TORONTO ELECTRICAL REPAIR

Wiring & Rewiring

Knob-and-tube removal, aluminum wiring remediation, whole-home rewiring, and circuit upgrades for Toronto-area homes

12 Expert Answers from Electric IQ

torontoelectricalrepair.com/construction-brain

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Q1

What permits and inspections are required to add new circuits during a condo renovation in downtown Toronto?

Adding new electrical circuits in a downtown Toronto condo requires an ESA (Electrical Safety Authority) permit, professional inspection, and condo board approval — this is not optional DIY work and involves coordination between multiple parties.

Any new electrical circuit in Ontario requires an ESA permit, regardless of whether you're in a detached home or a 42nd-floor condo unit. This includes adding new outlets, dedicated circuits for appliances, upgraded lighting circuits, or specialty circuits like those needed for home offices or entertainment systems. The permit process is identical whether you're renovating a Victorian home in Cabbagetown or a modern condo in CityPlace.

ESA Permit Requirements for Condo Circuit Addition

Your licensed electrician applies for the ESA permit before starting any work. The permit cost ranges from $100-$400 depending on the scope — a single new circuit typically runs $100-$150, while multiple circuits or more complex work increases the fee. The electrician provides detailed drawings showing the new circuit routing, panel modifications, and device locations. ESA requires this documentation because condo electrical systems are more complex than detached homes, with centralized distribution, shared electrical rooms, and strict capacity limitations.

The inspection process involves an ESA inspector visiting your unit to verify code compliance after the electrical work is complete. In downtown Toronto condos, this can be logistically challenging — the inspector needs building access, elevator use during business hours, and coordination with building management. Your electrician schedules the inspection once the work is finished, and you'll typically wait 3-7 business days for the appointment (up to 2 weeks during peak renovation season in spring/summer). The inspector verifies proper wire sizing, GFCI/AFCI protection where required, proper grounding, panel labelling, and code-compliant installation methods.

Condo Board and Building Management Requirements

Downtown Toronto condos have strict renovation policies that go far beyond ESA requirements. Most buildings require advance written notice for any electrical work, typically 2-4 weeks before starting. You'll need to submit renovation applications including contractor insurance certificates (minimum $2 million liability), WSIB clearance, ESA licensing verification, and detailed work plans. Many buildings restrict construction hours to weekdays 9 AM-5 PM to minimize noise disruption to neighbours.

Building management often requires your electrician to coordinate with the building's electrical contractor or property manager before accessing electrical rooms or main distribution panels. Some condos prohibit modifications to the unit's main electrical panel and require all new circuits to be fed from sub-panels. This is

particularly common in older downtown buildings where the original electrical infrastructure wasn't designed for modern electrical loads.

Condo-Specific Electrical Challenges

Downtown Toronto condos present unique electrical constraints that don't exist in detached homes. Most condo units have 100-125A electrical service — adequate for basic living but limited when adding multiple new circuits. Load calculations become critical because you can't simply upgrade to 200A service like you would in a house. The building's electrical infrastructure determines your maximum capacity.

Circuit routing in condos is more complex than detached homes. New circuits often require running wire through concrete floors, shared wall cavities, or common electrical chases. Some buildings prohibit penetrating certain walls or floors, requiring creative routing solutions that increase installation costs. Your electrician needs to understand condo construction methods — many downtown buildings use concrete construction with limited access for new wiring.

Inspection and Completion Process

Once your electrician completes the work, they notify ESA to schedule the inspection. The ESA inspector verifies that all new circuits meet Ontario Electrical Safety Code requirements — proper GFCI protection in bathrooms and kitchens, AFCI protection on bedroom circuits, appropriate wire sizing for the intended load, and proper panel labelling. In condos, inspectors pay particular attention to fire-stopping around wire penetrations and ensuring work doesn't compromise the building's fire separation.

After passing inspection, ESA issues a Certificate of Inspection — keep this document permanently with your condo records. Some condo corporations require a copy for their files, and you'll need it if you sell the unit. If the inspection reveals deficiencies, your electrician must correct them and schedule a re-inspection before the work is considered complete.

Timeline and Cost Considerations

Plan for 2-4 weeks total timeline for condo electrical work — 1-2 weeks for condo board approval, 1-2 days for the actual electrical work, and 3-7 days for ESA inspection scheduling. Costs run 20-30% higher than detached homes due to building access challenges, coordination requirements, and more complex installation methods. A simple circuit addition that might cost $400-$600 in a house typically runs $600-$900 in a downtown condo.

