

CAHI MONTHLY NEWS



Presidents Corner

The Nov 29 meeting of CAHI will be hosted by Connecticut Basement Systems and Dr. Energy Saver at their brand new 77,000 square foot facility at 33 Progress Ave Seymour CT 06483. Larry Janesky is excited to give us a tour of the new facility he calls “the most incredible home service contractor building in the world!”. It features 48 grade doors at can hold as many as 100 trucks inside!

On the top floor there is an entire training center including the “Invictus” theater where the meeting will be held. The meeting will start at 6:30 with dinner. The presentation will start with the subject of crawl spaces and dehumidification, and then be open to any questions the membership may have about building science, foundation repair, waterproofing, crawl-spaces-and-dehumidification, concrete slab lifting, insulation, air sealing, etc.

PLEASE REGISTER FOR THIS EVENT BY NOVEMBER 20th

Date: November 29th **Time:** 6:30- 9:00 pm
Location: 33 Progress Ave, Seymour, CT
Prices: Dinner and/or Seminar (Free To Members)

See you there for this special evening!

You may want to check out Dr. Energy Saver’s YouTube channel where they have the biggest library of videos for how to retrofit a house to be more energy efficient and comfortable. You may also be interested in signing up for Larry’s daily blog called “Think Daily” and “Think Daily for Business people” at think daily.com. Of a personal interest, check out the 90 minute theater quality movie on You Tube called “Into the Dust”, the story of Larry and his son in the longest non-stop cross country off road race in the world – the Baja 1000. At the time of this meeting, Larry and his son will be returning from their third Baja 1000 race and we can hear what happened.

Bill Kievit
President

MONTHLY MEETINGS – Details & Info

CAHI’s regular monthly meetings are held at the Best Western located at 201 Washington Ave (RT 5), North Haven. Meetings are free to members. Most meetings are on the fourth Wednesday of the month from 7-9pm. Guests are always welcome! Guests may attend 2 free monthly meetings to experience our presentations, meet our members, and receive a CE attendance certificate.

Joining CAHI may be done at anytime of the year through our Membership Page

November 2017 Volume 10, Issue 11

INSIDE THIS ISSUE

Presidents Corner1

CAHI Bus Trip2

Air-Sealing.....3

Real Estate Terror.....9

Lighting.....13

Preventing Carbon Monoxide (CO) Poisoning.....18

Sealing a Chimney Chase....20

Editor’s RANT.....22

Next Meeting!

Nov. 29, 2017

Basements & Crawlspace

Presenter

Connecticut Basement Systems

December

No Meeting

Merry Christmas

November **is** **Education Bonus Month for CAHI**

Old Sturbridge Village

An 1830s New England Living History Museum

Bus Trip! **November 16, 2017**

to

STURBRIDGE VILLAGE – Vintage Homes

Bus Pickup Locations

7:30 am – Long Wharf (Food Truck Paradise)

8:30 am – Manchester (Buckland Park & Ride Bus Stop A)

Return Bus

Leaves from Sturbridge Village at 3:30pm

Please email: cahi-ceu@outlook.com to sign up.

Please provide your name and pickup location in the email.

Our web site www.ctinspectors.com will provide more information as it becomes available.

AIR-SEALING



Whole-House Liquid Air-Sealing A new method for air-sealing the shell

BY TERRY NORDBYE

I am an air-sealing specialist, and I work with architects and contractors to help them make their buildings tighter. Air-sealing is a relatively new skill in the building world.

Currently, the most common go-to air-sealing material is canned, or gunned, foam. It's fast and fun to use and it looks like it's doing something. But it's not the best product for air-sealing. The goal is not just visual evidence of air-sealing; the goal is comprehensive air-sealing that will last a long time.

Adhesion, flexibility, and durability are what we need in a good sealant material. Through years of testing and dissecting old foam seal work, I have found canned foam scores only "good" to "poor." In terms of adhesion and elongation, canned foam and gunned foam do not perform as well as tapes or elastomeric compounds, caulk, and various sealants. The cellular structure of foam is full of potential holes. Probably worst of all, foam gives installers a false

sense of "well done," when in fact it is subject to poor installation.

As some readers may remember from my previous article ("Air-Sealing Without Foam," May/13), I've been looking for an alternative to canned foam for a while. When I wrote that article, some tapes and caulks were the only available materials for creating an effective air seal—materials that would adhere well, stay flexible, and remain durable. But while tapes and caulks might perform better than canned foam, they can be labor intensive, costly, and slow.

Three years ago, I set out to find, or invent, an air sealant to match the speed of canned foam but with the reliable performance of other air sealants. My goal was to make a first-class air sealant suitable and affordable for any house in the U.S.

After years of messing around with different formulas and applicators, I came up with one system that will air-seal most leaks



Working from the inside, the author probed with a strap tie to reveal the worst leaks in the house at the bottom plates (1). At one place, where an exterior door was being replaced, the complete path of the air leaking into the wall cavity is revealed (2). During an early blower-door test, the air flowing through this outlet and from the crack at the base of the wall gushed air (3).

that come up in new or retrofit work. It is fast and nontoxic, works for all leak types, and emits no VOCs. It is a rubberized latex (elastomeric) mixed with fibered granules and sprayed onto surfaces with a texture gun.

In this article, I'll demonstrate how this new sealant works. On the particular job shown here, using entirely my formula, I'm air-sealing a classic 2,000-square-foot stucco ranch built in 1979 in climate zone 3.

MULTIPLE LEAKAGE PATHWAYS

There are many ways air can leak in and out of a building. In this house, almost every switch and outlet box leaked air during a blower-door test, as did much of the baseboard and penetrations through the floor into the crawlspace. But the source of the greatest leakage was at the top and bottom plates.

The stucco was to remain, so we had limited access to seal the bottom-plate leaks at their source. Partial demo gave me insights

into how the house leaked and ideas on how I might shut off the leaks. For example, along part of the exterior wall, we were able to slip a 16-gauge Simpson strap 7 inches behind the bottom plate shown in the photo above (1); it exited outdoors between the stucco and framing. This gap provided an easy path for air leakage. Elsewhere, a section of stucco was removed for a new door, revealing the exact pathway of this bottom plate leakage: air flowed behind the weep screed, between the building paper and the plate, and into the wall cavity (2).

