

Lintels Under Load

by Travis Nech

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LINTELS UNDER LOAD

An Advanced Field Guide to Diagnosing and Replacing Failed Lintels Over Storefronts, Garages, and Commercial Openings — With the LintelLOCK System

Travis Nech

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Introduction: The Heaviest Little Thing in the Wall

Every opening in a brick wall is a problem somebody solved once, and a lintel is the solution sitting right above the hole. It's a small piece of the building — usually a length of steel angle or a combination of steel shapes — but it carries the most concentrated load in the whole wall. Everything the wall would weigh if the opening weren't there gets re-routed over that lintel and dumped onto the brick at each side. That's why a failing lintel never announces itself politely. It rusts, it swells, it jacks the brickwork apart, and the whole opening starts talking in cracks, sags, and falling pieces.

I've spent fifty years working Texas brick, and lintels are one of the jobs I've done more than almost anything else. Garage headers over a double-wide door. Storefront openings on a little strip center. The wide lintels over commercial roll-up doors where a loaded semi backs up to the dock. And every one of them taught me the same lesson: the lintel is where the building is most honest with you. Read it right and it tells you exactly what it needs.

This is not a beginner's book. I'm going to assume you know which end of a trowel does the work and that you've mixed more mortar than you can count. What we're doing here is the advanced layer: why commercial lintels fail differently than

residential ones, how to read what an opening is really carrying, the mechanics of rust and the jacking cycle, crack patterns as diagnostic instruments, temporary shoring done right, measuring and spec'ing the replacement, my field-developed LintelLOCK replacement system step by step, bearing and flashing details where most replacements fail first, phasing work in occupied buildings, the special cases of garage and roll-up doors, water management that keeps the new steel alive for decades, and the business side — pricing, warranties, and talking to property managers so the job actually happens.

A few ground rules before we start, and these are non-negotiable.

First, I am not a licensed engineer, and this book does not replace one. I'm a working mason with fifty years of hands-on field experience. Everything in here is field-developed — born on scaffolds, tailgates, and job sites, not in a laboratory. Where a question crosses into load calculation, structural design, or anything about how much weight a piece of steel can carry, I'll tell you to hire a structural engineer. That is the professional thing to do, and knowing where your lane ends is what keeps people safe.

Second, the scenarios in this book are hypotheticals — composite teaching situations I made up to show you a point. They are labeled as such. No real customers, no borrowed problems.

Third, steel in this book is lintel steel — angle iron, channel, plate — the stuff that holds brick up over openings. That's the whole subject here. This book contains nothing about foundation repair or piers.

Last, about safety: shoring a loaded opening is real structural work with real risk. If you are not confident, if the opening is wide, if the wall above is tall or the building is occupied — get an engineer and get experienced help. A collapsed wall is not a learning experience. Let's do this right.

The tool you'll meet in Chapter 7 is the LintelLOCK system — my field-developed, purpose-built lintel replacement system. Field-developed means it was built from fifty years of failures and fixes on real Texas walls. Purpose-built means it was designed from the ground up for one job: replacing failed lintels cleanly, safely, and permanently. You'll see exactly how it works, step by step, and exactly where it fits — and where it doesn't.

Let's read the wall.

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Chapter 1: Why Commercial Lintels Fail Differently Than Residential Ones

A house lintel and a storefront lintel fail for the same chemical reason — rust — but they live completely different lives, and if you walk up to a commercial opening with residential habits, the building will humble you.

Start with the span. A residential window lintel might bridge three or four feet. A residential garage header might hit eight or nine. A commercial storefront can run twelve, sixteen, twenty feet of continuous opening — sometimes with the brickwork above stacked three stories tall on a mixed-use building. Every extra foot of span doesn't just add a little load. The load on a lintel grows with the span in a way that

punishes wide openings hard: double the span and you don't double the load, you roughly quadruple the bending stress the steel has to carry. So the twenty-foot storefront opening is not twice the job of a ten-foot opening. It's a different animal wearing a similar skin.

Then there's what's above the opening. On a house, the lintel carries brick veneer — usually a single story of it, sometimes two. On a commercial building, the opening might carry a full story of masonry, a parapet, roof equipment, a heavy cornice, or a sign structure bolted through the wall. And the loads aren't just heavier — they're livelier. A house wall sits there. A commercial wall gets delivery trucks idling against it, roll-up doors slamming, forklifts thumping, HVAC units vibrating, and in Texas, hail and storm cycles that work every joint in the building. Vibration shakes mortar loose, opens weep paths, and lets water in — and water is what kills lintels, which you'll read about at length in Chapter 3.

Access and schedule change everything too. A house lintel job: you pull up in the morning, the homeowner leaves for work, you own the wall all day. A commercial job: there's a tenant running a business under that opening. A restaurant can't have dust raining into the dining room at noon. A retail shop can't have its front entrance barricaded during business hours. So the commercial lintel job is phased, cleaned, scheduled around business — and that discipline is part of the work, not an add-on. Chapter 9 covers phasing in detail.

The steel itself is often different. Residential lintels are usually simple single angles — a 3-1/2 by 3-1/2 or 4 by 4 angle holding up one wythe of veneer. Commercial openings were often built with double angles (one for each wythe), channels, or built-up sections — and here's the part that bites: a lot of older commercial work used steel that was never primed, never coated, and buried directly in mortar with zero flashing. The original builders counted on the mortar to protect the steel, and mortar does not protect steel. It wicks water straight to it. Fifty, sixty, seventy years later, you're looking at the bill.

There's also a class of failure you almost never see on houses: the deflected monster. A residential lintel that deflects a half inch looks terrible. A commercial lintel over a sixteen-foot storefront can deflect an inch or more and still be holding — sagging, creeping, quietly over-stressed — until something gives. The longer the span, the more the steel can bend before it reads as an emergency, which means by the time the tenant calls about a crack, the steel has been failing for years. On houses, customers call early because a half inch of sag over a window is dramatic. On commercial, the same half inch over sixteen feet is invisible from across the parking lot, and the damage compounds silently.

Consider a hypothetical composite scenario — the kind of storefront call I get a few times a year. A property manager oversees a 1970s strip center. One unit's glass storefront sits under a sixteen-foot brick opening. The manager calls because a stair-step crack appeared over the door and a few pieces of mortar fell onto the sidewalk last month. From fifty feet away it looks minor. Up close with a ladder, the story changes: the original double-angle lintel was never flashed, the bottom leg has rusted to the point where you can flake it with a screwdriver, the steel has swelled and jacked the bottom course up — and the bearing on one end is sitting on spalled brick. This is a full replacement job, not a patch, and it's been developing for a decade. The residential version of this call would have been a window header and a half-day job. The commercial version is a phased, shored, flashed replacement across a business that's open six days a week. Same disease, different patient — and you dose accordingly.

One more difference worth knowing before we move on: documentation and liability. On a house, the customer is the homeowner and the decision is personal. On commercial work, you're dealing with property managers, owners, sometimes multiple tenants, lease clauses about who pays for structure, and insurance requirements that can be surprisingly specific. Photograph everything. Write everything down. A commercial lintel replacement touches a building that represents somebody's capital, and the paper trail is part of the craft. Chapter 12 will show you how to run this side of the business like a professional.

The through-line of this chapter is simple: commercial lintels are bigger spans, bigger loads, bigger consequences, tighter schedules, and longer silent failure periods than residential ones. Everything downstream — diagnosis, shoring, replacement, phasing, pricing — scales from that understanding. Respect the opening and it will tell you what it needs.

Field Notes

- Commercial lintels span farther, carry more, and fail more quietly than residential ones — a 20-foot storefront opening is a different animal than a 9-foot garage header.
- Bending stress grows roughly with the square of the span: doubling span roughly quadruples stress.
- Commercial walls carry parapets, signage, rooftop equipment, vibration, and delivery traffic — livelier loads, more water paths.
- Unprimed, unflashed steel buried in mortar is the standard original sin of older commercial lintels.
- Long spans can deflect a lot before the failure reads as an emergency — inspect early, inspect close, inspect up a ladder.

- Commercial work means tenants, schedules, leases, and paper trails: document everything, photograph everything.

Chapter 2: Reading the Opening: Spans, Loads, and What the Wall Is Really Carrying

Before you touch a brick, before you price a thing, before you promise anybody anything — you read the opening. Not glance at it. Read it the way a man reads a river before he crosses it. Because everything downstream depends on what you understand right now: how far it spans, what it's carrying, how it's bearing, and what condition the whole assembly is in.

Start with the span. Measure the clear opening — the daylight distance between the jambs, from inside face to inside face. Write it down. Then measure the overall lintel length if you can get to it, because the difference between the two tells you the bearing: how much steel sits on masonry at each end. The span is the opening's whole story in one number. A four-foot span is a weekend problem. A sixteen-foot span with a full story of brick above it is a shored, phased, hire-an-engineer problem. Everything about the job — the risk, the temporary support, the replacement spec, the price — keys off this number.

Next, read what's above. Stand back and count stories. Is this a single-story storefront with a parapet, or is there a second floor of occupied space over that opening? Is the wall brick veneer over a frame, or full structural masonry? These distinctions matter because they change the load path. Brick veneer is a skin; it hangs on ties and carries itself plus whatever sits directly on the lintel. Structural masonry carries floors and roof. You do not need to calculate the load — that is a structural engineer's job, and for anything wide, tall, or occupied, hire one and say so plainly. But you do need to see the load: look for floors bearing on the wall, roof joists landing above the opening, signs and canopies bolted through the masonry, rooftop equipment sitting on the roof structure above. Each one is weight the lintel is passing down to the bearings.

Now look at the bearings — the masonry each end of the lintel rests on. The bearing is where the whole game is won or lost. A lintel transfers its entire load into a few square inches of brick at each end. Look for the telltales: cracked or spalled brick right where the steel lands, mortar that's ground to powder at the bearing, brick that's displacing or rotating under the load. Tap the bearing brick with a hammer — does it ring solid or thud dead? If the bearings are compromised, the replacement doesn't just need a new lintel; it needs

rebuild bearings, and you price and plan for that before you're standing under a shored wall discovering it.