Need help finding a licensed electrician experienced with downtown Toronto condo electrical work? Toronto Electrical Repair can match you with professionals familiar with building management requirements and ESA permit processes through the Toronto Construction Network.

Q2

Are there special wiring requirements for basement apartments in Toronto under the Ontario electrical code?

Yes, basement apartments in Toronto have specific electrical requirements under the Ontario Electrical Safety Code, particularly around egress lighting, smoke detection, separate metering, and adequate electrical capacity for independent living.

Basement apartments (often called secondary suites or in-law suites) must meet stringent electrical safety standards because they're considered separate dwelling units with unique fire safety challenges. The electrical system must support independent living while ensuring safe egress during emergencies.

Dedicated electrical service is typically required for legal basement apartments in Toronto. This means either a separate meter base and panel (requiring Toronto Hydro coordination and significant cost), or a properly-sized sub-panel fed from the main house panel with adequate capacity. Most older Toronto homes with 100A service need a panel upgrade to 200A before adding a basement apartment, as the combined electrical load of two dwelling units exceeds the original panel's capacity.

Emergency egress lighting is mandatory for basement apartments. All exit routes — stairways, hallways leading to exits, and the basement apartment entrance — must have hardwired lighting controlled by switches at both the top and bottom of stairs. This lighting cannot be controlled solely from the main house. Battery backup emergency lighting is often required for stairways, especially in homes where the basement exit route passes through the main house.

Smoke and carbon monoxide detection requirements are extensive. Hardwired, interconnected smoke alarms must be installed in the basement apartment (typically in sleeping areas and hallways), and these must be interconnected with the main house smoke alarm system so that an alarm in one unit triggers alarms throughout the entire building. Carbon monoxide alarms are required near sleeping areas if there's any fuel-burning appliance, attached garage, or fireplace in the building.

GFCI protection is required for all basement apartment outlets, as basements are considered wet locations under the code. This includes kitchen outlets, bathroom outlets, laundry areas, and general living space outlets. Many older Toronto basements lack proper GFCI protection and require complete rewiring to meet current standards.

Kitchen electrical requirements for basement apartments include dedicated 20A circuits for countertop outlets (at least two circuits), a dedicated circuit for refrigerator, appropriate ventilation fan circuits, and proper lighting. The electrical load calculation for a full kitchen significantly impacts the overall electrical capacity requirements.

Separate electrical metering may be required depending on Toronto's zoning and your local utility's requirements. This involves installing a second meter base, which requires Toronto Hydro approval, utility coordination, and often significant electrical infrastructure upgrades. Some basement apartments can share metering with the main house, but this must comply with local bylaws and utility requirements.

Common GTA basement apartment electrical challenges include inadequate panel capacity in older homes (requiring expensive service upgrades), moisture issues affecting electrical components (requiring special weatherproof devices and proper grounding), low ceiling heights limiting electrical box placement, and existing knob-and-tube or aluminum wiring that must be remediated before apartment approval.

ESA permits and inspections are mandatory for all basement apartment electrical work. The electrical system must pass ESA inspection before the City of Toronto will issue occupancy permits for the secondary suite. This process typically involves multiple inspections — rough-in inspection after wiring installation, final inspection after device installation, and sometimes additional inspections for smoke alarm interconnection and emergency lighting systems.

Cost considerations for basement apartment electrical work in the GTA typically range from $5,000-$15,000 depending on the scope. A basic sub-panel installation with adequate circuits runs $3,000-$6,000, while a complete electrical upgrade including new service entrance, separate metering, and full apartment wiring can exceed $15,000-$25,000.

Timing and permits are critical — electrical work must be completed and inspected before other finishing work, and Toronto's basement apartment approval process requires electrical compliance before final occupancy approval. Plan for 4-6 weeks minimum for electrical work and ESA inspections.

This is complex work requiring coordination between licensed electricians, ESA inspectors, Toronto building permits, and potentially Toronto Hydro for service upgrades. Every basement apartment electrical project requires professional design and installation — there are no DIY options for this type of work.

Need help finding a licensed electrician experienced with basement apartment electrical requirements? Toronto Electrical Repair can match you with professionals familiar with Toronto's secondary suite electrical standards through the Toronto Construction Network.

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Q3

What does a whole-home rewire actually involve and how long does it take?