In another area, I was able to slip a pruning saw under the bottom plate to reach the back of the stucco, which directly connected to the exterior. During a blower-door test, I held my hand 6 inches away from the outlet and the bottom plate (3) and could feel air coming out.

The photos and captions on the pages that follow describe how I implemented what I put in the proposal, and what the owner agreed to pay for, to correct these and other leaks.

BOTTOM PLATE AND FLOOR LEAKAGE

Working from the inside, we RotoZipped a 12-inch strip of drywall off the entire bottom of the drywall along the exterior walls and a few interior walls loaded with bottom plate punctures (4). We sprayed the elastomeric along the bottom plate sections, and then went back over the sprayed areas with a 2-inch brush to touch up any areas we missed (5).

Using a hand-held hopper and gun, we are able to move quickly, covering nail plates, copper pipes, and the framing plates with a flexible seal in about 30 seconds (6). The stuff goes on milky and dries clear (7).

Leaks low on the building included penetrations through the floor that pulled air up from the crawlspace

because of stack effect (8).

Leaks through a plywood subfloor with gaps and holes also pulled crawlspace air inside. Here in the living room, where the floor is to be covered with carpet, we applied a flexible, airtight coating, 1mm to 2mm (one to two dimes) thick (9). This took about five to six seconds per foot.



TOP PLATE AND ATTIC LEAKS

Because of the forces of stack effect, air leaks through the attic pull conditioned air out of the home. Sealing the attic has an enormous impact on indoor thermal comfort, as well as noticeable reductions in heating and cooling.

On this house we got lucky: It needed a new roof, so I had the rare opportunity to access some of the difficult attic air-sealing areas from the roof (10). It took 35 minutes to cover 70 linear feet of top plate.

Before we sealed with elastomeric, big wiring holes were stuffed with fiberglass to prevent material from flowing through them (11).

The attic (12) had 59 light cans, 410 linear feet of top plates, 57 wire holes, six plastic pipes, three fan boxes, and two metal pipes—all punctures through the ceiling. Some of those punctures leak a lot and some a little, but the only way to kill the stack through the lid was to go after all the potential leaks.

With the spray gun, you don't always have to be right up on the target. The spray rig could reach far back into the difficult juncture of rafter tails and ceiling joist (13).

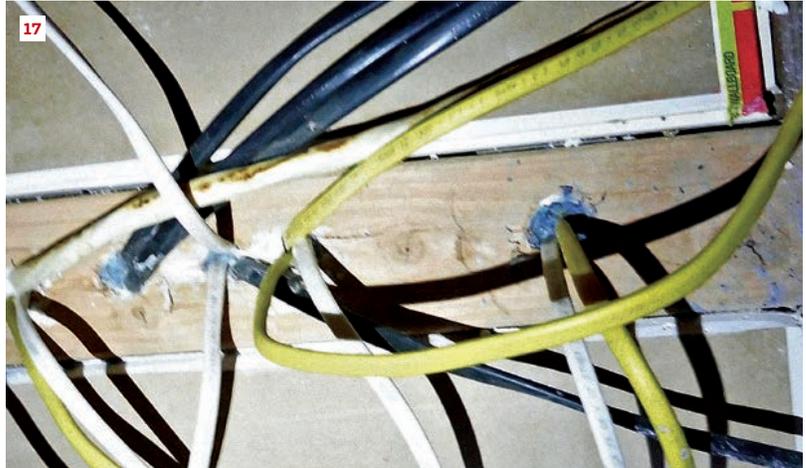
This was a fairly simple and roomy attic to work in. There were, however, sections with belly-crawl access only, adding time to the job (14). Outside daytime temperatures hit 90+ degrees, so we started early and quit early.

Sealing all the top plates and rake wall (15) in the attic took about four to five minutes.

Wires need to be drenched in elastomeric, then pulled apart and wiggled so that liquid surrounds all the wires and sinks into the hole, thus sealing around each wire. We call this "puddle sealing." This section took about two minutes (16). Big holes are stuffed with cotton insulation to act as a gravity dam before application (17). Once the big holes were stuffed, the 22 wires above a sub-panel took about a minute to seal (18).

This intersection of a rake wall, partition walls, and nailing plates (19) took less than two minutes to seal. In complex geometrical areas like this, it is difficult to evaluate just where the leak is. Sometimes these areas are partially done at best, but more often, they are ignored completely.





DELIVERY MACHINES

You can spray the elastomeric using a small hand-held hopper gun with an air hose attached. It delivers the material well, but the fluid will spill out of the hopper if it is tilted much more than 45 degrees. The hopper also has a limited volume capacity of less than two gallons.

I have used several full-size spray machines to deliver the elastomeric sealant. The Benron shown here (20)

is a quiet workhorse. It is lightweight and portable (but requires a separate compressor), can handle a 100-foot garden hose, and can pump strongly until the cows come home. Benron is discontinuing this exact model but will soon come out with the Rotortex 245E Pro, available with or without a compressor. Davlin (davlincoatings.com) will be selling the Rotortex 245E setup

the way it works best with my product. (Please note: I do not make money or commissions on what Davlin sells.)

The Graco 1400 RXT (also available from Davlin) is light, noisy, and portable, and does a fine job (21). It is limited by its 25-foot hose but will fit through a 24-inch opening. Graco also makes the 2000 RTX (not shown), a heavier-duty rig that accepts a 50-foot hose.



MEASURABLE RESULTS

Successful air-sealing is first about access to the leaks, and second, about fastidious attention to detail. To ensure a successful job, you need to inform everyone on the crew what the goals are and how you are going to proceed, and you need to designate one person to be in charge and take responsibility of the entire air-sealing operation.

You get only one shot at air-sealing during retrofit or new work. After the stucco was originally installed on this house, access to the leaks was sealed up, and the leaks remained unaddressed for 38 years. We were able to significantly correct that, however. Before any work was done, we tested-in using a blower door with a whole-house air leakage of 11.2 ACH. The job tested-out near completion at 3.6 ACH.