Measure the wall thickness too. A single-wythe veneer wall needs one angle. A double-wythe wall or a veneer-plus-backup wall might need a double-angle or channel configuration. The thickness also tells you how much working room you have when you set temporary shoring and when you slide the new steel in. On commercial work you'll often find cavity walls — an outer brick wythe, an air space, and a concrete block backup. The lintel has to carry both wythes, and the flashing has to manage the cavity. Know the wall section before you promise the fix.

Then there's the geometry of failure — sag and deflection. Stretch a mason's line or a string tight across the opening, level it, and measure how far the lintel has deflected at midspan. Or sight along the bottom leg of the steel from one end: a failing lintel reads like a smile, dipping in the middle. Write the number down. A quarter inch of sag on a six-foot span is a problem. A quarter inch on a sixteen-foot span might be within what the steel can do — but an inch on that same span means the steel has yielded and it's not coming back. Deflection is also your baseline: after replacement, you'll check the new steel against the same measurement to prove the opening is true.

Look for previous work. Old commercial buildings are layered with repairs — some good, some desperate. Look for signs the lintel was patched before: parged-over ends, fresh mortar over old rust, a steel plate bolted on as a bandage, paint slapped over scaling. Previous work tells you the failure has history, and history tells you the owner has been managing symptoms. It also warns you about what's hidden: that plate bolted over the rust is hiding the worst of the corrosion.

Finally, read the water. Where does water go on this wall? Look up: is there a parapet cap, and is it intact? Are there scuppers dumping water down the face? Is the storefront sign channeling water behind the brick? Is there a canopy or awning directing drip lines across the opening? Water is the engine of lintel failure — Chapter 3 is devoted to the mechanics — so the water story is the failure story. If you fix the lintel and don't fix the water, you've built a very expensive temporary repair.

Put it all in writing before you leave the site. I carry a one-page opening survey form in the truck — span, bearing lengths, wall thickness, courses above, deflection reading, bearing condition, water observations, previous work, access notes, tenant information. It takes fifteen minutes and it has saved me from more bad promises than I can count. The man who measures the opening owns the job; the man who

eyeballs it rents the consequences.

One more thing, and I mean it: the moment you see a wide span, a tall wall, occupied space above, or anything that makes your gut tighten — that is the moment to call a structural engineer. Not after you've priced it. Not after you've started. Before. An engineer gives you the load numbers, the steel sizing, and the shoring plan that keeps everybody safe. My fifty years of field experience tells me what I'm looking at; an engineer's stamp tells the building department, the owner, and the insurance company. Use both.

Field Notes

- Read the opening before you touch anything: clear span, overall steel length, bearing lengths, wall thickness, courses above.
- See the load: floors, roof structure, signage, canopies, rooftop equipment — everything the lintel passes to its bearings.
- Inspect the bearings first; a new lintel on failed bearings is a new failure.
- Measure midspan deflection with a string line — it's your baseline for proving the fix afterward.
- Look for previous repairs (parged ends, bolted plates, paint over rust) — they hide the worst of it.
- Read the water: parapet caps, scuppers, signs, canopies — water is the engine of lintel failure.
- Wide span, tall wall, occupied space, or gut-tightening: call a structural engineer before you price, not after.

Chapter 3: Rust Is the Real Enemy: Corrosion, Expansion, and the Jacking Cycle

Ask ten people why a lintel failed and nine of them will say "it rusted." They're right, and they have no idea how right. Rust is not a stain on the steel. Rust is an expansion event — one of the most powerful slow-motion forces in all of masonry. Understand it and you understand lintel failure. Miss it and you'll replace lintels that fail again in ten years.

Here's the chemistry in plain language. Steel is iron. Leave iron in contact with water and oxygen and it oxidizes — it rusts. The rust product occupies roughly six to ten times the volume of the steel it replaced. Let that land: the steel doesn't just get thinner as it rusts. It gets bigger. A lintel that loses an eighth of an inch of steel to corrosion can swell by half an inch or more of rust scale. And that swelling happens inside a rigid brick wall that has nowhere to go.

This is the jacking cycle, and it's the engine of nearly every lintel failure you'll ever see. Step one: water reaches the steel. Step two: the steel rusts and expands. Step three: the expansion — called rust jacking — lifts the brickwork above the lintel. The rust acts like a slow hydraulic jack, prying courses upward, opening mortar joints, and cracking the wall in the stair-step patterns we'll study in Chapter 4. Step four: the lifted, cracked masonry lets in more water. Step five: more water, more rust, more jacking. The cycle feeds itself, accelerating, until the steel is a flaking shell, the brickwork above is displaced, and pieces start falling.

Why does the water get there in the first place? Because most older lintels were installed bare. No primer. No coating. No flashing above the steel to catch cavity water and throw it out through weeps. The steel sits in a bed of mortar, and mortar is a sponge — it wicks water from the cavity, from the face, from the bearing pockets, straight to the steel. On a commercial building, the water sources multiply: failed parapet caps dripping into the wall, scupper discharge running down the face, sign mountings penetrating the brick, irrigation hitting the wall, even condensation in the cavity on air-conditioned buildings. Every one of them feeds the cycle.

Location matters enormously. The worst corrosion is almost always at three places: the ends, where the steel sits in the bearing pockets — damp, airless, and in constant contact with mortar; the bottom leg of the angle, where gravity parks every drop of water that enters the wall; and the outer face, where wind-driven rain and sun cycling work the steel through a thousand wet-dry, hot-cold cycles a year. Texas heat is its own accelerator: a south-facing storefront lintel bakes to 140 degrees in August, then a thunderstorm drops the temperature forty degrees in twenty minutes. The steel expands and contracts, the mortar around it micro-cracks, and each cycle opens a slightly bigger door for water.

There's a compounding detail most people miss: as the steel rusts and thins, its load-carrying capacity drops at exactly the same time its expansion is destroying the masonry around it. So the lintel is getting weaker and the wall is getting looser, simultaneously, feeding each other. This is why a lintel that "looked okay last year" can be a crisis this year — the cycle is nonlinear. It creeps for a decade and cascades in a season.

Can you stop it once it starts? On a working lintel that's already jacking, no. You cannot un-rust steel inside a wall, and no surface treatment applied to a rusted lintel stops corrosion that's already underneath scale. Wire-brushing and painting a jacked lintel is one of the saddest repairs in this trade — it looks like action, it photographs well, and it does nothing. The rust continues under the paint, the jacking continues under the rust, and two years later the paint is

peeling off swollen steel and the owner is paying twice. When the jacking cycle is running, the answer is replacement — with steel that's protected properly this time, with flashing and weeps, which Chapters 7, 8, and 11 cover in detail.

That said, there is a real place for prevention on lintels that are still sound. If you inspect a commercial building and find lintels that are straight, true, and rust-free — or with only light surface oxidation — you can buy them decades: clean to bright metal, apply a proper rust-inhibitive primer (a zinc-rich primer is the field standard), and most importantly, verify or install flashing and weep drainage above the steel so water never parks on it again. Prevention is cheap. Replacement is expensive. The inspection that finds sound lintels is worth real money to a property owner, and saying "this one's fine, protect it" builds the trust that gets you the replacement jobs.

How do you assess where a lintel is in the cycle? Three field tests. First, the screwdriver test on the exposed steel: can you flake the rust off in scales, or is it tight surface oxidation? Flaking scale means section loss — the steel is thinner than it was, and jacking is active. Second, the jacking check: look at the bed joint directly above the steel. Is it displaced upward? Can you see daylight or a widened joint? Is the first course of brick above the lintel sitting higher than its neighbors? That's the jack at work. Third, the sounding test: tap the masonry above the opening with a hammer. Solid, tight masonry rings; jacked, loosened masonry thuds and rattles. Map the thud zone — it tells you how far the damage has spread.

One caution that belongs in this chapter: never, ever mistake the symptom for the disease. The crack is not the problem. The displaced brick is not the problem. The rust is the problem, and the water feeding the rust is the cause. Every repair that addresses the crack without addressing the steel and the water is a repair that fails. Tuckpointing over a jacked lintel is painting over a fire. You'll read about the crack patterns next — learn to see them as the steel's autobiography, written in broken mortar.

Field Notes

- Rust is an expansion event: corrosion product occupies roughly 6-10× the volume of the steel it replaced.
- The jacking cycle: water → rust → expansion → lifted/cracked masonry → more water → more rust. It feeds itself and accelerates.
- Bare steel in mortar, no flashing, no weeps: the standard original sin — mortar wicks water straight to the steel.
- Worst corrosion zones: bearing pockets, the bottom leg of the angle, and the weather face.
- Texas heat cycling (140°F afternoons, thunderstorm thermal shock) accelerates the cycle.

- You cannot arrest active jacking with wire brushes and paint — replacement is the answer once the cycle is running.
- Sound lintels can be protected: clean to bright metal, zinc-rich primer, and verify/install flashing and weeps.
- Field assessment: screwdriver flake test, the jacking check at the bed joint above the steel, and the hammer sounding test to map the damage zone.

Chapter 4: Stair-Steps, Sags, and Shears: Reading Crack Patterns Like Instruments

Cracks are instruments. They don't tell you that something is wrong — any fool can see that. They tell you what is wrong, where it's wrong, and how far along it is. A lintel crack pattern is the steel's autobiography, written in broken mortar. Learn to read it and you can walk up to an opening you've never seen and know the failure mode before you climb the ladder.

The stair-step over the opening. This is the signature crack of a jacked lintel. It starts at the top corner of the opening — or at the end of the lintel — and climbs the wall in a staircase, following the mortar joints up and outward. Why stairs? Because the jacking force lifts the brickwork vertically, and the mortar joints are the weak planes. The wall separates along the joints in the path of least resistance, and that path steps up and out from the point of lift. The stair-step tells you: the steel is swelling and pushing up. The wider the steps, the further along the jacking. If the crack is tight — a hairline following the joints — you're early in the cycle. If the steps have opened a quarter inch or more and you can see into the wall, the jacking is advanced and the masonry above is displaced.