A whole-home rewire involves replacing all existing electrical wiring, outlets, switches, and often the panel with modern code-compliant materials, and typically takes one to two weeks for an average GTA home. The scope depends on your home's size, number of circuits, wall accessibility, and whether you're keeping the existing panel or upgrading it as part of the project.

The process generally starts with your electrician performing a thorough assessment of the existing wiring — identifying what type you have (knob-and-tube, aluminum, early copper with cloth insulation), how many circuits are needed for modern electrical demands, and how accessible the walls, attic, and basement are for running new wire. In older Toronto homes, particularly the century homes in Cabbagetown, the Annex, and Riverdale, accessing wall cavities can be the most time-consuming part of the job. Your electrician will run new NMD90 copper cable through the walls, install new electrical boxes, outlets, and switches throughout the home, and connect everything back to the panel.

For a typical 1,200 square foot Toronto bungalow — the kind you see across Scarborough, North York, and Etobicoke — a full rewire generally runs **$10,000 to $15,000** and takes about five to seven working days. A larger two-storey home of 2,000 square feet or more pushes that timeline to one to two weeks and costs in the range of **$18,000 to $30,000**. These numbers include labour, materials (NMD90 wire, new outlets, switches, electrical boxes), the ESA permit, and inspection. If you're also upgrading from a 100A panel to 200A service, add another $2,000 to $5,000 depending on whether the service entrance cable and meter base need replacement as well.

What to Expect During the Work

Your electrician will need to cut access holes in walls and ceilings to route new wiring. In homes with accessible basements and attics, this can be minimized — your electrician can fish wire through from above and below, limiting the number of wall openings. In homes without attic access or with finished basements, more drywall cutting is unavoidable. Most electricians patch the access holes as part of the job, but painting and finishing is typically the homeowner's responsibility.

Power will be off to sections of the home during the rewire, though a good electrician stages the work so you're never without power to the entire house for more than a few hours. Many homeowners choose to schedule a rewire during a kitchen or bathroom renovation when walls are already open — this saves significant labour cost since the electrician doesn't have to cut and repair drywall.

An ESA permit is mandatory for any rewiring project in Ontario. Your electrician pulls the permit before starting, and an ESA inspector visits after the rough-in (before walls are closed up) and again after the final connections are made. The permit typically costs $150 to $400 depending on the number of devices and circuits. Keep your certificate of inspection permanently — you'll need it when you sell the home or if you ever file an insurance claim.

If you're living in the home during the rewire, plan for some disruption. Dust, noise, and temporary power interruptions are part of the process. Many GTA families find it manageable for a one-week project but prefer to stay elsewhere for larger two-week rewires. If you're considering a whole-home rewire, Toronto Electrical Repair can match you with licensed electricians through the Toronto Construction Network who specialize in residential rewiring across the GTA.

Q4

How much does aluminum wiring remediation cost in the GTA and is it worth it?

Aluminum wiring remediation in the GTA typically costs between $3,000 and $12,000 depending on the method used and the size of your home, and yes, it is absolutely worth it for both safety and insurance reasons. The two main approaches — AlumiConn connectors and COPALUM connectors — differ significantly in cost, and the right choice depends on your budget and long-term plans for the home.

AlumiConn connectors are the more affordable option, generally running **$3,000 to $8,000** for a typical Scarborough or North York bungalow with aluminum branch circuit wiring. AlumiConn uses a set-screw mechanical connector with an anti-oxidant compound to create a safe junction between aluminum and copper wiring. Your electrician opens every outlet, switch, and junction box in the home, disconnects the aluminum wire, installs the AlumiConn connector, and connects a short copper pigtail from the connector to the device. This method is approved by the ESA and accepted by most Ontario insurance companies as a permanent remediation.

COPALUM connectors are the gold standard but cost more — typically **$5,000 to $12,000** for the same home. COPALUM uses a cold-weld crimp that creates a permanent molecular bond between the aluminum and copper conductors. The connection is considered superior because there are no set screws to loosen over time and no oxidation path. However, COPALUM requires a specialized crimping tool that not all electricians carry, and the labour is more intensive. Some insurance companies specifically request COPALUM, so check with your insurer before deciding.

Aluminum branch circuit wiring was installed extensively in GTA homes built between roughly 1965 and 1975 — you'll find it across Scarborough, North York, Etobicoke, Mississauga, and parts of Brampton. The aluminum itself isn't inherently dangerous, but the connections are the problem. Aluminum expands and contracts more than copper with temperature changes, and it oxidizes when exposed to air, creating resistance at connection points. Over decades, this leads to loose connections that generate heat — and heat at electrical connections is how house fires start. The risk is highest at outlets and switches where connections are subject to repeated use and vibration.