The entire job took two people three days, and we used 24 gallons of elastomeric spray. Most of the work was in the attic, which took two guys one full day and 21 gallons of elastomeric. Because of the volume and throw of the material, we were able to cover potentially leaky areas in hard-to-reach places that typically never get fixed with other sealants. Actual spray seal time (covering the target) is very fast. What usually takes the most time in an attic is maneuvering around with the hose and gun. Another time factor is setup and cleanup.

Terry Nordbye, a long-time JLC contributor, is a building contractor in Point Reyes Station, Calif., and recently launched Air Seal Pro. For information on the elastomeric spray and the machines to install it, go to airsealpro.com.

10 True Tales of Real Estate Terror

Practitioners recall the scariest moments they've faced in the field.

OCTOBER 2017 | BY REALTOR® MAGAZINE STAFF



Real estate professionals are a brave bunch. You walk into unfamiliar homes every day, prepared to deal with whatever lurks inside. Hopefully, the scariest thing you find is a seller's outdated sense of style. But some properties have more insidious issues that staging can't fix.

No strangers to haunted houses, many practitioners have real-life horror stories of dealing with creepy, ghostly circumstances in the course of their daily work. With Halloween around the corner, REALTOR® Magazine asked its readers to share their most frightening experiences in the field. From paranormal occurrences during showings to apparitions in listing photos, read on ... if you dare.

'It Wanted Me to Leave'

There was an old two-story house in my area that was on the market for a long time—a real fixer-upper in a hot neighborhood. It was eerie: Floors weren't level, squeaky steps, the works. When I was inside, I felt like someone was watching me, and it wanted me to leave. It was when I noticed a light in the basement that I calmly walked right out ... because the house had no electricity. —*Monette Chain, Metro First Realty, Oklahoma City*



Did You Just Perform an Exorcism?

While showing my client homes one day, we walked into a vacant foreclosure that I thought no one else was showing at the time. There was no car in the driveway and no sign of anyone present. As we opened the front door, two men were coming down the staircase from upstairs—one wearing a long black robe like a priest would and a necklace with a huge cross. He had dark hair and a long, dark beard. The other man, whom I'm guessing was his agent, walked behind him. We all cordially greeted one another, and they walked out the back door. We never saw them get into a car or walk down the street. They just seemingly disappeared. My buyer never lets me forget that house and tells everyone that story. —*Barbara Mattingly, SFR, Mattingly Real Estate, Upper Marlboro, Md.*



Tragedy Amid a Sale

My husband and I took a listing right around the corner from our home in 2013. During the listing period, the 66-year-old seller fell ill and became progressively worse. We helped her as much as we could, taking her to doctor's appointments, the pharmacy to pick up her medications, and even to Cedars Sinai Hospital in Los Angeles, which was 40 miles away. Nine months into the listing—the home didn't sell quickly because she was stubbornly holding out for the price she wanted—she told us she was heading up North to visit family. But after the day she was supposed to have returned, I could no longer reach her. Three days passed with no contact, and I finally began calling her family. I received a return call with an ominous message: My client had never shown up for her visit. I went to the seller's house with a colleague and peeked in the front door window. It was a horrible site inside. There were overturned chairs everywhere, and I could see the back door was ajar. We could hear her dog barking. When we went inside, it smelled like death. I found my client's body in the hallway; she had been dead for several days. We called 911, and when the police arrived, they were suspicious of the violent scene, not knowing that the seller had been so ill. They held my colleague and I all day, finally letting us go at 8 p.m. when the coroner arrived. At the time, there was a buyer for the property, and were two weeks into a 30-day escrow period. The buyer, an emergency room nurse whose daily routine involves matters of death, elected to continue with the escrow. The sale closed two weeks later.

—Debra Kessler, SRES, Century 21 Troop Real Estate, Simi Valley, Calif.



A Ghostly Purchase Agreement

I have a client whose sister-in-law is a medium. After my client made an offer on a home, I joked that the sister-in-law should come through the house during inspection and make sure there were no spirits lingering. So she did! As she left, she said: “I got rid of two, but there is a spirit in the front room that doesn't want to leave. If you buy the house, I'll come back and get rid of him.” My client still took the house. —Allyson Valcheff, Keller Williams Realty Centres, Newmarket, Ontario



Nothing Left Behind

As soon as I pulled up the driveway, the hair on the back of my neck stood up. My buyers, a married couple whom I was showing the property to, were standing outside, and there was a feeling—and—odor of death. I had chills and began to shake. When I opened the front door, the wife—who was five months pregnant—felt like she was going into labor. We turned around immediately and left. As soon as we pulled out of the driveway and got about 100 feet away from the house, the wife said she felt



better. Later, the listing agent, who was related to the seller, told me no one who visited the property wanted to stay long. Finally, after getting no offers, the seller decided to demolish the property. Three workers were injured one way or another during demolition, so the seller gave the remnants of the home to the volunteer fire department to use for controlled fire training. Three firemen were hurt, though not severely. The house smoldered for three days. Now there's nothing but dead space where the house once stood, and nothing—not even grass—grows there.

—Theresa Akin, SFR, Corpus Christi Realty Group, Corpus Christi, Texas

Moving Into Someone Else's History

Several years ago, while searching the MLS for the perfect home for my client, I came across an intriguing photo of a midcentury dining room buffet in a new listing. I previewed the home and called my client to come see it right away. She didn't like the buffet, which was bolted to the wall, but she loved the house. During the inspection, we happened to be at the home when an elderly woman knocked on the door. The woman, who lived next door, insisted that her deceased husband still lived in the listing, and, therefore, my client could not purchase it. The buyer, unfazed, completed the purchase. Later, she learned from neighbors on the block that her home's original owner was an architect who built it and the house next door, which was an exact replica, for his wife. They lived in the separate homes rather than share one together. The elderly woman made several appearances at my client's front door over the subsequent years, always insisting that her deceased husband was still occupying the home. She told my client that her husband had designed and built the dining room buffet, which was the only piece in the home that was not duplicated in the house next door. Eventually, the elderly woman was moved to a nursing home, and her house was sold. I recently sold my client's home, and though she disliked the dining room buffet, she kept it through several renovations. The next owner also had lukewarm feelings about the buffet—but it remains in the house. I still can't explain why that midcentury buffet intrigues me or why the people who have owned the home kept it when they didn't like it very much. But I have a feeling that buffet will stay in that house for a very long time.