Pay attention to direction. Stair-steps that climb away from the opening's center, up and outward from each top corner, are the classic jacking signature. Stair-steps over the middle of a long span, combined with a visible sag, tell a different story — that's deflection, the steel bending under load, which we'll get to in a moment. And a stair-step that runs downward from the opening toward the foundation, or one that's mirrored on both sides of a corner, may not be a lintel problem at all — it may be foundation movement telegraphing up through the wall. That's a different book and a different trade; if you suspect the foundation is moving, the answer is a foundation evaluation, not a lintel replacement. Knowing which crack is which is what keeps you from replacing a good lintel over a settling wall.

The sag. Stand back and sight along the bottom of the opening. A healthy opening is straight and true. A failing lintel smiles — the middle dips below the ends. The sag is deflection made visible: the steel is bending under the load it carries. A little deflection is normal in any spanning member — steel moves under load, that's physics. But permanent, visible sag means the steel has been stressed past the point where it springs back. Measure it with a string line, as Chapter 2 described, and compare it to the span. As a field rule of thumb, visible sag you can see from across the parking lot on a commercial span is a replacement trigger, not a monitoring situation. And check for progressive sag: measure it, write it down, measure it again in six months. Sag that grows is steel that's still yielding. Sag that's stable on a sound, rust-free lintel might be old settlement of the original installation — ugly, but not active failure. The difference between growing and stable is the difference between a replacement job and a conversation.

The shear crack at the bearing. This one is easy to miss and important to catch. Right where the lintel ends sit on the masonry — at the bearing points — look for short, steep cracks running diagonally through brick or mortar, or for brick that's spalling and crumbling directly under the steel. These are shear and bearing failures: the concentrated load of the lintel is crushing the masonry beneath it. The causes stack up — rust-thinned steel flexing more than it should, bearings that were too short to begin with, brick that was soft or already damaged. Bearing failure is urgent because it's the support disappearing from under the load. A lintel with failed bearings is a wall looking for a place to fall. This is shoring territory immediately — Chapter 5 — and it's one of the patterns where I want an engineer involved before anything moves.

Horizontal cracking along the steel line. Look at the bed joint sitting directly on the lintel — the joint between the steel and the first course of brick. A horizontal crack running the length of the opening, sometimes with the joint opened up and the brick sitting visibly higher, is the jacking cycle's front line. The rust swells, the brick lifts, the joint separates. Sometimes you'll see the joint displaced — the brick above shifted slightly outward or upward relative to the brick below. Displacement is the word that should raise your pulse. Cracked mortar can be repointed. Displaced masonry is structure moving, and structure that moves once moves again until the cause is fixed.

Face spalling and rust bleed. Reddish-brown staining running down the face of the brick below the lintel — rust bleed — is water carrying corrosion product out of the wall. It's the wall crying rust. It tells you the steel is actively corroding and water is actively moving. Spalling — the faces

of the brick popping off — near a lintel usually means one of two things: the rust jacking is prying the brick apart from behind, or freeze-thaw is working saturated brick. In Texas, it's usually the jacking. Map the spall zone: it marks the extent of the water problem.

The compound pattern. Real walls rarely give you one clean signature. The typical advanced failure is a compound: stair-steps at the corners, horizontal separation along the steel line, rust bleed on the face, spalled bearings, and a visible sag — all at once. Read them as a timeline. The rust started it (bleed, horizontal separation). The jacking spread it (stair-steps). The thinning steel surrendered to the load (sag). The bearings took the punishment (shear, spall). When you see the full compound pattern, you're not diagnosing anymore — you're planning a replacement. The diagnosis is done. Now it's shoring, spec, and schedule.

What to do with the reading. Every crack gets three things: a photograph with a scale reference (a ruler or a coin in the frame), a measurement of its width at the widest point, and a date. Crack monitoring is the most underused diagnostic tool in this trade. A crack you measured in March and measure again in September tells you whether the failure is active or arrested — and that single fact changes the job from "replace now" to "plan and budget" or the reverse. I leave crack monitors — simple tell-tale gauges or even two pencil marks with a measured distance — on commercial openings I'm watching. It's cheap, it's professional, and when the property manager asks "how fast is this moving," you answer with numbers, not adjectives.

One more instrument reading before we move on: listen to the wall. Tap the masonry above the opening with a hammer, working from the center out to the bearings and up the courses. Solid masonry rings with a tight, high tone. Loosened, jacked masonry thuds — dull, hollow, rattling. The boundary between ring and thud is the boundary of the damage zone, and it's almost always bigger than the visible cracks suggest. Mark it with chalk. That chalk line is the real scope of the repair.

Field Notes

- Stair-step cracks climbing up and outward from the opening's corners = rust jacking. Width of the steps measures how far along it is.
- Visible sag (the "smile") = steel deflection. Progressive sag (growing over time) is a replacement trigger; stable old sag on sound steel may just be ugly.
- Steep shear cracks or spalling directly under the lintel ends = bearing failure. Shore it immediately; get an engineer.

- Horizontal cracking along the steel line = the jacking front. Displaced brick (shifted, not just cracked) means structure is moving.
- Rust bleed on the face = active corrosion with active water movement.
- The compound pattern (stairs + separation + bleed + spill + sag) is a full replacement, not a diagnosis exercise.
- Downward-running or mirrored cracks may be foundation movement, not lintel failure — different trade, different fix.
- Photograph every crack with a scale, measure its width, date it, and monitor: growing vs. stable changes the job.

Chapter 5: Temporary Support Done Right: Shoring a Loaded Opening Without Dropping the Wall

This is the chapter where people get hurt if they freelance. Shoring — temporary support that holds the wall while the failed lintel comes out and the new one goes in — is the most safety-critical part of a lintel replacement. Do it right and the job is calm, controlled, and boring. Do it wrong and masonry falls on somebody. There is no middle ground, and "we've always done it this way" is not an engineering plan.

Start with the principle: you are not holding up the building. You are holding up the wall above the opening — the triangle or rectangle of masonry that the lintel was carrying — and transferring that load to solid ground or solid structure through a temporary path that you build and control. The load path has three parts: the pickup (how you grab the wall), the posts (how the load travels down), and the footing (what the posts stand on). Every one of the three has to be right, because a chain is only as strong as its weakest link and gravity does not negotiate.

The pickup: needles and strongbacks. The classic method for supporting masonry over an opening is the needle beam. You cut pockets through the mortar joints above the failed lintel — usually two to four courses up, in the bed joints — and slide steel needles (beams or heavy timber) through the wall so they stick out on both faces. On the outside face, the needles carry a strongback — a horizontal beam running parallel to the wall that spreads the load across multiple needles. On the inside, the needles are supported by the posts. The wall's weight above the opening now hangs on the needles, the needles hand it to the posts, and the lintel below is unloaded and free to come out.

Needle spacing depends on the span and the load, and this is exactly where an engineer earns their fee: they tell you how many needles, what size, and where. As a field rule, needles typically land every three to four feet along the opening, set in solid bed joints — never in a cracked or deteriorated joint, because a needle is only as good as the masonry it bears on. The pockets get packed solid with mortar or dry-pack after the needles are in, so there's no play, no settling, no surprises.

For shorter spans and lighter loads, adjustable steel shoring posts (the screw-jack type, often called post shores or Ellis shores in the trade) can pick up a strongback directly, without needles through the wall — the strongback bears against the face of the wall under a solid course, and the posts carry it to the ground. This is faster and less invasive, and it's the right call for a lot of residential-scale commercial openings. But the strongback must bear on sound masonry — never on the course sitting on the failed lintel, never on cracked or jacked brick — and the bearing length has to be real, not a wish.

The posts: plumb, braced, and rated. Shoring posts are not lumber stacked on hope. Use manufactured adjustable steel posts with a known load rating, or properly sized timber posts — and know which you're using and why. Every post stands plumb — checked with a level, not eyeballed — because a post that's out of plumb is a post that's trying to kick out. Posts get braced laterally: diagonal bracing between posts, tied to the structure where possible, so the whole shoring frame can't rack sideways. And the screw jacks get snugged to take the load before the lintel is disturbed — you preload the shoring so the wall transfers onto it gently, not in a sudden drop when the old steel comes out. The preload is the moment of truth: if the wall settles a hair onto the shoring and everything stays put, you're in business. If anything shifts, creaks, or cracks — stop, reassess, and get the engineer back out.

The footing: what the posts stand on. This is the part that gets skipped and shouldn't be. A shoring post carrying a ton of masonry cannot stand on soft soil, a cracked sidewalk, or a hollow paver. Posts stand on solid, level bearing: a concrete slab in good condition, or timber mudsills — heavy planks or timbers that spread the post load across a bigger area of ground. On soil, the mudsill spreads the load so the post doesn't punch into the dirt the first time it rains. On a slab, check the slab: cracked, settled, or thin slabs are not footings. Inside a building, protect the floor — a post point-loaded on a finished slab or a wood floor will damage it. Spread the load, protect the surface, and think about what happens when it rains, because a shoring setup that stands for a week will see weather.

Sequencing: the order of operations. Shoring goes up before anything is disturbed. The full sequence: survey and engineer review, install shoring, preload and verify, then — and only then — begin removing the failed lintel. The lintel comes out in a controlled order, usually working from the center outward or per the engineer's plan, with the masonry above already hanging on the needles. The new steel goes in, bearings are set and packed, the wall is rebuilt or repointed as needed, mortar cures to sufficient strength — and only then does the shoring come down, in the reverse of the installation, gradually, watching for any movement. Shoring comes down slow. You unload it like you'd set down a sleeping child.

What can go wrong. The classic failures: shoring on bad footing that settles after a rain, dropping the wall an inch onto the new lintel before the mortar has cured. Posts out of plumb that kick out when loaded. Needles set in deteriorated joints that crush. Preload skipped, so the wall drops suddenly when the old steel is cut. And the most common one — undershoring, too few posts or too light a setup for the actual load, because somebody guessed the load instead of having it calculated. Every one of these is preventable, and every one is the reason this chapter exists.

