have used a 1:8 slope scarf with epoxy and concealed lagged plates for 19th century beams where we wanted the appearance of continuity for an exposed cellar. This technique demands precise carpentry and is best when you can clamp and shore well.
- Full replacement. When a beam is beyond saving or the bearing pockets and midspan are all compromised, remove it and install a new member. That might be a single LVL or PSL, a built up wood beam, or a custom sawn timber if you are restoring an exposed space. For longer spans or limited depth, steel I beams work well, though I often box them with wood to hide the modern profile in a historic cellar.

Preservation standards prefer reversibility and minimal intervention. Sistering and reinforcement check those boxes better than full replacement. That said, I have removed entire beams in a Greek Revival farmhouse because the termites left 3 inches of shell at midspan and the ends fell to dust. Repairs have to meet physics before they meet philosophy.

Techniques that preserve historic fabric

For beams with scattered termite channels but a solid core, consolidation can buy time and preserve original wood. I inject low viscosity epoxy or a borate glycol solution in targeted areas, but I reserve this for non structural components or as an adjunct after adding a structural sister. Epoxy alone is not a substitute for lost section in a beam carrying floors and walls. In decorative or non load bearing attic wood repair, like purlins that primarily hold roof sheathing, consolidation can be sensible.

A dutchman repair, where you remove a decayed pocket of wood and insert a precisely cut patch, works well for the first few inches of a beam end in a masonry pocket. Cut back to healthy fibers, treat surrounding wood with

borate, and coat the patch with a vapor permeable preservative, not a trapped plastic skin. Where the beam pockets into brick, consider a steel angle ledger epoxied and anchored to the masonry to carry the patch without relying only on wood to wood bearing.

If your cellar is open to view and part of the home’s character, matching species and grain matters. Old growth heart pine and chestnut have different density and screw holding than modern SPF. I have special ordered southern yellow pine dense stock for an 1880s mill house beam repair so the visual and mechanical properties aligned. If you go with engineered members like LVLs, plan a wood wrap or leave it honest but tidy with a good coat of limewash in a historic basement.

Sill plates, joists, and the domino effect

Beam repairs rarely live alone. Termites that found a beam usually nibbled the sill and the first few joists. Termite sill plate repair deserves its own plan. If a stone foundation supports a thin sill that is half gone, you can do a rolling replacement in short segments. Shore the wall above, remove two to three feet of sill, clean the top of the masonry, lay a capillary break like self adhered membrane or a slip of stainless flashing, and set a new sill segment to match the original height. Anchor with epoxy set threaded rod or expansion anchors depending on the masonry.

Termite floor joist repair follows similar lines. If joists are notched or eaten near ends, add full length sisters that bear on the new sill. In tight crawlspaces I slide a sister in from a window opening or cut a small access in the rim and feed the new member in at an angle. Use construction adhesive and structural screws or through bolts. When only the first foot is damaged, a scab repair with a 4 foot long sister that extends well past the decay can work, but only when loads are light. For major spans, full length sisters win.

Subfloor and wall assemblies tell on you after structural work. Termite subfloor repair is often needed where the bathroom leaked for years. I plan to replace at least one 4 by 8 sheet’s worth of subfloor around the damaged beam area, then weave new boards where original plank subfloor remains. If the home has original plaster and lath, expect hairline cracks once you true the structure. Termite wall repair inside, whether plaster or later drywall, should follow after the structure is set and the house has settled for a few weeks. If termite treatment required opening walls, budget time for termite drywall repair after termite treatment so the finishes match the era. Skim coating and matching sand float textures matter as much as structure in a living room with ornate trim.

Working inside old masonry beam pockets

Termite damage at beam pockets is common because brick and stone wick water. I have had beams that looked good until the last 6 inches, where they turned to cork. Two options help.

First, extend bearing with steel. A 3 by 3 by 1/4 inch angle let into the pocket and epoxied to solid brick carries a surprising load. If the masonry is friable, use chemical anchors designed for low strength substrates, then grout voids with a lime based repair mortar, not a hard Portland mix that can shatter the old brick. With the angle in place, you can shorten the wood splice and keep the beam clear of damp masonry.

Second, isolate wood from masonry. Set a breathable, capillary break under the beam end, such as a strip of lead coated copper or stainless with a slip of sill sealer. Do not wrap the whole end in plastic. You want moisture to diffuse out, not trap it where fungi and insects thrive.