—Monika Lenz, Monika Lenz Realty, Ridgecrest, Calif.



Not the Cat's Meow

I was previewing a home for out-of-town clients one day. No one was home, so I used the lockbox key to let myself in. After looking at the upstairs bedrooms, I turned to find a giant black cat guarding the stairs. She tried to scratch and bite me every time I tried to go down the stairs. After five or six frightening attempts, I grabbed a sweater from one of the bedrooms and threw it over the cat as I sprinted down the stairs and out the door to safety!

—Keith Willingham, Faith Wilson Group, Vancouver, British Columbia, Canada



Open and Shut

A few years ago, I went with a customer to view a foreclosure in which the previous owner had passed away, we were told. When we went inside, we both felt a strong presence, but the house was vacant. As we toured the home, we felt as if someone was watching us. Halfway through, all the exterior doors, which were closed for our safety, started to slightly open and close. There was no power, and, therefore, no AC to make that happen. We looked at each other and said, “Nope, this is not the right house for you,” and got out of there. I never showed that house to anyone else again. I believe it’s still vacant to this day.

—Sabrina Robles Ocasio, Weichert, REALTORS®, Land & Home, Brooksville, Fla.



A Picture’s Worth a Thousand Screams

I’m a professional real estate photographer, and I have taken photos of many old homes. When I edit the pictures, I am sometimes shocked by what I see. One time, the reflection of a tree in the window looked like a person wearing a creepy mask. But worse was when a woman was standing behind me while I took a photo in one of the rooms of a listing. In the picture, the reflection in a mirror showed an old man in an overcoat behind me instead.

—Raylene Hansen, Raylene Inder Hansen Photography, Providence, R.I.



‘Rattle, Rattle, Rattle’

Back in 2010, I was showing a home to a client while I was five months pregnant, and as I walked up to the front door and put the key in the lock, I heard “rattle, rattle, rattle.” I looked down and saw a young rattlesnake at my toes. Apparently, he had been curled up under the door jamb, and I didn’t see him. Now he was fully awake and quite annoyed at the disruption. I yelled to my client to stay back, and then I pushed off the door, jumping back as fast as I could. I felt the snake hit my leg, but miraculously, he didn’t break the skin. I still don’t know how I wasn’t bitten, but I thanked the “man above” for saving me and my baby.

—Lisa Bartlett, RE/MAX Desert Showcase, Peoria, Ariz.



The actual rattlesnake Lisa Bartlett confronted during a showing.

LIGHTING



Kitchen Lighting Design Strategies for creating a functional and beautiful space

BY CAROLYN ANDERSON

When you ask architects and builders to design lighting for a kitchen, many will simply pencil in rows of downlights around the perimeter of the room. While this approach may cost less and be easier to install, it probably won't serve the client's needs well. Today's kitchens serve multiple functions, everything from preparing meals to entertaining friends around the island. Meeting those diverse needs requires a layered lighting plan. In addition, well-planned kitchen lighting is safer and can save electricity. And good kitchen lighting doesn't have to break the budget.

There are three basic levels of lighting to consider in a kitchen—ambient, task, and accent—and each serves a different purpose. There are many options for each level; for the most pleasing and effective light, the choices should reflect the architecture of the house and the style of your client.

The brightness and color for all kitchen lighting is as important as placement of the fixtures. I recommend using dimmable, energy-efficient LED bulbs that are 2,700K to 3,000K in color temperature everywhere in a kitchen. These bulbs emanate warmth. I never use bulbs above 3,000K and always try to steer clear of fluorescent bulbs—even CFLs. They don't provide good-quality light and they're toxic when broken. Check the lumens on the bulb packaging for the equivalence to incandescent bulbs.

AMBIENT LIGHT

Ambient light is the general lighting for the entire kitchen space, and it should closely mimic the natural daytime light in the room. When choosing ambient light sources for a kitchen, consider the kitchen size and ceiling height. The bigger the kitchen and the higher the ceiling, the more ambient light output is required,

Photos 1, 4, 6, 8, 9 by Carolyn Anderson; all others by Roe Osborn

which usually means that more fixtures will be needed.

Fixtures for providing ambient light can vary, and different sources can be combined to create a pleasing balance. The important thing is to avoid creating dead zones—areas that are dim, with little or no light. At the same time, be conscious of creating hot spots where light from multiple sources overlaps and creates an overly bright area. Here are some typical sources for ambient lighting.

Recessed downlights are the most common choice for ambient kitchen lighting. They're the most effective type of lighting, although in small kitchens, they should be used judiciously. Recessed downlights are typically spaced 4 to 5 feet apart, either on a grid or in a line depending on the kitchen layout and ceiling height (1).

Be aware that recessed downlights often serve double-duty as task lighting. So positioning of these lights above counters and cabinets is critical (more on this later, in the discussion of task lighting). If downlights are the only ambient light sources, 6-inch-diameter fixtures that have a wider spread of light are the best choice.

Ceiling-mount fixtures come in either flush-mount models that attach directly to the ceiling or semi-flush-mount models that drop a short distance below the ceiling. Either type is a good choice for an older, smaller kitchen with a low ceiling. In such a kitchen, a single flush-mount fixture can be placed centrally; or two fixtures can divide a larger kitchen into thirds.

These fixtures can also work well when supplemented by other light sources, such as pendants over an island or peninsula. In a home with low ceilings (7 to 7½ feet), ceiling-mount fixtures can provide more comfortable light than downlights. These fixtures typically have translucent lenses or glass shades that diffuse the light throughout a room. Downlights, on the other hand, direct a more concentrated cone of light downward and tend to create uneven light in kitchens with low ceilings.