The occupied-building factor. On commercial work, the shoring often stands in a space people use — a sidewalk, a storefront entry, a loading area. The shoring zone gets barricaded, signed, and lit. Nobody walks under a loaded needle beam who doesn't have to, and nobody who doesn't have to gets the option. This isn't paranoia; it's the job. Chapter 9 covers the occupied-building choreography in full.

Let me be blunt about the line: if the span is wide, the wall is tall, the building is occupied, or your experience with shoring is thin — hire a structural engineer to design the shoring, and hire an experienced crew to install it. There is no shame in this. The shame is in a collapse. My fifty years taught me a hundred ways to do this work; they also taught me exactly where my lane ends. Shoring design for a loaded commercial opening is an engineer's lane. My lane is executing it perfectly once it's designed.

Field Notes

- Shoring has three parts: pickup (needles/strongback), posts (plumb, braced, rated), footing (solid bearing, mudsills on soil). All three must be right.
- Needles go through solid bed joints every ~3–4 feet, never through cracked or deteriorated joints; pack the pockets solid.
- Posts stand plumb, get lateral bracing, and get preloaded before the lintel is disturbed — preload gently, verify, then

- proceed.
- Footings matter: solid slab or timber mudsills; never soft soil, cracked slabs, or hollow pavers; protect interior floors.
 - Sequence: shore → preload → verify → remove lintel → set new steel → cure → unload shoring gradually, in reverse.
 - Barricade, sign, and light the shoring zone in occupied buildings; nobody walks under loaded shoring unnecessarily.
 - Wide span, tall wall, occupied building, or thin experience: engineer-designed shoring, experienced crew. No freelancing.

Chapter 6: Measuring the Existing: Span, Bearing, Depth, and the Replacement Spec

You can't spec what you haven't measured, and you can't measure it once the wall is shored and the clock is running — well, you can, but you'll do it badly, in a hurry, with a tenant asking when the door reopens. The measuring happens during the survey, calmly, before anything is promised. This chapter is the full measurement protocol: what to measure, how to measure it, and how the numbers become a replacement spec.

Clear span. The daylight opening, inside face of jamb to inside face of jamb. Measure at the bottom of the opening and at the top — they should agree; if they don't, the jambs are displaced and that's more information. Measure twice, in two places, and write down both. The clear span is the number everything keys off: shoring layout, steel length, deflection expectations, price.

Existing steel length and bearing. If the lintel ends are exposed — and on a failing lintel they often are, because the bearings are where the damage shows — measure the overall steel length. Subtract the clear span and divide by two: that's the bearing length per side. Write it down, and then judge it. The field rule for bearing minimums: a lintel should bear at least 4 inches on solid masonry at each end, and on commercial spans, 6 to 8 inches is the professional standard — more for wide spans and heavy loads. If the existing bearing is 2 inches of crumbling brick, you've found one of the failure causes, and the replacement needs longer steel, rebuilt bearings, or both. Bearings get rebuilt with solid masonry — full brick or block, solidly mortared — never with a smear of mortar under the steel and a prayer.

Steel size and configuration. Measure the existing steel: leg sizes of the angle (a 4x4x3/8 angle is four-inch legs,

three-eighths thick), or the channel depth and flange width, or the plate dimensions. Measure the thickness with calipers if you can — rust scale lies about thickness, so clean a spot to bright metal before you measure, or measure where the steel was protected. Note the configuration: single angle, double angle (one per wythe), channel, or built-up. The existing size is information, not a spec — the original steel failed, so "same as what was there" is not automatically the right answer. The replacement gets sized for the actual load, and on anything commercial, that sizing comes from the engineer.

Wall thickness and wythes. Measure the full wall thickness: outer brick wythe, cavity, backup wythe. The replacement steel has to support every wythe it carries. On a cavity wall, the classic replacement is a double angle — one leg under each wythe — tied together, with the cavity flashing running over the top (Chapter 8). Measure the cavity width too; it matters for the flashing detail. And note the brick dimensions — modular, queen, king, old Chicago common — because the courses you rebuild above the new steel have to match.

Courses above and load height. Count the brick courses from the top of the lintel to the top of the wall or to the next relieving point (a floor line, a shelf angle, a bond beam). This is the load height — the triangle or rectangle of masonry the lintel carries. More courses, more load. A parapet above the opening counts double in your thinking, because parapets catch wind and leak water. Write the number down; the engineer will want it.

Opening height and head clearance. Measure from the sill or floor to the underside of the existing steel. The replacement has to maintain the clear head height — on a storefront or a garage door, losing two inches of clearance to a deeper steel section can be a real problem (Chapter 10). If the engineer calls for a deeper section than what was there, the head clearance conversation happens before the steel is ordered, with the owner, in writing.

Condition mapping. This is the part most measurers skip. Map the damage: where the rust is worst, where the jacking has displaced brick, where the bearings have failed, where previous repairs hide. Chalk it on the wall, photograph it, sketch it on your survey form. The condition map becomes the demolition plan — it tells you which brick comes out, which stays, and where the surprises probably are.

From measurements to spec. The replacement spec is a short document — one page — that says exactly what's going in: steel type and size (per engineer), overall length, bearing length each side, bearing rebuild requirements, primer/coating spec, flashing and weep spec, mortar type and color-match requirements, and the shoring plan reference.

One page. Everybody on the job works from it: you, your crew, the engineer, the owner. When the property manager asks "what exactly are you putting in," you hand them the spec sheet, not a shrug. Professionals spec; amateurs describe.

A note on ordering steel: order it after the spec is final, not before. Steel has lead time — cutting, priming, sometimes galvanizing — and a job stalled waiting on steel with shoring standing in a parking lot is a job that's burning money and patience. The survey-to-spec-to-order pipeline is: measure, engineer review, spec, order, schedule. In that order. Every time.

The pre-demolition verification. One last measurement, and it's the one that saves jobs: before the old steel comes out, verify the new steel against the opening. Lay it on the ground, measure it against your survey numbers. Length right? Bearing right? Configuration right? Primer on? This takes ten minutes and it catches the fabrication error while it's still a phone call, not a crisis under a shored wall.

Field Notes

- Measure during the survey, calmly: clear span (top and bottom), existing steel length, bearing length per side, steel size and configuration, wall thickness and wythes, courses above, head clearance.
- Bearing minimums: 4 inches absolute minimum on solid masonry; 6–8 inches the commercial standard; more for wide spans.
- Clean rust to bright metal before measuring steel thickness — scale lies.
- The existing size is information, not a spec; the replacement gets sized for the actual load, by the engineer on commercial work.
- Count courses above the lintel to the next relieving point — that's the load height the engineer needs.
- Protect head clearance on storefronts and garage doors; deeper steel needs an owner conversation before ordering.
- Map the damage in chalk and photos — the condition map becomes the demolition plan.
- Write a one-page replacement spec; order steel after the spec is final; verify the fabricated steel against the survey before demolition.

Chapter 7: The LintelLOCK System: A Field-Developed Replacement, Step by Step

Everything you've read so far — the failure modes, the

reading, the rust, the shoring, the measuring — converges here. This chapter is the LintelLOCK system: my field-developed, purpose-built lintel replacement system, laid out step by step exactly as it runs on a real job.

First, what it is and what it isn't. LintelLOCK is a complete replacement method I developed over fifty years of pulling failed lintels out of Texas walls — the steel specification approach, the bearing rebuild standard, the flashing and weep integration, the corrosion-protection protocol, and the installation sequence, all worked out as one system instead of five separate guesses. Field-developed means every piece of it was born on a job site: the primer spec came from watching bare steel die in ten years and primed steel live; the flashing detail came from opening walls and seeing where the water actually traveled; the bearing standard came from shoring walls where the original bearings had turned to powder. Purpose-built means it was designed from the ground up for exactly one job — replacing a failed lintel so it never fails the same way again. It is not a patch, not a coating, not a bolt-on bandage. It is a full replacement, done to a standard.

What it isn't: it isn't a substitute for engineering. On commercial spans, the steel sizing in a LintelLOCK replacement comes from the structural engineer — the system tells you how to replace, the engineer tells you what size to replace with. That division of labor is deliberate and it's permanent. Anybody who tells you a replacement system doesn't need engineering on a loaded commercial opening is selling you something.

Here is the system, step by step.

Step 1: Survey and spec. Chapters 2 and 6 are the LintelLOCK survey protocol — the opening survey form, the measurement set, the condition map, the one-page replacement spec. Nothing in this system starts without the spec on paper. The spec locks the steel size (engineer-sized), the length, the bearing rebuild, the primer, the flashing, the weeps, and the mortar. This is the step that prevents every downstream argument.

Step 2: Engineer review and steel order. The spec goes to the structural engineer for review and steel sizing confirmation. Then the steel is ordered — cut to length, and it goes into corrosion protection before it ever sees the job site. That's a LintelLOCK rule: steel gets protected in the shop, not in the field. Field priming happens on ladders, in wind, over dirt; shop priming happens right. The protection protocol: clean to bright metal (near-white blast or equivalent mechanical cleaning), then a zinc-rich primer, full coverage, both faces, edges, ends — the ends especially, because the bearing pockets are the wettest place the steel will ever sit.

On high-exposure jobs — coastal influence, irrigation zones, parapet-fed walls — the spec can call for galvanizing under the primer. Belt and suspenders is cheap compared to doing the job twice.

Step 3: Shoring installation. Chapter 5 is the LintelLOCK shoring standard — needles and strongbacks or post-and-strongback per the engineer's shoring plan, plumb posts, braced frames, real footings, preload and verify. The system adds one discipline: the shoring stays up through the full mortar cure, not just through the steel setting. Premature shoring removal — pulling support before the bearing mortar has gained strength — is one of the quiet killers of replacement jobs. The wall settles a sixteenth of an inch onto green mortar, the bearings crush slightly, and you've built in the next failure. LintelLOCK shoring comes down on schedule, gradually, after cure — never early for convenience.