Many Ontario insurance companies now require aluminum wiring remediation as a condition of coverage. If you're buying a home with aluminum wiring, your insurer may give you 30 to 90 days to complete remediation or face policy cancellation. Even if your current insurer hasn't flagged it, remediation protects your family and increases your home's resale value — buyers and their home inspectors will identify aluminum wiring, and many buyers walk away from homes that haven't been remediated.

An ESA permit is required for aluminum wiring remediation since your electrician is modifying connections at every device in the home. The permit ensures the work is inspected and code-compliant. Budget $150 to $300 for the

permit on top of the remediation cost. Need help finding a licensed electrician experienced with aluminum wiring? Toronto Electrical Repair can match you with professionals in your area at no cost.

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Q5

Can I get home insurance with knob-and-tube wiring in Toronto?

Getting home insurance with active knob-and-tube wiring in Toronto is increasingly difficult, and many major insurers will either decline coverage entirely or charge significantly higher premiums with restricted terms. If you're buying a century home in neighbourhoods like the Annex, Cabbagetown, Riverdale, or High Park, the insurance question is something you need to address early in the process.

Most mainstream Ontario insurers — the ones you see advertised on television — have tightened their policies on knob-and-tube wiring over the past decade. Some will flat-out refuse to write a policy if any active K&T is present. Others will issue a policy but exclude electrical fire coverage, which essentially defeats the purpose of having insurance. A few specialty insurers still cover homes with knob-and-tube, but premiums can be 30 to 50 percent higher than comparable homes with modern wiring, and they typically require a certified electrical inspection confirming the K&T is in serviceable condition.

The key distinction insurers make is between **active** and **disconnected** knob-and-tube. If a licensed electrician has disconnected all K&T circuits and replaced them with modern NMD90 wiring, most insurers treat the home as rewired even if remnants of the old K&T are still physically present in the walls. What matters is that no current flows through the old wiring. Your electrician can provide a letter confirming all K&T has been disconnected and replaced, and the ESA inspection certificate serves as official documentation.

If you currently own a home with knob-and-tube and your insurer is pressuring you to remediate, you generally have a few options. A full rewire is the most thorough approach — removing all K&T and replacing it with modern copper NMD90 throughout the home. For a typical pre-war Toronto home, this runs **$8,000 to $20,000** depending on size and wall accessibility. Some homeowners opt for a phased approach, rewiring the most critical circuits first (kitchen, bathroom, bedroom) and completing the rest over a year or two. Your insurer may accept a phased plan with a written commitment and timeline.

Before purchasing a home with knob-and-tube, get insurance quotes first — not after closing. Contact your insurance broker with the home inspection report detailing the K&T, and get a firm answer on coverage terms and conditions. Factor the cost of rewiring into your purchase offer. Many real estate transactions in older Toronto neighbourhoods include negotiated price reductions of $10,000 to $25,000 to account for required electrical upgrades.

An ESA-permitted rewire with a certificate of inspection is the strongest documentation you can provide to your insurer. It confirms a licensed electrician performed the work, it was inspected by the ESA, and it meets the current Ontario Electrical Safety Code. Keep this certificate permanently — it's one of the most valuable documents a homeowner in an older Toronto home can have. If you need to find a licensed electrician for a K&T assessment or rewire estimate, Toronto Electrical Repair connects homeowners with local electrical professionals through the Toronto Construction Network.

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Q6

Is it more cost-effective to rewire my entire house or just upgrade specific circuits during a renovation?

Whether to do a full rewire or targeted circuit upgrades depends on the age and condition of your existing wiring, the scope of your renovation, and your budget — but if your home still has knob-and-tube or aluminum wiring, a full rewire during a major renovation is almost always the smarter long-term investment. Walls are already open during renovation, which dramatically reduces the labour cost of rewiring compared to doing it as a standalone project.

If your home was built before 1945 and has original knob-and-tube wiring — common across Toronto's older neighbourhoods like High Park, Leslieville, and Rosedale — a full rewire is the right call whenever you're doing a renovation that opens walls. The cost difference between rewiring with open walls versus closed walls is substantial. Running new NMD90 cable through exposed wall cavities takes a fraction of the time compared to fishing wire through finished walls, cutting access holes, and patching drywall afterward. Many GTA electricians estimate that rewiring during a renovation saves 20 to 40 percent on labour compared to a standalone rewire.