The lower positioning of semi-flush-mount fixtures lets more light reflect from the ceiling, but they work better with slightly higher ceilings because they hang down lower than flush mounts.

Chandeliers and pendants. For two-story, tray, cathedral, or pitched ceilings that are 10 or more feet high, chandeliers and pendants can provide effective ambient light. These fixtures bring light down to a more human scale in rooms with high ceilings and are often used to supplement other light sources (2). In addition to providing light, pendants and chandeliers can be a focal point in an otherwise simple design.

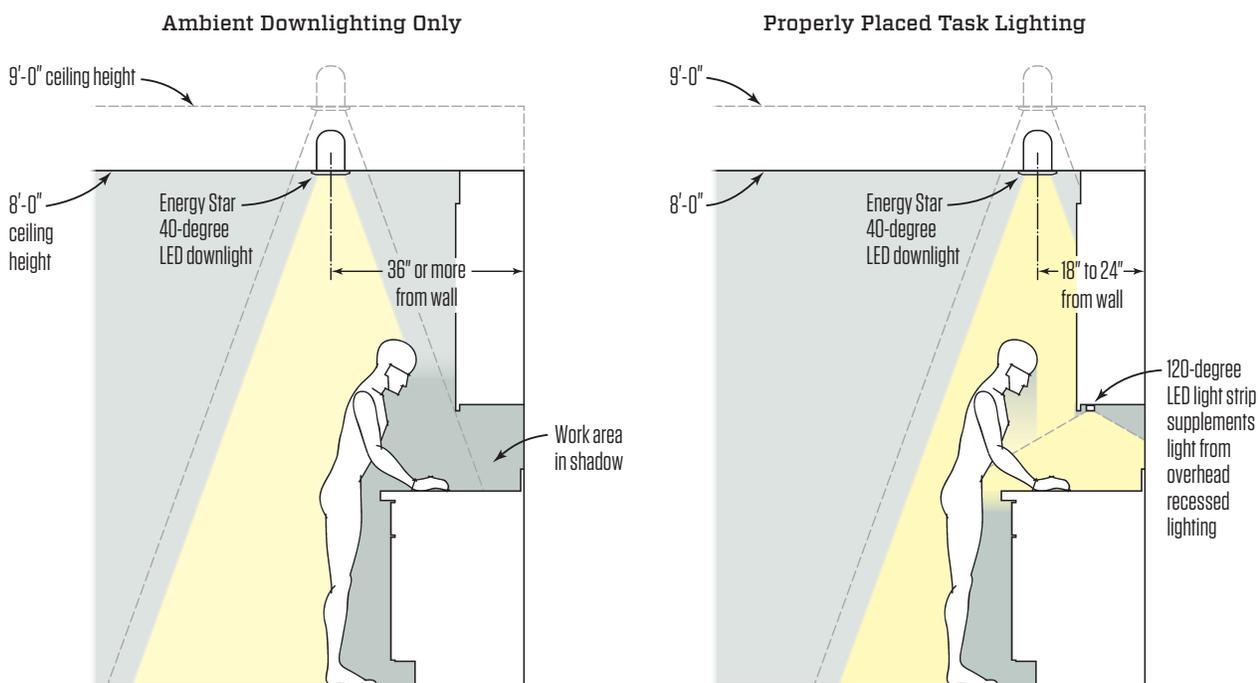
For small kitchens, a single fixture may be enough, especially if supplementing downlights. If the kitchen is very large, two or more fixtures work well in areas such as over a large island (3). When multiple pendants are used for ambient lighting, they should be no less than 6 feet apart and no less than 6 feet from any structure such as a wall or upper cabinet. The bottom of pendants and chandeliers should be at least 7 feet above the floor so they don't block views, and they should be controlled with a dimmer to be effective for ambient lighting. The output of these lights should be between 100W to 250W equivalent, bright enough to light the kitchen when it's entered.

Wall sconces. When kitchens have free wall space, wall sconces can provide visual relief from overhead lighting and provide



Recessed downlights are a common option for ambient kitchen lighting (1). A flush-mount light in the center of the kitchen can work in concert with pendants over a peninsula (2), or pendants above an island can provide ambient light on their own (3).

Fixture Placement for Task Lighting



The illustration on the left shows the all-too-frequent poor placement of stand-alone ambient downlighting in a kitchen. In this scenario, the person working at the counter casts a shadow over the work area. On the right, downlights placed much closer to the wall light up the work area and are supplemented with under-cabinet lights to provide effective task lighting.

pleasant ambient light in the kitchen. Place sconces that are oriented downward at a height of 6½ feet (assuming a ceiling that is 8 feet or higher). Upward-oriented sconces can be placed at a 6-foot height. Sconces don't need a lot of light output to be effective, so use a 60W equivalent bulb.

TASK LIGHTING

As the name suggests, task lighting ensures ample, focused light where it is needed for working. Most of my clients love to cook. When you're working with older clients with older eyes, adequate lighting for kitchen workspaces is also a safety factor, because of the range of sharp implements used for many kitchen tasks.

Recessed downlights. Earlier, I said that attention should be paid to the placement of recessed downlights that are used for task lighting. These fixtures should be placed 18 to 24 inches out from the wall to minimize shadows on countertops created by an overhead light behind the person working there (see Fixture Placement for Task Lighting, above). This placement means that with 12-inch-deep wall cabinets, the downlight fixtures should be just 6 to 12 inches from the face of the cabinet (4).

If they are more than 7 feet high and project out far enough, soffits above cabinets are a good place for recessed downlighting (5). And

if the cabinets are white or light-colored, the reflected light from the cabinet faces will enhance the task lighting. I typically use 4-inch downlights for task lighting because they produce a more focused beam of light than the 6-inch fixtures I use for ambient light.

Fixture spacing should be a function of the ceiling height. The higher the ceiling or soffit, the farther apart the fixtures can be, but higher output is needed with the light source farther from the work surface. That said, I usually center lights on upper cabinets so the fixtures light the interior when the doors are open. Just make sure that the cones of illumination light the work surface evenly.