Step 4: Controlled demolition. The failed steel comes out in a planned order, and the masonry that the condition map marked for removal comes out with it. Cut, don't pry — prying transmits shock into the shored wall. The bearing pockets get cleaned out to solid masonry; everything soft, spalled, or powdered comes out until you're looking at brick you can trust. This is also the moment of truth for the survey: if the wall section differs from what you measured — a hidden wythe, a different cavity, worse bearing damage — stop, re-measure, and adjust the spec before the new steel goes in. The system would rather lose an hour to re-verification than a decade to a wrong assumption.

Step 5: Bearing rebuild. The bearings are rebuilt first, before the steel arrives at the opening — because the steel has to land on cured, solid support. Rebuild with solid masonry units, fully mortared, to the bearing length in the spec. The bearing surface gets leveled — a steel lintel rocking on a high spot is a lintel loading one corner, and that's how bearings fail. Dry-pack or high-strength mortar beds the steel; shims are steel, not wood, not mortar blobs. Wood shims rot and compress. Mortar blobs crush unevenly. Steel shims, full bearing, level — that's the standard.

Step 6: Flashing first, steel second. This is the step that separates a LintelLOCK replacement from an ordinary steel swap, and it's the one most replacements skip. The through-wall flashing goes in above where the steel will sit — before the steel, not after. The flashing is a continuous membrane (self-adhered or metal, per the spec) that catches water in the cavity and directs it out through the weeps. It laps correctly, it's sealed at penetrations, and it extends past the ends of the steel so water can't run around the ends into the bearing pockets. Then the steel goes in, sitting under the flashing's drip edge. The order matters: flashing first means

the flashing is continuous and unbroken; steel first means you're trying to tuck flashing around steel, which means gaps, which means water on steel, which means you're back to Chapter 3 in fifteen years.

Step 7: Steel setting. The protected steel is set onto the rebuilt bearings, leveled, checked for full bearing contact, and shimmed with steel shims where needed. On double-angle configurations, the angles are tied together per the spec so they act as a unit. The steel gets a final inspection before any masonry goes back: primer intact (touch up any handling damage — a scratch through the primer is a rust starter), length and bearing verified, level confirmed. Only then does the wall close up.

Step 8: Masonry restoration. The brickwork above the opening is rebuilt or repointed to the condition map — displaced brick reset, jacked courses taken down and relaid true, mortar matched to the wall (color, texture, joint profile — the invisible standard). Weeps go in as the masonry goes up: open head joints with weep vents or wicks at the flashing level, spaced per the spec, kept clear of mortar droppings. A weep clogged with mortar is a decoration, not a drain. This is also where the water management from Chapter 11 gets built in — but the flashing and weeps are placed now, in this step, while the wall is open.

Step 9: Cure, then unload. Mortar cures. The shoring stays up while it does — the full cure period per the mortar spec, longer in cold or wet weather. Then the shoring comes down gradually, in reverse order, watching for movement. A final deflection check against the Chapter 2 baseline proves the opening is true. The wall gets a final wash-down, the site gets cleaned to the occupied-building standard (Chapter 9), and the crack monitors — if any were left — get a final reading.

Step 10: Document and warranty. Photographs of every step — the failed steel, the bearing rebuild, the flashing, the steel setting, the finished wall — go into the job file with the spec, the engineer letter, and the measurements. The owner gets the warranty in writing (Chapter 12 covers the framing). The documentation isn't paperwork for its own sake; it's the proof that the system was followed, and it's what makes the warranty mean something.

That's LintelLOCK: survey, engineer, protected steel, proper shoring, controlled demolition, rebuilt bearings, flashing before steel, careful setting, masonry restoration with working weeps, full cure before unloading, and documentation. Ten steps, in order, no shortcuts. Any one of them skipped is a future failure with your name on it. All of them done is a lintel that outlives the mortgage.

A final word on where LintelLOCK fits and where it doesn't. It fits any failed-lintel replacement where the wall above can be shored and the opening rebuilt — residential, commercial, garage, storefront. It doesn't fit walls that are moving for other reasons (foundation settlement — different trade), buildings where the structure above the opening can't be shored safely (get the engineer involved early), or situations where the owner wants the cheapest possible patch (that's not this system, and I'd rather walk away than put my name on a patch). The system has a standard, and the standard doesn't bend for budgets. It bends for nothing.

Field Notes

- LintelLOCK is a complete replacement method: spec → engineer review → shop-protected steel → proper shoring → controlled demolition → rebuilt bearings → flashing before steel → careful setting → masonry restoration with working weeps → full cure → documentation.
- Steel gets corrosion protection in the shop (clean to bright metal, zinc-rich primer, ends especially), never as an afterthought in the field.
- Flashing goes in BEFORE the steel — continuous, lapped, extending past the steel ends.
- Bearings are rebuilt to solid, level masonry with steel shims — never wood, never mortar blobs.
- Shoring stays up through the full mortar cure; premature removal builds in the next failure.
- Weeps go in as the masonry goes up, kept clear of mortar droppings — a clogged weep is a decoration.
- The system doesn't replace engineering: the engineer sizes the steel on commercial spans; the system governs how it's replaced.
- LintelLOCK doesn't fit moving foundations, unshoreable structures, or patch-budget jobs — the standard doesn't bend.

Chapter 8: Bearing and Flashing: Where Most Replacement Lintels Fail First

If Chapter 7 was the system, this chapter is the autopsy of everyone else's system — because when a replacement lintel fails, it almost always fails in one of two places: the bearing or the flashing. Not the middle of the span. Not the steel size. The ends and the water management. The two details that are invisible when the job is finished and decisive over the next twenty years.

Bearings: the whole load on a few square inches.

Everything the lintel carries — the brick, the parapet, the

sign, the roof load — funnels down through the steel and into the masonry at two small patches, one at each end. The bearing stress there is the highest stress in the whole assembly. Get the bearing right and the lintel lives. Get it wrong and nothing else matters.

The failure modes at the bearing are brutally simple. Too short: the original bearing was two or three inches on crumbling brick, the load crushed the masonry, and the steel end dropped — taking the opening's corner down with it. The fix is length: 6 to 8 inches of bearing on solid masonry for commercial spans, per the spec, with the steel sized long enough to achieve it. Too soft: the bearing brick was spalled, underfired, or powdered by decades of water, and it crumbled under the concentrated load. The fix is rebuild: take out everything soft until you reach solid units, and rebuild with full, solid masonry — not a parge coat over rot. Unlevel: the steel sat on a high spot, rocking, loading one corner of the bearing. The fix is a level bed — dry-pack or high-strength mortar, screeded true, with steel shims for final adjustment. Unprotected: the steel end sat in a damp pocket of mortar with no coating, and the bearing end rusted first and fastest — because the pocket is the wettest place in the wall. The fix is the shop primer carried all the way to the ends, plus flashing that extends past the steel ends so water can't run around into the pockets.

There's a detail here that separates professionals from everyone else: the bearing pocket gets flashed too. A small piece of flashing membrane under the steel at each bearing — a slip sheet that breaks the mortar-to-steel contact and sheds any water that reaches the pocket outward — costs almost nothing and removes the wettest corrosion site in the assembly. It's a five-minute detail during installation and a twenty-year detail in service.

Flashing: the water's exit route. A lintel without flashing is a steel bar sitting in a waterfall it can't see. Water enters the wall above — through the parapet, through mortar joints, through the cavity — runs down inside the wall, hits the top of the steel, and parks there. With flashing, that water lands on a membrane, runs sideways along it, and exits through weeps to the outside. Without flashing, it lands on bare steel and starts Chapter 3.

The flashing detail has four requirements, and all four are non-negotiable. Continuous: one unbroken membrane across the full opening, end to end. Patches, gaps, and "we'll lap it later" are leaks waiting for rain. Lapped correctly: upper pieces over lower pieces, shingle-fashion, so water running down can't get behind the membrane. Backwards laps are funnels, not flashing. Extended past the steel ends: the flashing runs beyond each end of the lintel — typically 6

inches or more past the steel — and turns down or out at the ends (end dams), so water riding the flashing can't run off the end and into the bearing pocket. This is the detail that kills most DIY flashing: the middle is perfect and the ends dump water exactly where it does the most harm. Integrated with the weeps: the flashing's low edge sits at the weep level, and the weeps are open, clear, and spaced to drain — because flashing that catches water and has nowhere to send it is a bathtub, and bathtubs overflow into walls.

On cavity walls — the standard commercial section — the flashing also has to manage the cavity. Water running down the inside face of the outer wythe, water crossing on mortar droppings and ties, water condensing on the backup wall — all of it lands on the flashing at the lintel level. The flashing needs to span the full cavity, from the outer face to the backup, with the weeps draining the outer portion. Mortar droppings in the cavity are the enemy here: a clump of mortar bridging the cavity at the flashing level dams the water and defeats the whole detail. Keep the cavity clean at the flashing line. On the way up, that's a discipline item for the crew, not a hope.

The weep system. Weeps are the drain holes, and they only work if they're open. Open head joints — every few joints at the flashing level — with weep vents, wicks, or tubes that keep mortar out and let water out. Spacing per the spec; keep them clear during construction by stuffing the openings or using formed vents, and verify each one flows before the scaffold comes down. A weep you can't verify is a weep you don't have. On occupied commercial buildings, weeps also need to be inconspicuous and pest-resistant — vents with baffles, not open holes inviting wasps. Details matter at the tenant's eye level.

Integration with the wall above. The flashing at the lintel doesn't live alone — it has to tie into whatever water management exists above it. If there's cavity flashing at a floor line or a shelf angle above, the lintel flashing laps under it. If the parapet has coping or cap flashing, the wall's water story starts there, and the lintel flashing is one chapter in it. Think of the wall as a watershed: water enters at the top and at every penetration, and every horizontal interruption — shelf angles, lintels, sills — needs a flashing that catches and releases. The lintel detail is only as good as the watershed above it. If the parapet cap is failed and dumping water into the wall, say so in the spec and price the cap repair with the lintel — fixing the lintel while the parapet pours water in is Chapter 3 on repeat.