Structural calculations without overcomplication

You do not need to turn into a structural engineer, but you should respect loads. For a typical beam in a 20 foot span supporting a first floor with plaster, hardwood, and a partition wall, design load often lands around 50 to 60 pounds per square foot tributary. Translate that to a total load and check the capacity of your chosen member. Most LVL manufacturers publish tables. A triple 1 3/4 by 11 7/8 LVL carries more than an old 7 by 9 timber in bending but has less inherent fire resistance. If the beam supports a masonry chimney or heavy tile, stop guessing and hire an engineer for a few hours. That fee is trivial compared to undoing a sagging repair.

Deflection often governs comfort in old houses. Aim for L/480 or better when possible, so floors feel tight. Sistering two solid 2x10s on each side of a rough hewn 3x10 can change a bouncy room into a firm one without changing the look below.

Sequencing, so you do not paint yourself into a corner

You can save yourself days by planning the order. Termite damage restoration flows best in this sequence: treatment, shoring, demolition and assessment, structural repairs, moisture management, then finishes. Treat first or you risk introducing new wood to an active colony. Shore before you remove any compromised parts. Open just enough finishes to see the full extent, then finalize the repair plan. Install new members and sisters, then address sills and joist ends. As you bring the structure back, fix grading, gutters, and ventilation so the repaired beam does not sit back in a swamp. Finally, close walls and floors.

A small example from a bungalow: the hallway floor dipped an inch near the bathroom. We treated, then supported the beam and joists with two jacks and a strongback. We removed a rotted 5 foot section of sill and two joist ends. We installed a new sill segment, sistered the joists to the next bearing, then ran a continuous double LVL under the original beam, through bolted. We brought the floor up 3/4 inch over two weeks, then replaced subfloor and patched plaster. The homeowner barely noticed the floor correction, and the plaster only needed spot touch ups.

Moisture management is part of structural repair

If you ignore moisture, you buy time but not safety. A repaired beam placed under a dripping bulkhead or next to a clogged gutter will invite another round. In basements, add a perimeter drain if groundwater is persistent, or at least a well graded path and a sump pump. Improve cross ventilation in crawlspaces. I have had success with vapor barriers on the soil, lapped and taped, as long as perimeter vents are balanced and bulk water is outside the space. In brick homes, repoint with lime mortar so walls can breathe. Hard cement joints trap water and speed wood decay at contact points.

Borate treatments complement good detailing. Exposed ends of new sisters and sills benefit from a penetrating borate and glycol mix. It is inexpensive insurance. If you prefer a more permanent barrier at foundation walls, stainless or copper termite shields interrupt the hidden pathways termites use to reach wood silently.

Tools and small practices that matter

Old house work is as much about what you do not break as what you fix. Oscillating multi tools cut flush without scarring surrounding trim. A low clearance hydraulic jack paired with a thick oak pad avoids point loading old brick piers. Keep hand planes sharp to fit dutchman patches tight. When you through bolt sisters, use washers sized to avoid crushing old dry fibers. In tight attics, removable plank runways protect plaster ceilings below from misplaced knees and dropped wrenches.

Document everything. Take photos of beam conditions, pocket details, and the bearing you found. It helps with inspectors and with the next person who opens that space in twenty years. Mark sisters and new members with a date and species, discreetly. Future trades appreciate knowing why a beam looks different.

Cost and timing, with honest ranges

Termite wood repair can be modest or it can bite. Treating an active infestation runs a few hundred to a couple thousand dollars depending on house size and method. Termite beam repair itself varies widely. Sistering a short run in a basement with good access may cost 2,000 to 5,000 dollars in materials and labor. Full beam replacement in tight quarters, especially with masonry pocket work and finishes to patch, can push 8,000 to 20,000 dollars or more. Add in termite sill plate repair and joist work, and a serious corner of a house might land in the 15,000 to 40,000 dollar range. Geographic labor rates swing these numbers.

Time matters too. Most beam repairs take a week or two on site when planned well. If you need staged jacking and plaster preservation, add weeks of gentle adjustments. For occupied homes, set expectations about noise, dust, and safe egress. Some of the work has to happen directly under rooms you use daily. A dust barrier and negative air machine keep the project civil.

Finding the right help, and how to vet them

Searches for termite repair near me or termite damage repair near me flood you with ads. Refine those to local termite damage repair providers with historic home experience. Ask for photos of past beam and sill work, not just general carpentry. When talking to a termite damage contractor near me, I ask about their approach to shoring, what fasteners they prefer for sisters, and how they handle beam pockets in brick. Lived answers beat sales talk. Structural termite repair near me will often cross over with small structural engineering firms, and a brief consult is worth it on complex spans. A wood repair contractor termite damage near me who can coordinate with pest control and masonry is gold.