Under-cabinet lighting. Though recessed downlights can offer adequate task lighting by themselves, they work best in concert with under-cabinet lighting, which puts a light source below the upper cabinets, where small appliances and cooking implements are often stored and where food is placed as meals are prepared.

The under-cabinet fluorescent fixtures of 20 years ago have been replaced by low-profile dimmable LED strip lights that create pleasing, warm-colored lighting. Whenever possible, I specify upper cabinets with a light rail (a 2-inch addition to the lower face frame), with the light strips directly behind the rail (6). The fixtures I prefer are 1 inch wide and only ½ inch deep so they aren't visible to someone sitting in the kitchen. Be sure that they provide a minimum



Downlights are placed in front of the cabinets in the ceiling (4) or in soffits (5) for task lighting. Under-cabinet lights hide behind a light rail (6). Sconces are a good over-sink option (7). Magnetic switches can activate lights in dedicated-use cabinets (8).

of 60W equivalent light per cabinet. For corner cabinets, I often use a single puck light instead of a strip, also with 60W equivalent.

Pendant task lighting. Peninsulas and islands often offer the largest work surfaces in a kitchen, and many islands have prep sinks. Pendant lights in these areas can be a single fixture or multiple ones, or multiple lights suspended from a single bar. Pendants for task lighting should be 30 to 36 inches above the countertop height (66 to 72 inches off the floor) to avoid blocking the view. They should be placed 24 to 30 inches apart, with each light providing a minimum output of 75W equivalent.

Pendants come in a variety of styles and prices. These fixtures are often a distinct design feature, so be careful that they blend with the style of the kitchen. If you're using chandeliers or pendants for ambient light in the kitchen, avoid replicating this type of lighting over an island or peninsula, to prevent visual competition in your design. If the kitchen opens into the dining area, make sure the fixtures in both rooms relate to each other in shape, finish, or style.

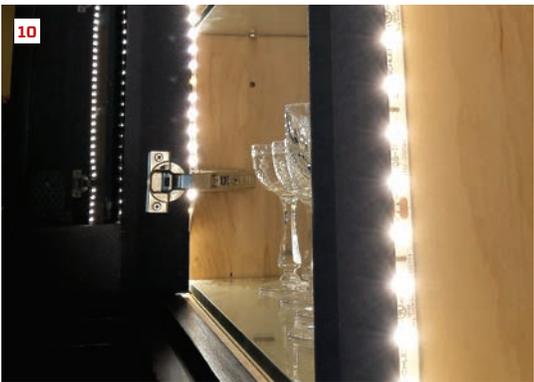
Over-sink lighting. For safety reasons, task lighting over the sink is essential and should never be overlooked or skimped on. A 4-inch downlight, a pendant (12 inches out from the wall), or a sconce over a window can serve this purpose equally well (7). 60W equivalent is fine here.

Walk-in pantry. If there's a walk-in pantry in your kitchen project, place a downlight or flush-mount light in the pantry, controlled with a jamb switch or motion sensor. When a homeowner dashes into the pantry in the middle of preparing a meal, good lighting makes it much easier to find things. The cost for the fixture and switch is minimal, and a 60W equivalent should do the trick.

Motion-sensor drawer and cabinet lighting. For high-end kitchens or for clients with limited vision, motion sensors or magnetic switches for certain drawers and cabinets can provide extra light in places that are not usually well lit, or where extra light might be helpful for finding a small item (a typical junk drawer comes to mind). This type of lighting is also helpful for a dedicated charging station for mobile devices in a drawer or cabinet (8). A sensor switch automatically turns the light on when the drawer or cabinet door is pulled open. These applications don't require bright light; because of its low profile, an LED light strip usually works well.

ACCENT LIGHTING

The third level of kitchen lighting, accent lighting, provides depth to your design and can highlight architectural details or the homeowner's special objects. It can also provide low-lighting for a kitchen after the work is done.



Lighted glass-front cabinets show off glassware (9). Light tape mounts behind a cabinet face frame (10) and glass shelves let light shine through to more than one level. Uplighting above cabinets creates a different accent light in the kitchen (11).

Glass-cabinet lighting. Homeowners often ask for glass panels in upper cabinets to display their finer glassware and china or their favorite ceramic objects while keeping them in a safe, clean environment (9). Interior cabinet lighting lends depth and dimension to cabinetry, while what is shown inside adds texture and interest to the kitchen design.

For this application, dimmable LED light tape or puck lights provide light inside and at the front of a glass-paneled cabinet. If the cabinets have face frames, light tape can be mounted behind the frame to direct the light back into the cabinet (10). For box-style cabinets without face frames, puck lights are the best option. For cabinets 36 or more inches wide, use two pucks to cast light onto, and not behind, the objects inside. Installed one-third of the depth into the cabinet, these fixtures cast light on the items inside.

Use glass shelving so the lights shine through to more than one level. Light levels for glass cabinets should be standard output for light tape and no more than 60W equivalent on the puck light.

Open shelves and uplighting. Lighting on open shelves is a nice feature and makes it easier to find things on them. As with under-cabinet lighting, adding a stiffener that is at least 1 1/2 inches wide to the shelf face lets you hide the light tape behind it. Another nice accent in kitchens with high ceilings is uplighting over cabinets (11); light strips can be placed against the wall to wash it with light and accent the height of the ceiling. Standard-output light tape can be used for open shelving, but high-output light strips work better above cabinets and light more of the ceiling.

CIRCUITS AND SWITCHES

Deciding which group or groups of lights will be governed by which switches and strategically locating those switches can make or break a lighting design. As you determine the circuits in the kitchen, always work with a licensed electrician to be sure that the circuit can handle everything you want to put on it, and that it's physically possible to wire the circuits the way you envision, especially in a remodel.

When establishing circuits for a kitchen, I try to err on the side of too many circuits rather than not enough. I start by putting the ambient light on its own circuit. When you walk into a kitchen from any direction, it should be the first switch you reach for. Pendants over a peninsula or an island should also be on their own circuit. These lights can serve multiple functions, so you may want them at a low level while task lighting over the counters is much brighter.