Inspection before close-up. The system's discipline, restated because it matters: before the masonry closes over the new steel, the flashing gets inspected — photographed, in

fact. Continuous? Lapped right? Extended past the ends with end dams? Weeps open and at the right level? Primer intact on the steel? Bearings solid, level, full contact? This inspection takes twenty minutes and it's the last time anyone will see these details for thirty years. After close-up, they're articles of faith. Make them articles of evidence instead.

Field Notes

- Replacement lintels fail at the bearings and the flashing — the two invisible details. Master both.
- Bearings: 6-8 inches on solid masonry for commercial spans; rebuild everything soft to solid units; level beds; steel shims only.
- Prime the steel ends — the bearing pockets are the wettest corrosion site in the assembly.
- Flash the bearing pockets: a slip-sheet membrane under each steel end breaks mortar contact and sheds pocket water.
- Flashing must be continuous, lapped shingle-fashion, extended past the steel ends with end dams, and integrated with open, verified weeps.
- On cavity walls, span the full cavity and keep mortar droppings off the flashing line — droppings dam the water.
- Tie the lintel flashing into the watershed above: parapet caps, shelf-angle flashing, floor-line flashing.
- Inspect and photograph flashing, bearings, and primer before the masonry closes — it's the last look for thirty years.

Chapter 9: Brick Above, Business Below: Phasing Work in Occupied Commercial Buildings

The technical work is half the job. The other half is the choreography — doing structural masonry work over the heads of people running businesses, without shutting them down, without covering their merchandise in dust, and without turning the property manager's phone into a complaint line. This chapter is the phasing discipline: how to run a lintel replacement in an occupied commercial building like a professional.

Start with the tenant, not the wall. Before the spec is final, walk the job with the property manager and the tenant. Learn the business rhythm: when do they open, when is the rush, when are deliveries, where do customers enter, what's under the opening inside (merchandise, food prep, equipment that can't get dusty). A restaurant's lunch rush, a retail store's Saturday, a clinic's patient hours — these are immovable objects, and your schedule moves around them, not the

reverse. Write the constraints down and build the phase plan from them. The tenant who was consulted is an ally. The tenant who was surprised is an adversary. This costs you one meeting and saves you the job.

Phase the work by exposure. A lintel replacement has phases with very different impacts, and you schedule them by how much they disrupt the business. Survey and measuring: low impact, anytime. Shoring installation: moderate impact — equipment at the entrance, some noise, barricaded zones. Schedule it for off-hours or low-traffic windows. Demolition: high impact — dust, noise, vibration, falling debris contained but present. This is nights, early mornings, or closed days, period. On a restaurant, that's after close. On a retail store, that's Sunday morning or overnight. Price the off-hours work honestly — night and weekend labor costs more, and pretending otherwise just means you eat the difference. Steel setting and masonry: moderate impact — quieter, cleaner, but the opening is still a work zone. Cure and unload: low impact — the shoring stands, the wall is closed, business runs normally around it. Final clean and walkthrough: scheduled with the tenant, in daylight, when they can see the finished work.

Containment is a trade skill. Dust control on an occupied job isn't sweeping up afterward — it's preventing the dust from traveling in the first place. Poly sheeting barriers at the work zone, sealed at the edges; negative air or at least directed ventilation pulling dust away from the interior; debris chutes or controlled lowering instead of dropping; daily — not end-of-job — cleanup. On a food business, this isn't optional and it isn't casual: flour-dust-fine masonry dust in a kitchen is a health-code conversation nobody wants. Walk the containment plan with the tenant before demolition day. Show them the barriers. Let them see you're serious. Trust is built in the walkthrough, not in the apology.

Access and egress: the law and the lease. The building's entrances have to stay usable — that's fire code, ADA, and lease language all at once. Your barricades, shoring, and material staging cannot block the required egress path, and on a storefront job the shoring posts have a way of landing exactly where the door swing needs to be. Plan the shoring layout with egress on the drawing, not as an afterthought. If the work requires closing an entrance, that's a written agreement with the tenant and the property manager, with dates, hours, alternate routing, and signage — not a verbal "it'll just be a couple hours." A couple hours has a way of becoming a day.

Noise, vibration, and the neighbor tenants. A strip center isn't one tenant — it's six, and your demolition noise is their business problem. Notify in writing: what, when, how long,

and who to call. Keep the loudest work in the agreed windows. Vibration deserves its own mention: rotary hammers and demolition transmit through the structure, and the tenant two doors down with glass shelving will feel it. Warn them, schedule around their sensitive hours, and keep a contact number posted where every tenant can see it. The property manager who gets zero complaint calls during your job hires you for the next building.

Safety in the occupied zone. Barricades aren't suggestions — they're hard barriers with signage, keeping the public out of the drop zone and the shoring zone. Overhead protection where the public walks near the work: debris netting, catch platforms, or rerouted pedestrian paths. Lighting for any work zone that's active after dark. And a daily safety walk: barricades still up, shoring undisturbed, no public in the zone, signage legible. On a multi-day job, the barricade that was perfect on Monday gets leaned on, moved, and driven around by Wednesday. Walk it every day.

The communication protocol. One point of contact on your side, one on the property manager's side, one for the tenant. Daily updates during active phases — short, factual: what happened today, what's happening tomorrow, any change to the schedule. Bad news travels fast and early: if demolition reveals worse damage and the schedule slips, the property manager hears it from you within the hour, with the revised plan attached — not from the tenant, not the next day. Professionals deliver bad news early with a plan. Amateurs deliver it late with excuses.

Closeout as a business tool. The final walkthrough happens with the tenant and the property manager, in daylight, with the before-and-after photos in your hand. Walk the finished wall, show the weeps, show the clean site, confirm the door clearances and the operation of everything below the opening. Hand over the warranty letter and the documentation package. Then — and this matters — ask about the other openings. "We've done this one; when do you want me to look at the rest of the building?" The occupied-building job done well is the best sales call in this trade, because every tenant in that center just watched you work clean around their business. Leave them with a reason to call.

Consider a hypothetical composite scenario to tie it together: a corner restaurant in a 1980s retail center needs a twelve-foot storefront lintel replaced. The phase plan: survey on a Tuesday afternoon; shoring installed Sunday 6 AM–10 AM before the lunch setup; demolition Sunday night after close, 9 PM–2 AM, with full poly containment sealing the dining room; steel and flashing set the following Sunday night; masonry restoration across two weeknights after close;

cure week with shoring standing behind barricades at the entry (egress maintained via the side door, signed); shoring down the next Sunday morning; final walkthrough Monday at 10 AM with the manager, photos in hand. The restaurant never missed a service. The manager never fielded a customer complaint. That's the standard. Anything less is just construction happening near people.

Field Notes

- Walk the job with the property manager and tenant before finalizing the spec — learn the business rhythm and build the phase plan around it.
- Phase by impact: demolition at nights/closed days; price off-hours labor honestly.
- Containment is prevention: poly barriers, directed ventilation, controlled debris handling, daily cleanup — walk it with the tenant first.
- Never block required egress; entrance closures are written agreements with dates, hours, and alternate routing.
- Notify neighboring tenants in writing; manage vibration; post a contact number.
- Hard barricades, overhead protection, lighting, and a daily safety walk on every multi-day job.
- One point of contact per side; daily updates; bad news within the hour, with a revised plan.
- Closeout walkthrough with photos in hand, warranty letter delivered — then ask about the other openings.

Chapter 10: Garage Doors, Roll-Ups, and Wide Clearspans: The Special Cases

Most lintels live over windows and doors and behave themselves. Then there are the special cases — the wide clearspans where the rules change, the margins shrink, and the standard details need upgrading. Garage doors, commercial roll-ups, and wide clearspans are where lintel work gets genuinely demanding, and this chapter is the field guide to each.

Residential garage doors: the wide span at home. A double-wide garage door opening runs sixteen feet — the widest span in most houses, carrying the full weight of the brick above it, often two stories of it on a two-story home. It's the closest thing residential work has to a commercial opening, and it fails like one: long spans deflect more, the steel works harder, and the rust-jacking cycle has more wall to destroy. The garage header also lives a hard life environmentally — car exhaust, moisture from vehicles, and on many homes, the garage is the least-conditioned space, so

the steel sees bigger temperature and humidity swings than a window lintel in a climate-controlled wall. Inspect garage headers on every residential survey, even when the call was about something else. The sixteen-foot span with a hairline stair-step at each corner is the most common "it's worse than it looks" in the trade.

Replacement on a garage header follows the LintelLOCK system straight through, with two garage-specific notes. First, head clearance: the garage door — especially a sectional door with its tracks and opener — needs every inch of the opening height. If the engineer specs a deeper steel section than the original, verify the door still clears before the steel is ordered, with the actual door hardware measured, not the brochure. A replacement that costs the homeowner two inches of door clearance is a callback wearing a hard hat. Second, the garage interior is usually unfinished — open studs, no drywall — which makes shoring easier (great access for needles and posts) but also means the shoring stands where cars, tools, and kids are. Barricade it like a commercial zone. Familiarity is not safety.

Commercial roll-up doors: the working opening. A roll-up door on a warehouse, shop, or service bay is an opening that works for a living — opening and closing dozens of times a day, with trucks backing to it, forklifts crossing it, and the door's own weight and mechanism loading the header dynamically. The lintel over a roll-up carries the masonry plus the punishment of an industrial doorway: vibration from the door mechanism, impact loads from the occasional truck kiss, and weather exposure on buildings that are often minimally maintained.

The failure signature here is deflection-plus-jacking: the steel sags under the working loads while the rust cycle attacks from the water side, and the two meet in the middle. Watch for the door itself telling on the lintel — a roll-up that starts binding, jumping its tracks, or needing frequent adjustment may be following a sagging header down. When the door company has been out three times and the door still won't run true, look up. The problem might be the twelve feet of steel above it.