For post-war homes built in the 1950s through 1970s with copper wiring and 100A panels, a targeted approach often makes more sense. If the existing copper wiring is in good condition and properly grounded, there's no compelling reason to rip it all out. Instead, focus your electrical budget on upgrading the circuits that matter most: adding dedicated 20A circuits for the kitchen (modern code requires separate circuits for countertop outlets, refrigerator, and dishwasher), installing GFCI protection in bathrooms and kitchens, adding AFCI breakers on bedroom circuits, and running new circuits for any added loads like an EV charger, hot tub, or home office equipment.

The cost comparison helps frame the decision. A full rewire of a 2,000 square foot home runs **$18,000 to $30,000** as a standalone project, but **$12,000 to $20,000** when done during a gut renovation with open walls. Adding individual circuits during a renovation typically costs **$300 to $800 per circuit**. If you only need four or five new circuits and your existing wiring is sound, spending $2,000 to $4,000 on targeted upgrades makes more financial sense than a $20,000 full rewire.

Here's a practical decision framework. Choose a **full rewire** if your home has knob-and-tube or aluminum wiring, if your panel is 60A, if your insurer is requiring electrical upgrades, or if you're doing a gut renovation that opens most of the walls anyway. Choose **targeted circuit upgrades** if your existing copper wiring is in good condition, your panel has capacity for additional circuits, and you're only renovating one or two rooms.

Either way, an ESA permit is required for any new circuits or rewiring work in Ontario. Your electrician handles the permit application, and the ESA inspector verifies code compliance before and after walls are closed. If you're planning a renovation and want to understand your electrical upgrade options, Toronto Electrical Repair can connect you with licensed electricians who can assess your existing wiring and recommend the most cost-effective approach for your situation.

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Q7

What is NMD90 wire and why does my electrician keep mentioning it?

NMD90 is the standard residential electrical cable used in Ontario homes, and your electrician mentions it because it's the wire going into your walls for virtually every circuit in a modern Canadian home. The name stands for Non-Metallic Dry 90°C — meaning it has a non-metallic (plastic) outer sheath, is rated for dry locations, and the conductor insulation can handle temperatures up to 90 degrees Celsius.

Inside that plastic outer jacket, NMD90 contains two or three insulated copper conductors plus a bare copper ground wire. The most common sizes you'll encounter in residential work are **14/2** (two 14-gauge conductors plus ground, used for standard 15A lighting and outlet circuits), **12/2** (two 12-gauge conductors plus ground, used for 20A kitchen and bathroom circuits), **10/3** (three 10-gauge conductors plus ground, used for dryers and air conditioners), **8/3** (used for ranges and cooktops), and **6/3** (used for EV chargers and sub-panel feeds). The first number is the wire gauge — lower numbers mean thicker wire that can carry more current safely. The second number tells you how many insulated conductors are inside, not counting the ground.

If you're comparing NMD90 to what you might see referenced in American home improvement content, it's essentially Canada's equivalent of Romex — but they're not identical. NMD90 is manufactured to CSA (Canadian Standards Association) specifications, and only CSA-approved cable can be used in Ontario. Your electrician can't install American-spec Romex in your home even if it looks the same.

The alternative to NMD90 that you might encounter is **AC90** (also called BX or armoured cable), which has a metal jacket wrapped around the conductors instead of plastic sheathing. AC90 is required in exposed locations where the cable could be physically damaged — running along the surface of a basement wall, through a garage, or in commercial applications. It's also what you'll find in many Toronto homes built in the 1950s through 1970s. AC90 costs roughly two to three times more than NMD90 per foot, so it's only used where code requires the extra mechanical protection.

For a typical GTA rewiring project, NMD90 cable costs approximately **$0.50 to $3.00 per foot** depending on gauge. A full home rewire uses hundreds of metres of cable, so the material cost adds up — but labour is the dominant expense in any rewiring project. Your electrician buys NMD90 in large spools (typically 75-metre or 150-metre rolls) from electrical supply houses, and pricing fluctuates with copper commodity prices.

When your electrician discusses the wiring plan for your project, they're selecting the appropriate NMD90 size for each circuit based on the amperage rating and the load it needs to carry. Using undersized wire is a code violation and a fire hazard — it's one of the things the ESA inspector specifically checks during inspection. If you're getting quotes for electrical work and want to understand what's being proposed, knowing that NMD90 is simply the standard copper cable going in your walls helps you follow the conversation.