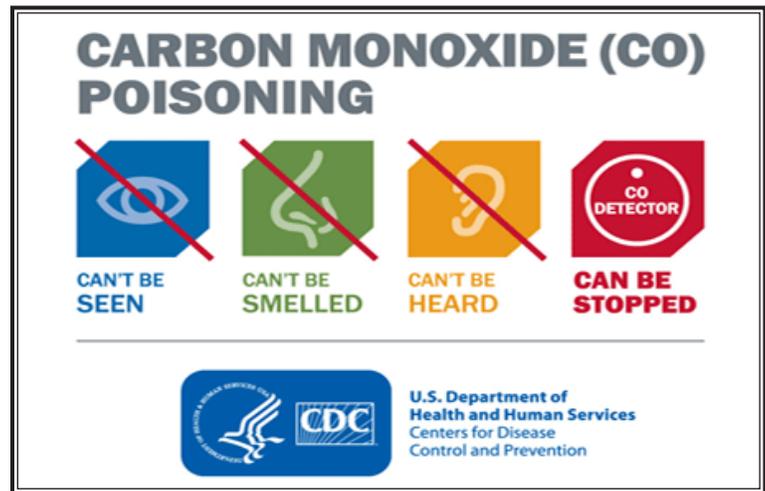
Whenever possible, I put recessed task lighting over counters on its own circuit. For large kitchens with workspaces in separate parts of the kitchen, I often put each area on a separate circuit. If the kitchen has recessed lighting above an island or a peninsula that will be used primarily as task lighting, I may combine it with the countertop lights if the circuiting allows.

I put under-cabinet lights on their own circuit and try to locate the switches for these lights near their point of use so they can be turned on easily as work begins. The light over the sink should also be on its own circuit so it can be as bright as it needs to be for washing food or cleaning up.



Prevent Carbon Monoxide (CO) Poisoning

Daylight Savings Time begins Sunday, November 5, 2017. As you prepare to set your clocks back one hour, remember to check the batteries in your carbon monoxide (CO) detector. If you don't have a battery-powered or battery back-up CO alarm, now is a great time to buy one. More than 400 people die each year in the United States from unintentional, non-fire related CO poisoning.



CO is found in fumes produced by furnaces, vehicles, portable generators, stoves, lanterns, gas ranges, or burning charcoal or wood. CO from these sources can build up in enclosed or partially enclosed spaces. People and animals in these spaces can be poisoned and can die from breathing CO.

When power outages occur during emergencies such as hurricanes or winter storms, the use of alternative sources of power for heating, cooling, or cooking can cause CO to build up in a home, garage, or camper and to poison the people and animals inside.



Prepare for daylight savings time by installing a battery-operated or battery back-up CO detector in your home or by checking the batteries, if you already have one, as you set your clocks back one hour.

You Can Prevent Carbon Monoxide Exposure

Do

- Have your heating system, water heater and any other gas, oil, or coal burning appliances serviced by a qualified technician every year.
- Install a battery-operated or battery back-up CO detector in your home and check or replace the battery when you change the time on your clocks each spring and fall.
- Leave your home immediately and call 911 if your CO detector ever sounds. Seek prompt medical attention if you suspect CO poisoning and are feeling dizzy, light-headed, or nauseated.

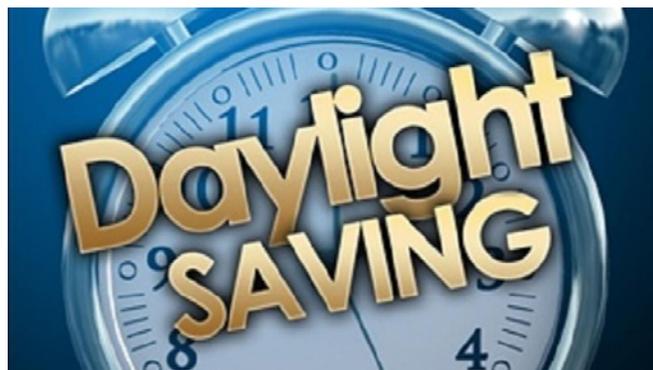
Don't

- Run a car or truck inside a garage attached to your house, even if you leave the door open.
- Burn anything in a stove or fireplace that isn't vented.
- Heat your house with a gas oven.
- Use a generator, charcoal grill, camp stove, or other gasoline or charcoal-burning device inside your home, basement, or garage or outside less than 20 feet from a window, door, or vent.

CO poisoning is entirely preventable. You can protect yourself and your family by acting wisely in case of a power outage and learning the symptoms of CO poisoning.

Click [here](#) for important CO poisoning prevention tips in 16 additional languages.

For more information, please visit [CDC's CO Poisoning website](#).



Remember to Check your batteries

On the Job

Sealing a Chimney Chase

BY TED CUSHMAN

Air-sealing a flat attic and upgrading the insulation with a blanket of blown cellulose is bread-and-butter work for weatherization contractor Matt Damon and his company, Penobscot Home Performance, based in Bucksport, Maine. Among the many air leakage points Damon and his crews commonly encounter in an older Maine house is the open chase around the brick chimney. Earlier this year, *JLC* visited one of the company's jobs to see lead weatherization technician Chris Jerome seal up a chimney chase.

"Sealing penetrations in an attic is one of the most cost-effective weatherization measures," Damon told *JLC*. "These holes can cause both comfort issues and high fuel use. It's like leaving a window open year-round."

Code requires any material in contact with a masonry chimney to be noncombustible. Older codes and traditional practice also respected this rule, which is the reason that the open gaps between the attic framing and the chimney exist in the first place. To block the air pathway, the technician cut 26-gauge metal flashing to fit over the gaps and sealed the joints between the metal and the masonry chimney and the wood framing using high-temperature caulk (in this example, 3M Fire Barrier Sealant).