Replacement detailing for roll-ups: the steel gets sized for the dynamic environment (engineer's call, and tell the engineer it's a working industrial door — that changes the loading assumptions), the flashing and weep detail gets the full commercial treatment because these walls are rarely maintained, and the door hardware gets re-verified against the new opening dimensions before close-up. Coordinate with the door company — they're a trade partner on this job, not a bystander. The door comes off or gets secured during the work, and it goes back on a true opening.

Wide clearspans: where the margins shrink. Past sixteen feet or so — long storefronts, wide industrial openings, multi-bay headers — you're in wide-clearspan territory, and three things change. First, deflection controls the design more than strength: the steel has to be stiff enough not to sag visibly under load, which often means a deeper or heavier section than strength alone would require. A lintel that's strong enough but too flexible will crack the masonry above it just by moving — the brick can't follow the steel's flex, so the joints open. Stiffness is a serviceability requirement, and on wide spans it's the boss. Second, the bearing loads get serious — the reactions at each end of a twenty-foot span carrying two stories are not "a few bricks" numbers, they're real structural loads, and the bearing rebuild becomes structural masonry work, not cosmetic. Third, the shoring plan gets complex: more needles, heavier posts, longer durations, and absolutely engineer-designed. This is not the job to learn shoring on.

On wide clearspans, I also want a pre-construction meeting with the engineer, the owner, and the general contractor if there is one — everybody looking at the same drawings, the same phase plan, the same schedule. Wide-span work has too many interfaces (structure, masonry, flashing, doors, tenants) for hallway conversations. One meeting, one plan, one document.

The multi-wythe and deep-wall special case. Some commercial openings sit in thick walls — twelve, sixteen inches of masonry, multiple wythes, sometimes with a concrete beam or a steel shape buried in the original construction that nobody documented. When you open a deep wall, be ready for surprises: hidden steel, old relieving angles, timber lintels in truly old buildings (yes, wood — in pre-war commercial buildings, timber lintels over openings are still out there, and they fail by rot, not rust). The survey has to determine the full wall section before the spec is written, and on deep or old walls, that means opening an inspection hole — a small, controlled removal that shows you the section — during the survey phase, not discovering it during demolition. Surprises during demolition are expensive. Surprises during survey are information.

Fire ratings and code. Commercial openings sometimes sit in fire-rated assemblies, and the replacement has to maintain the rating — the steel protection, the masonry restoration, and any penetration sealing all play into it. This is building-code territory: know the occupancy, know the rating requirement, and verify the replacement detail maintains it. When in doubt, the building official and the engineer are your guides, not your memory of the last job. Code compliance isn't optional on commercial work, and "the old one wasn't compliant either" is not a defense.

The "while we're in there" conversation. Wide openings and special cases are expensive to mobilize — shoring, phasing, off-hours labor — so the per-opening cost drops when you do several at once. When the survey finds one failed lintel on a building with six similar openings of the same age, have the honest conversation with the owner: the mobilization is the expensive part, and the other five are the same age, the same steel, the same water. Doing them as a program — this year, next year, phased by budget — is almost always cheaper than six separate emergencies. You're not upselling; you're doing the math out loud. Property managers respect the math.

Field Notes

- Garage headers (16-foot double-wide) are the widest residential span — inspect them on every survey; verify door clearance against any deeper replacement steel before ordering.
- Roll-up doors work for a living: dynamic loads, vibration, impact — a binding door may be following a sagging header; coordinate with the door company as a trade partner.
- Wide clearspans (past ~16 feet): deflection/stiffness controls over strength; bearing loads get serious; shoring is engineer-designed, always.
- Deep and old walls hide surprises (buried steel, timber lintels, undocumented sections) — open an inspection hole during survey, not demolition.
- Maintain fire ratings on rated assemblies; verify with the building official and engineer.
- Mobilization is the expensive part: propose multi-opening programs on buildings with same-age lintels — do the math out loud.

Chapter 11: Mortar, Weeps, and Water: Keeping the New Lintel Alive for Decades

You can install the perfect steel — right size, shop-primed, perfect bearings, textbook flashing — and still lose it in fifteen years if the water management is wrong. This chapter is the long game: the mortar, the weeps, and the water discipline that decide whether your replacement lasts fifteen years or fifty.

Mortar: match the wall, respect the brick. The masonry restoration above a new lintel has to match the existing wall — color, texture, and joint profile, the invisible standard. But it also has to behave like the wall. On older buildings with soft brick and lime-rich original mortar, the restoration mortar

must be softer than the brick — never harder. A hard portland patch in a soft lime wall doesn't move with the building; it grinds the surrounding original mortar and can spall the faces off soft brick within a few freeze-thaw cycles. Match the mortar family, not just the look: if the original is a soft lime mortar, the repair is a lime-rich mix. If the wall is modern hard brick with Type N original, Type N restoration is honest. The screwdriver, knife, and vinegar field tests from the mortar trade still apply — read the original before you mix the repair.

There's a lintel-specific mortar discipline too: the bed joints directly above and below the flashing, and the mortar at the bearings, need to be full and solid — no voids, no honeycombing. Voids at the flashing level become water pockets. Voids at the bearings become crush points. Tool every joint fully, and keep mortar out of the weeps and off the flashing's drainage path. The mason's habits at the lintel line are the waterproofing.

Weeps: the drains that only work when they're open.

Weeps are simple — openings at the flashing level that let water out — and they're the most commonly defeated detail in masonry. They get defeated during construction, when mortar droppings clog them, and they get defeated over time, when insects nest in them, when well-meaning maintenance crews caulk them shut ("those holes look unfinished"), and when landscaping buries them. Every one of these is preventable.

The construction discipline: form the weeps with vents, wicks, or tubes as the masonry goes up — don't try to punch them out afterward. Keep the cavity and the flashing line clear of mortar droppings; a clean cavity drains, a dirty one dams. Verify each weep flows before the scaffold comes down — a puff of air, a trickle of water, something that proves the path is open. Then tell the owner what the weeps are and why they must never be caulked, painted shut, or buried. Put it in writing. I've seen five-year-old replacements with every weep caulked by a painter who thought he was doing a favor. Education is part of the waterproofing.

Weep placement matters: at the flashing level, spaced per the spec, and — the detail from Chapter 8 — the flashing must actually deliver water to the weeps. A weep three feet from the flashing's low point with a mortar dam in between is a hole in the wall, not a drain. Think of each weep as the mouth of a little gutter; the flashing is the gutter, and it has to slope and run to the mouth.

The watershed above. The lintel flashing is one chapter in the wall's water story, and the story starts at the top. Walk the watershed: parapet caps and coping — intact, sloped, sealed? If the cap is failed, water pours into the wall core and

no lintel flashing downstream can handle the volume. Through-wall flashing at floor lines and shelf angles above — present, functional, draining? If the wall above dumps its cavity water onto your lintel flashing, you've inherited someone else's leak. Penetrations — sign mountings, conduit, pipes, anchors — sealed? Every penetration is a hole in the watershed, and unsealed ones feed the wall. The honest spec addresses the watershed, not just the opening. Sometimes that means the lintel job includes a parapet cap repair. Sometimes it means a second phase next quarter. What it never means is pretending the lintel lives in isolation. Water doesn't respect scope boundaries.

Grade, irrigation, and the ground game. Water doesn't only come from above. On low commercial openings — especially garden-level storefronts and garage headers near grade — irrigation and grade are lintel killers. Sprinkler heads hitting the wall daily keep the bottom of the wall saturated; saturated masonry wicks water up to the steel. Grade sloping toward the building ponds water against the wall. Mulch piled against the brick holds moisture against it permanently. The fix is unglamorous and cheap: redirect the sprinklers, regrade the soil, pull the mulch back. Put it in the closeout letter. The owner who spends thousands on a lintel replacement and keeps the sprinklers hammering the wall is watering their own failure.

Sealants: where they help and where they hurt. Sealant (caulk) belongs at the perimeter of the opening — the joint between the masonry and the door/window frame, the joint between dissimilar materials — where it keeps wind-driven rain out of the assembly. Sealant does not belong on weeps, on flashing drip edges, or smeared across the masonry face as "waterproofing." And no surface-applied "waterproofing" coating fixes a failed flashing detail — coatings slow absorption through the face, but the cavity water, the parapet water, and the penetration water all bypass the face entirely. Coatings are a supplement to drainage, never a substitute. If someone proposes coating the wall instead of flashing the lintel, they're proposing paint instead of plumbing.

The maintenance conversation. A LintelLOCK replacement is built for decades, but decades require a little attention. The closeout package includes a maintenance sheet — one page, plain language: keep weeps open and unburied, keep sprinklers off the wall, keep grade sloping away, don't caulk the weeps, call us if you see stair-step cracking or rust bleed. Annual walk-around recommended; we offer it as a service. This isn't warranty fine print — it's the owner's manual for the decades you just built. Owners who get the manual maintain the asset. Owners who don't, don't.

The fifty-year mindset. Here's the thought I want you to

carry: every lintel you replace will outlive your involvement with the building. You'll be retired or gone and that steel will still be holding that wall — or it will have failed again, because of a detail you chose. The mortar you mix, the weep you keep open, the flashing lap you get right, the sprinkler you redirect — these are fifty-year decisions made in an afternoon. Make them like the building is yours. In a way, with your name on the warranty, it is.

Field Notes

- Restoration mortar must match the wall's family (soft lime to soft lime) — never harder than the brick; test the original before mixing.
- Bed joints at the flashing and bearings must be full and solid — no voids; keep mortar out of weeps and off the drainage path.
- Form weeps during construction, keep the cavity clean, verify each one flows before close-up — then teach the owner never to caulk, paint, or bury them.
- Walk the watershed: parapet caps, upper flashing, penetrations — the lintel detail inherits every leak above it; spec the watershed, not just the opening.
- Redirect sprinklers, regrade soil, pull mulch back — the ground game is cheap and decisive.
- Sealant belongs at frame perimeters, never on weeps or flashing edges; coatings supplement drainage, never substitute for it.
- Deliver a one-page maintenance sheet at closeout; offer the annual walk-around.
- Fifty-year decisions get made in an afternoon — make them like the building is yours.