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Q8

Is it safe to live in my house while the wiring is being replaced?

Yes, most GTA homeowners stay in their homes during a rewire, and a good electrician will stage the work so you always have power to essential areas like the kitchen, bathroom, and at least one bedroom. That said, there's real disruption involved, and understanding what to expect helps you decide whether to stay or temporarily relocate.

During a rewire, your electrician works through the home section by section, turning off power to one area at a time while running new NMD90 cable and installing new outlets and switches. In a well-planned rewire, the electrician completes and energizes each section before moving to the next, so you're never without power to the entire home for more than a few hours — typically during the panel changeover when old circuits are disconnected and new ones are connected. Most electricians schedule the panel switchover early in the day so it's completed before evening.

The biggest source of disruption isn't the power interruptions — it's the dust, noise, and access holes. Running new wire through finished walls requires cutting small openings in drywall at strategic points to fish cable between floors and through wall cavities. A skilled electrician minimizes these cuts by routing wire through the attic and basement wherever possible, but some wall cuts are unavoidable, especially in two-storey homes where cable needs to pass through the floor between levels. Expect drywall dust, the sound of drilling through studs and plates, and the occasional thump of cable being pulled through wall cavities.

For families with young children, the safety consideration is real. Open electrical boxes, exposed wiring during rough-in, and tools scattered across work areas create hazards that require constant vigilance. Many GTA families

with small children choose to stay with relatives or in a short-term rental during the most intensive days of the rewire — typically three to five days for a bungalow, five to eight days for a two-storey home. If you stay, keep children well away from the work areas and make sure the electrician secures all exposed wiring at the end of each work day.

For the pre-war homes in the Annex, Cabbagetown, and Riverdale where knob-and-tube removal is common, the disruption tends to be greater because the wall cavities are often harder to access. Plaster-and-lath walls are more difficult to cut cleanly than modern drywall, and patching them requires more skill and cost. Some electricians in these neighbourhoods recommend a plaster restoration specialist for the patching work rather than doing it themselves.

Practical tips for living through a rewire: set up a temporary kitchen station with your microwave and kettle in a room that won't be worked on that day, keep your phone and laptop charged overnight since power may be off to your usual charging spots during the day, and cover furniture and belongings with drop cloths in rooms being worked on. If you're planning a rewire and want to discuss the logistics with experienced electricians, Toronto Electrical Repair can match you with licensed professionals who handle residential rewires across the GTA every week.

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Q9

What's the difference between upgrading my panel and rewiring my whole house?

A panel upgrade replaces your electrical panel (the breaker box) with a higher-capacity one, while a rewire replaces the actual wires running through your walls — they're two completely different projects that address different problems, though they're often done together. Understanding the distinction helps you avoid

paying for work you don't need, or worse, skipping work that you do.

A **panel upgrade** is about capacity and safety at the distribution point. If you have a 60A or 100A panel and need more power for modern loads — an EV charger, central air conditioning, a hot tub, a home office — upgrading to a 200A panel gives you the capacity to run these devices without chronic breaker trips. The panel upgrade may also include replacing the service entrance cable from your meter to the panel and coordinating with Toronto Hydro for the service upgrade. A panel upgrade in the GTA typically costs **$2,000 to $5,000** and takes one day. It doesn't touch the wires running through your walls to outlets and switches.

A **whole-home rewire** replaces the branch circuit wiring — the NMD90 or older cable that runs from your panel through the walls to every outlet, switch, and light fixture. This is the project you need if your home has knob-and-tube wiring, aluminum branch circuits, or old copper wiring with deteriorated cloth insulation. A rewire for a typical GTA home costs **$10,000 to $30,000** depending on size and takes one to two weeks. A rewire usually includes a new panel as part of the project, since you're replacing everything anyway.

Here's how to figure out which one you need. If your home has **modern copper wiring in good condition** but your panel is too small — maybe you have a 100A panel and want to add an EV charger and central AC — a panel upgrade alone solves the problem. The wiring in your walls is fine; you just need more power at the source. This is common in Mississauga, Markham, and Vaughan homes built in the 1980s and 1990s.

If your home has **knob-and-tube wiring** — the kind found in pre-war Toronto homes — you need a rewire regardless of your panel situation. K&T wiring is ungrounded, has deteriorating insulation after 80-plus years, and can't safely handle modern electrical loads. A panel upgrade without addressing the K&T is like putting a bigger fuel tank on a car with rusted brake lines.