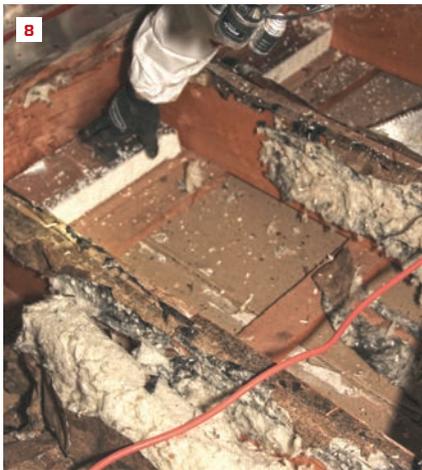
For large gaps that were more than 2 inches from the chimney, Jerome cut pieces of foil-faced polyiso foam and sealed them to the structure using one-part expanding adhesive foam sealant.

After the air-sealing work was complete, including wiring, vent, and plumbing penetrations throughout the attic, the attic received an R-60 blanket of blown cellulose insulation. That material is not allowed to contact the masonry chimney, so after blocking the bypass, Jerome fit pieces of 2-inch Roxul mineral-wool insulation around the chimney to isolate the masonry from the cellulose.

This attic also received a rebuilt access hatch with rigid foam insulation and weather stripping (see "A Site-Built Insulated Attic Hatch," June/17). After \$1,400 worth of state and local rebates, the total cost to the homeowner was \$5,300. Before the work, Damon tested the house at 4,270 CFM50 with a blower door; after sealing up the attic, that number had dropped to 2,800 CFM50. "A 35% reduction is pretty good for an attic-only weatherization project," said Damon.

Ted Cushman is a senior editor at JLC.





The chimney chase in this older attic communicated directly with the home's living space and basement below (1). Craftsman Chris Jerome first laid a bead of high-temperature sealant on the masonry (2), then used 26-gauge metal to bridge the gap between the masonry and the surrounding wood framing (3). Jerome sealed the edges of the metal to the brick with sealant (4). Fitting the metal to the irregular masonry and framing required some ingenuity and care (5, 6).

Larger gaps that weren't in direct contact with the masonry were blocked up using foil-faced rigid foam insulation (7, 8), sealed to the framing at the edges with one-component gun foam (9). Once the air seal was accomplished, Jerome installed a Roxul mineral-wool-insulation barrier around the chimney (10, 11) to isolate the masonry from an R-60 blanket of cellulose insulation that was blown in place after all the air-sealing measures were implemented.



Photos by Ted Cushman

Editor's Rant

Stan Bajerski did a nice job of providing inspirational or thought provoking quotes at the end of his monthly column. I enjoyed them and they made me reflect. Thank you Stan.

As the editor of this newsletter I have asked our members for newsletter input, topics of interest, or comments. Result has been "no traffic for this station". So I will continue as I see fit with a mix of articles from JLC, CT DPH, CDC, EPA and anybody else with information that should be of interest to our members. If anyone would like to contribute email and we can make it happen.

This is a new article for our newsletter. I am going to climb up on the soap box and RANT! I hope you enjoy or appreciate the thoughts/issues I try to convey. If you disagree, I will put your counter response in the next month's issue. My opinions will not be those approved by CAHI, our membership or the directors.

First RANT:

I spend a lot of time down at the VA Hospital in West Haven; more than I want to because the condition of many Veterans scare the hell out of me. The care is first rate! My personal care gives me a first hand look at Oncology, Cardiology and Primary Care. I have also been exposed to Prosthetics, Sleep Lab and PTSD/Substance Abuse. The professionals that help us are VA employees or from the Yale Medical Group. They really appreciate working there and work hard to help the Veterans. Why do they want and laud the opportunity to be there? I think this poem sums it up. It is the spirit of their patients. It is the spirit of many of our Veterans. This poem describes the spirit/attitude better than I can.

Invictus

by William Ernest Henley

Out of the night that covers me,
Black as the pit from pole to pole,
I thank whatever gods may be
For my unconquerable soul.
In the fell clutch of circumstance
I have not winced nor cried aloud.
Under the bludgeonings of chance
My head is bloody, but unbowed.
Beyond this place of wrath and tears
Looms but the Horror of the shade,
And yet the menace of the years
Finds and shall find me unafraid.
It matters not how strait the gate,
How charged with punishments the scroll,
I am the master of my fate,
I am the captain of my soul.

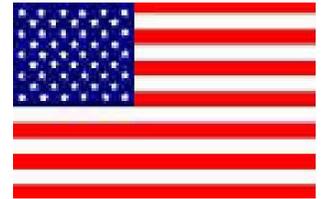
I get knocked down but I get up again ... nobody can keep me down! I think the last two lines of the poem are something we should say every day and something we should teach our children. That is my first RANT.

Contact CAHI c/o
 Scott Monforte
 39 Baker St.
 Milford, CT. 06461

Email: info@ctinspectors.com

Web: www.ctinspectors.com

Articles published in CAHI Monthly are the sole opinion of the author. CAHI does not endorse or state a position for or against the content of said articles.



CAHI Executive Board		CAHI Presidents	CT Home Inspection Licensing Board	
President	William Kievit 860-919-4960	Stanley Bajerski	William Stanley, Chairman (Cheshire)	Inspector
Vice President	Woody Dawson 203-272-7400	Bernie Caliendo	Richard Kobylenski (Coventry)	Inspector
Treasurer	Open	Robert Dattilo	Lawrence Willette (Tolland)	Inspector
Secretary	Open	Woody Dawson	Bruce Schaefer (Woodbridge)	Inspector
Director	Scott Monforte 203-877-4774	Michael DeLugan	Vacant	Inspector
Director	Dan Kristiansen 203-257-0912	David Hetzel	James O'Neill (West Hartford)	Public Member
Director	Al Dingfelder 203-376-8452	Richard Kobylenski	Vacant	Public Member
Director	Rob Gutman	Scott Monforte	Vacant	Public Member
		Joseph Pelliccio	<p>The Licensing Board meetings are held at 9:30 am Dept of Consumer Protection 165 Capitol Avenue. Hartford The public is always welcome.</p>	
		Pete Petrino		
		Dwight Uffer		
		They have served as our primary leaders and in other capacities since 1992.		
		Please thank them for their service when you have a chance.		

Published by: Larry Ruddy
 Larryhp@cox.net