Chapter 12: Pricing, Warranties, and Talking to Property Managers: The Business Side

You can be the best lintel man in Texas and go broke if you can't price the work, warrant it honestly, and talk to the people who sign the checks. This chapter is the business side — the part of the trade they don't teach on the scaffold.

Pricing: from the costs up, never from the fear down.

Lintel replacement pricing starts with real costs, added up honestly. Labor: the crew hours for survey, shoring, demolition, steel setting, masonry restoration, and cleanup — plus the off-hours premium when the phase plan demands nights and weekends (Chapter 9). Materials: the fabricated and primed steel, flashing membrane, weep components, masonry units, mortar materials, shoring consumables. Equipment: shoring rental or ownership cost, scaffolding,

containment materials, debris disposal. Engineering: the structural engineer's fee for steel sizing and shoring design — a real line item, passed through transparently. Overhead: insurance, vehicles, office, the cost of being in business. And profit — real profit, not the leftover after everything else. A lintel contractor who doesn't price profit is a charity with a trowel, and charities don't warranty anything.

The pricing structure matters as much as the number. I price lintel work per opening, with the scope spelled out: what's included (survey, engineering coordination, shoring, demolition, steel, flashing, weeps, masonry restoration, cleanup, documentation, warranty) and what's excluded (unforeseen structural damage beyond the condition map, watershed repairs above the opening unless specified, door/hardware work by others). Per-opening pricing lets the property manager compare, budget, and approve — and it lets you offer the multi-opening program from Chapter 10 at a sensible per-unit price that reflects the shared mobilization. Never price "time and materials" on a fixed-scope replacement unless the unknowns genuinely justify it; owners read T&M as a blank check, and blank checks don't get signed.

Hold your price. The property manager will ask for a discount — it's their job. Your job is to know what the work costs and what it's worth, and to say so plainly. The discount conversation has exactly one honest answer: "I can reduce the scope" — fewer openings this phase, standard primer instead of galvanized-plus-primer where the exposure allows it, owner handles the painting. Never reduce the standard: the flashing, the bearings, the cure time, the shoring. Those aren't negotiable because they're the difference between a replacement and a future failure. A cheaper price with the standard intact is a scope conversation. A cheaper price with the standard cut is a different, worse job — and I'd rather lose it than do it.

Warranties: promise what you control, exclude what you don't. A lintel replacement warranty covers workmanship: the steel was set per spec, the bearings rebuilt solid, the flashing installed continuous and lapped, the weeps open and draining, the masonry restored true. That's your work, and you stand behind it — in writing, for a defined term, with the remedy spelled out (we come back and make it right). What the warranty does not cover: building movement from foundation settlement, damage from new water sources the owner introduces (the sprinkler they reinstall against the wall), alterations by others, natural disasters, and normal weathering of mortar and sealants. Write the exclusions plainly — not to dodge responsibility, but to define it. A warranty that promises everything is a warranty that means nothing; a warranty that promises your workmanship

precisely is a document a property manager can take to their owner.

The warranty has a quiet superpower: it forces you to do the work right. Every detail in this book — the flashing laps, the bearing rebuild, the cure time — is easier to skip than to do. The written warranty, with your name on it, is the reason you don't skip. Sign it like you mean it, because you'll be living with it for the term.

Talking to property managers: their language, not yours. Property managers don't buy masonry; they buy risk reduction, budget certainty, and quiet tenants. Talk in those terms. Risk reduction: "Here's the condition map, here's the engineer's letter, here's the spec — this is what's failing, this is what happens if it waits, this is what we put in." Budget certainty: per-opening pricing, written scope, the multi-opening program math, no surprise change orders unless the demolition reveals documented unknowns (and the process for handling those is in the agreement before work starts). Quiet tenants: the phase plan from Chapter 9, presented as a schedule they can hand to the tenant — "your restaurant never misses a service." The manager who can forward your one-page plan to the owner and the tenant without editing it is the manager who hires you.

Bring the evidence. Before-and-after photos from previous jobs (with permission — never a customer's building without their okay). The spec sheet. The engineer letter. The warranty document. The maintenance sheet. Property managers are professional skeptics; they get pitched weekly. Evidence beats adjectives. And never trash-talk the previous contractor or the original builder — "the original steel was never flashed, which was standard practice when this was built" is a fact; "the last guy was an idiot" is unprofessional and it makes the manager wonder what you'll say about them later.

The agreement. Every job gets a written agreement — one or two pages, plain language, both sides sign. Scope in measurements and the spec reference. Price per opening and total. Payment in thirds: a deposit to order steel and schedule (never the full amount up front — that's the customer's protection and your professionalism), a progress payment when the steel is set and the wall is closed, the balance on final walkthrough and acceptance. Schedule with phase dates. The change-order process: demolition reveals X, here's the documented condition, here's the additional price, sign here before we proceed — no verbal change orders, ever. The warranty terms. The maintenance sheet attached. This document is the job. Everything else is conversation.

Estimates are free; surveys are not. Here's a business rule that took me years to learn: the drive-by estimate is free — a

look, a conversation, a rough number. The full opening survey — measurements, condition map, deflection readings, the written spec — is professional work product, and it's billable, credited against the job if they proceed. This does three things: it compensates your expertise, it filters out the price-shoppers who were never going to hire anyone, and it gives the serious owner a document worth paying for. The survey that finds sound lintels and prescribes protection instead of replacement (Chapter 3) is worth every penny of its fee — and it's the survey that gets you called back for the whole portfolio.

The portfolio conversation. One building is a job. A portfolio is a business. When you've done one opening well — phased clean, documented, warranted — ask for the portfolio walk: "Let me survey your other buildings. Same survey, same spec format, prioritized by urgency, priced per opening, phased by budget." Property managers with multiple buildings are drowning in deferred maintenance and starving for a contractor who brings them a plan instead of a pitch. Be the plan. The portfolio survey is the highest-value work in this trade: it turns one job into five years of scheduled work, and it turns you from a vendor into their lintel guy.

Consider a hypothetical composite scenario: a manager oversees four 1970s retail centers, each with six to ten storefront openings. You survey one building (billable survey, credited on award), find two failed lintels and three more in early jacking, and deliver a prioritized program: this year's two replacements, next year's three protections-or-replacements, per-opening pricing, phased around tenant schedules, one agreement per phase. The manager takes your one-page program summary to the owner. The owner sees risk quantified, budget phased, tenants undisturbed. You didn't sell a job. You sold a five-year plan. That's the business.

Field Notes

- Price from the costs up: labor (with off-hours premium), materials, equipment, engineering passthrough, overhead, and real profit — per opening, scope spelled out, inclusions and exclusions in writing.
- Hold your price: discounts come from scope reduction, never from cutting the standard (flashing, bearings, cure, shoring).
- Warranty workmanship precisely, in writing, with remedy and term; exclude plainly what you don't control (settlement, new water sources, alterations, disasters, weathering).
- Talk to property managers in their language: risk reduction, budget certainty, quiet tenants — evidence beats adjectives; never trash-talk previous work.

- Written agreement on every job: scope, price, thirds payment, phase dates, change-order process, warranty, maintenance sheet.
- Estimates are free; full surveys are billable professional work, credited on award — it filters shoppers and values your expertise.
- Turn one building into a portfolio: the prioritized multi-building program is the highest-value work in the trade.

Conclusion: The Opening Is the Whole Building

Here's the thought I want to leave you with: the opening is the whole building, in miniature. Every force the wall knows — gravity, water, heat, time — concentrates at the lintel. Read the opening and you've read the building's honesty about itself. Fix the opening right and you've fixed the building's hardest problem.

Carry these forward:

Respect the span. Commercial openings are not big residential openings. The loads, the deflection, the consequences — everything scales past the point where residential habits work. Measure it, engineer it, shore it like the weight it is.

Rust is the enemy, water is the cause. Every lintel failure in this book traces back to water reaching steel. The replacement that doesn't manage water is a countdown, not a repair. Flashing, weeps, watershed, grade — the water discipline is the job.

Bearings and flashing are the whole game. The middle of the span gets the attention; the ends and the water get the failures. Rebuild the bearings solid, flash continuously past the ends, verify the weeps. The invisible details are the decisive ones.

Shore it like lives depend on it — because they do. Proper shoring, preloaded, on real footings, standing through the full cure. No freelancing, no shortcuts, engineers where the span or the occupancy demands it.

Phase it like a professional. The tenant's business is not an obstacle to the work — it's the context the work happens in. Consult early, contain the dust, protect the egress, communicate daily, close out with photos in hand.

Price it like a business. Costs up, scope in writing, thirds payment, hold the standard. The discount comes from scope,

never from the details that make it last.

Warrant it like your name is on it — because it is.

Promise your workmanship precisely, exclude what you don't control, and let the written warranty be the reason you never skip the flashing lap.

Think in portfolios. One opening is a job. A surveyed, prioritized, phased program across a manager's buildings is a career. Be the plan, not the pitch.

The hypotheticals in this book were invented for teaching. The steel, the rust, the water, and the work are real. Fifty years in Texas brick taught me that the lintel is where the building tells the truth — and the man who listens, measures, and does the details right gets to sign his name under decades of quiet, true openings.

Now go read a wall.

— Travis

Resources & Next Steps

Travis Nech has spent 50 years in brick, masonry, and foundation work across Texas. He owns and operates Champion Brick Repair, Metro Foundation Repair, LintelLOCK, MortarMagic, and WhiteStone Construction.

- Champion Brick Repair — brick & masonry repair, Dallas-Fort Worth — championbrickrepair.com — (817) 900-6324
 - Metro Foundation Repair — pressed concrete pile foundation repair — metrofoundationrepair.com — (817) 523-1540
 - LintelLOCK — the field-developed lintel replacement system — lintlerepair.com — (469) 730-0650
 - MortarMagic — mortar color matching & the Mortar Bucket — mortarmagic.netlify.app
 - WhiteStone Construction — stone, ranch & property work, Hamilton TX country — (254) 723-5040
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About the Author

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