If your home has **aluminum branch circuit wiring** from the 1965-1975 era, you have a third option: aluminum wiring remediation using COPALUM or AlumiConn connectors, which costs **$3,000 to $12,000** and doesn't require replacing the aluminum wire itself — just making the connections safe. This can be paired with a panel upgrade if needed.

Both projects require an ESA permit and inspection. Your electrician can assess your specific situation and recommend the right scope of work. If you're unsure whether you need a panel upgrade, a rewire, or both, get two or three quotes from licensed electricians who can inspect your existing system. Toronto Electrical Repair can connect you with electrical professionals through the Toronto Construction Network who will assess your home and provide clear recommendations.

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Q10

Do I need an ESA permit to rewire a room in my house?

Yes, an ESA permit is required any time you add, extend, or replace electrical wiring in Ontario — including rewiring a single room. This isn't optional or a suggestion; it's a legal requirement under Ontario's Electricity Act, and skipping the permit creates serious problems for your home's insurability and resale value.

When your electrician rewires a room, they're running new NMD90 cable from the panel to new or existing outlet and switch locations, installing new electrical boxes, and making connections that will carry current for decades. The ESA permit ensures that a qualified inspector verifies the wire gauge matches the circuit breaker rating, connections are properly made with screw terminals (not backstabbed push-in connections), boxes are properly secured and accessible, GFCI protection is installed where required, and AFCI protection is on bedroom circuits. The inspection catches mistakes that could cause a fire years down the road — a loose connection, an undersized wire, a missing ground.

The permit process is straightforward. Your licensed electrician applies for the permit online through the ESA portal before starting work. For a single-room rewire, the permit fee is typically **$100 to $200** — a small fraction of the overall project cost. After the rough-in wiring is complete but before walls are closed up, the ESA inspector visits to check the work. This rough-in inspection is critical because once drywall goes up, the wiring is hidden for decades. After the final connections are made (outlets, switches, fixtures installed), a final inspection confirms everything is code-compliant and the inspector issues a certificate of inspection.

The timeline for ESA inspections in the GTA varies with demand. During peak renovation season (spring and summer), inspectors are busier and you might wait five to seven business days for an appointment. During slower months, inspections can happen within two to three days of notification. Your electrician manages this scheduling as part of the project.

Skipping the permit might seem tempting to save a hundred dollars, but the consequences are real. If unpermitted electrical work contributes to a fire, your home insurance company can deny the claim entirely — leaving you personally liable for all damages. When you sell the home, a diligent home inspector or buyer's electrician may identify unpermitted work, and you'll be required to disclose it. Some buyers walk away, and others negotiate significant price reductions to cover the cost of having the work inspected and potentially redone.

The only electrical work that doesn't require a permit is like-for-like replacement of existing devices — swapping an old outlet for a new one on an existing circuit, replacing a light fixture, or changing a switch. The moment new wiring enters the picture, a permit is mandatory. If you're planning to rewire a room as part of a renovation, Toronto Electrical Repair can help you find licensed electricians who handle the ESA permit process as a standard part of every project.

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Q11

How do electricians run new wires through finished walls without tearing everything apart?

Experienced electricians use a combination of fish tapes, flex drill bits, access holes at strategic points, and creative routing through attics and basements to run new wire through finished walls with minimal damage. It's one of the skills that separates a seasoned residential electrician from someone who learned on new construction, and it's especially important in Toronto's older housing stock where plaster walls and complex framing make the job more challenging.

The basic technique starts with understanding the home's structure. Your electrician identifies the path from the panel to the destination — which walls are accessible from the attic above, which can be reached from the basement below, and where the cable needs to pass through floors or cross wall cavities. In the best scenario, your electrician can access the attic and basement, drill down or up through the wall's top plate or bottom plate, and fish the NMD90 cable vertically through the wall cavity without cutting any drywall at all.

When the attic or basement route isn't possible — say you're running a new circuit to a second-floor room in a two-storey home with a finished basement — your electrician cuts small access holes at key points. A typical access hole is about 10 by 10 centimetres, just large enough to reach in with a flex drill bit and bore through the top or bottom plate of the wall. The electrician then uses a fish tape (a flexible steel or fibreglass rod) threaded through from one opening to another, attaches the cable, and pulls it through. These access holes are patched with drywall compound after the work is done — a skilled electrician makes cuts that are easy to patch cleanly.