Get a pest control operator and the carpenter on the same page. A good crew will sequence treatment and structural work smoothly, and they will flag moisture sources that sabotage both. In older neighborhoods, an inspector who knows balloon framing and brick nogging helps. They understand that sistering and patching done correctly can meet code even if you do not rip out half the house.

When steel or engineered wood solves problems

In projects where headroom is limited and loads are high, engineered solutions earn their keep. Flitch plates, where a steel plate sits between two timbers or LVLs, add capacity with minimal added depth. I have used a 3/8 inch by 12 inch plate flanked by 2x12 LVLs to replicate the behavior of a chunky old timber without lowering the head height in a cellar with already marginal clearance.

Steel I beams carry heavy loads in small packages. The downside in historic work is the look and the need for fire protection where code requires it. You can box a steel beam with wood to mimic the original and add a layer of Type X gypsum above for fire performance. Connections matter. Bearing plates at masonry piers spread load and keep old brick from crushing.

Case notes from the field

A 1920s Tudor with a walkout basement had a primary beam running through three brick pockets. Termites had eaten the last 10 inches at each pocket. The midspan looked decent. We shored the floor, then cut out the

damaged ends and inserted new ends with a shallow scarf and a concealed steel strap bedded in epoxy across each joint. We set stainless flashing in the pockets and anchored small steel angles into solid brick to help carry the ends. After sistering a double LVL along the tension face with through bolts, the beam carried properly. The cellar kept its original timber look, and we did not touch the finished rooms above beyond a few paint cracks.

In a farmhouse from 1870 with a stone foundation, the front sill sat 2 inches below true in one corner. The beam there measured 6 by 8 but was honeycombed by termites. We staged jacking over three weeks, replaced 12 feet of sill in 3 foot bites, then installed a new 3 ply LVL flush to the underside of the old beam, bolted through. We added borate to all exposed cuts and improved grading and a downspout that had been dumping next to that corner for decades. Floors came back within 1/4 inch of level, and door heads no longer rubbed.

Safety, permits, and codes without losing your mind

Work under load is dangerous. Never crawl under a beam that is partially cut without redundant shoring. Screw jacks creep if overloaded or on soft soil, so use proper bases. Wear a respirator when you open termite damage. Old frass mixes with mold and silica from brick pockets.



Permits are usually required for structural work. Most building departments accept sistering and like for like replacements with submittals that include member sizes, spans, and fasteners. When you introduce steel or change support conditions, an engineer’s stamp clears doubts. You can meet modern codes in historic houses with thoughtful detailing. Fire blocking in balloon frames, for instance, can be added as you open areas for repair, improving safety without changing character.

Aftercare, monitoring, and warranties

Once you complete termite structural repair, keep an eye on it. I schedule a six month and a one year visit to check relative humidity in the basement or crawlspace, look for any renewed termite signs, and ensure the shoring is fully removed and the structure is bearing as designed. A small laser level line across a room lets you spot unexpected movement later. Encourage homeowners to maintain gutters and downspouts, check grade around the foundation, and avoid stacking firewood against walls. Many pest control firms offer warranties that require annual inspections. Make sure repairs you perform do not void those, and document any borate treatments you add.

A quick field checklist for historic termite beam work

- Verify and complete termite treatment before structural repairs begin, and keep the paperwork.
- Shore methodically with redundancy, then probe and map the full extent of damage.
- Choose reinforcement, partial replacement, or full replacement based on section loss and bearing condition, not habit.
- Isolate wood from damp masonry, and fix moisture sources as part of the job.
- Sequence finishes last, and allow time for the structure to relax before closing walls and floors.

Bringing it back to the beam

Historic beam repair asks for respect. Respect the load paths that carry a house, the craft embedded in old timbers, and the pests and moisture that will return if you do not close the door. Whether you are tackling termite beam repair yourself with a seasoned carpenter or hiring termite repair services to take the full scope, the right techniques let you repair termite damage to house structure without sanding off its past. Done well, termite framing repair, from sill to joist to beam, reads as a careful intervention, not a clumsy graft. And the house, relieved of sag and risk, can go back to what it does best, which is to hold people and their lives, quietly, for another hundred years.