Flex drill bits are the essential tool for this work. These are long, flexible drill bits (typically 120 to 180 centimetres) that can bend through wall cavities and bore through studs and plates at angles that a rigid bit can't reach. An electrician fishing wire through a finished wall might drill through three or four studs from a single access point, creating a path for the cable to follow.

In Toronto's pre-war homes — the century homes with plaster-and-lath walls in Cabbagetown, the Annex, and Riverdale — the process requires extra care. Plaster is harder to cut cleanly than modern drywall, and the lath strips behind the plaster can splinter unpredictably. Experienced GTA electricians who work regularly in these neighbourhoods know how to cut plaster access holes with an oscillating multi-tool for clean edges that patch neatly. The wall cavities in older homes can also contain surprises: old gas pipe stubs, abandoned plumbing, brick nogging (bricks stacked between studs for insulation), and of course, existing knob-and-tube wiring that needs to be dealt with.

For larger rewiring projects, **AC90 armoured cable** is sometimes used in exposed locations like unfinished basements or garages where running cable through finished walls isn't necessary. AC90's metal jacket provides mechanical protection without the need for conduit, and it can be surface-mounted along joists and walls.

The number of access holes and amount of patching needed varies enormously depending on the home's layout and the electrician's skill. When getting quotes for rewiring work, ask specifically about their approach to routing cable and how much drywall repair is included. Some electricians include basic patching in their price; others leave that to a drywall contractor. Toronto Electrical Repair can connect you with electricians who specialize in rewiring occupied homes across the GTA — professionals who understand that minimizing wall damage is just as important as the electrical work itself.

Q12

What are the costs and benefits of upgrading from 60 amp to 200 amp service when rewiring?

Upgrading from 60A to 200A service during a rewire is one of the best investments you can make in an older GTA home, typically adding $3,500 to $5,000 to the rewiring cost but future-proofing your electrical system for decades. If you're already paying for a rewire, bundling the service upgrade saves money compared to doing it as a separate project later.

A 60A service was adequate when your home was built — when the heaviest electrical loads were a refrigerator, a few light bulbs, and maybe a window air conditioner. Today's homes need to support central air conditioning, electric dryers, dishwashers, microwaves, multiple computers and devices, LED lighting on dozens of circuits, and increasingly, EV chargers and heat pumps. A 60A panel simply cannot safely deliver enough power for modern living. Even a 100A upgrade — while better than 60A — is increasingly considered undersized for homes planning to add an EV charger (40-50A draw) or heat pump system.

The cost breakdown for a 60A to 200A upgrade during a rewire includes the **new 200A panel** ($300-$800 for the panel box itself), **new service entrance cable** from the meter to the panel ($500-$1,500 for materials and labour), **meter base replacement** ($200-$400 for the base, plus Toronto Hydro coordination fees), and **labour** for the panel installation and service entrance work. As a standalone project, this runs **$3,500 to $5,000**. When bundled with a rewire, the incremental cost is lower — perhaps $2,500 to $4,000 — because your electrician is already at the panel and the service entrance work overlaps with the rewiring scope.

The benefits extend well beyond just having more power available. A 200A panel gives you **room to grow** — enough breaker slots and capacity to add circuits for an EV charger, workshop, basement suite, hot tub, or generator transfer switch without worrying about overloading the system. **Insurance becomes simpler** — many Ontario insurers charge lower premiums for homes with modern 200A service compared to 60A or even 100A panels, and some won't insure homes with 60A fuse boxes at all. **Resale value increases measurably** — home inspectors flag 60A service as a major deficiency, and buyers factor the upgrade cost into their offers. Having 200A service with a modern panel is a selling point.

The process requires coordination with Toronto Hydro (or your local utility if you're outside city limits). Your electrician handles this coordination — Toronto Hydro needs to disconnect power at the meter to allow the meter base and service entrance cable replacement, then reconnect and install a new meter once the work is complete. This typically requires scheduling two to three weeks in advance, so plan accordingly. The power outage for the switchover lasts four to eight hours.

For homes across Scarborough, North York, and Etobicoke built in the 1950s and 1960s with original 60A fuse boxes, this upgrade is essentially mandatory for modern living. If you're already rewiring to replace old wiring, adding the service upgrade at the same time is far more cost-effective than coming back for it later. Get matched with licensed electricians experienced in service upgrades through Toronto Electrical Repair — browse electrical professionals in the Toronto Construction Network directory to find the right fit for your project.

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