News of Interest for and from the Connecticut Association of Home Inspectors, Inc.

CAHI MONTHLY NEWS

April 2019 Volume 12, Issue 04

Presidents Corner

Multipotentiality.....For those with multiple talents many things are expected.

Coming from a wide range of backgrounds we as inspectors are all different with our knowledge base and we each have our own style and a method that has evolved over time with experience.

As a home inspector your arrival at an inspection is typically met with a whole host of expectations and emotions. Anxiety, excitement, impatience, etc., which can often define an inspection and guide the day if not properly managed. You are the "expert" and as such you will be held to that standard.

It can often be difficult when faced with the buyer's protective "entourage". It is the big day and those questions that have been saved for just this opportunity are often asked as you make your way to the front door. On an inspection time is critical and its is often this moment that defines your time and the clients experience moving forward. Skeptics sense insincerity. Critics question knowledge and experience and buyers often sense and question everything.

The expectation from the buyer(s) and their "team" is often one of you will search high and low for each and every small or large issue that the home has or will present as time passes.

The expectation from the real estate agent(s) is that you will search high and low for each and every large issue previously unknown prior to the coffee getting cold and convey your findings to your client(s) in a "plain vanilla" manner so as not to jeopardize the deal and the associated commission.

Take the time, at the start, to explain your approach and define the scope of the inspection to all present as set forth by the Standards of Practice. Explain that each and every questions will be handled when appropriate and applicable.

Your time has value. Getting off to a positive and structured start will often preserve everyone's time and be to everyone's advantage.

Lastly take advantage of any time saved to enjoy life around you. Take moments for yourself .

Best

Dan Kristiansen
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

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Meeting Dates!

April 24th

Guest Speaker

Robert Boender

Asst. Building Official Town of North Haven

Robert will be talking about Pool Safety, Decks, Attic Insulation and Ventilation requirements. He will walk us through rough framing, plumbing and electrical. A review of questions his office receives from the public after the completion of a home inspection.

May 22th

TBD

Update from Crumbling Foundation Indemnity Program

Full house

Michael Malgaras from CT Foundations Indemnity Company.

Our members had some tough questions.

Working to completely understand a very fluid situation.

Pumping to Daylight

BY JOSH GIRARD

I own and operate a small, custom home and remodeling business in northern Vermont. Currently, we're in the process of developing a seven-lot subdivision on a 36-acre parcel of low-lying, valley farmland that abuts a river. The land's topography is flat, though it quickly drops in elevation as it approaches the river, far from our new five-acre subdivision (the remaining acreage has been designated as common land). Also, the water table is fairly high and variable. Test pits dug in 2015 during the project's design phase confirmed the groundwater could vary from 5 to 7 feet deep below grade (on average), depending on the season or on how wet or dry the weather has been.

For this development, these two factors necessitated our having to pump the groundwater from the footing drains, since the flat site didn't allow for draining to daylight. To stay out of the water table, we had to install our new foundations much higher than the existing grade, backfilling our foundations with 4 to 5 feet of trucked-in sand and scraped topsoil.

EXTERIOR SUMP PUMP

To discharge potential groundwater, we employed a site-drainage detail I picked up from an excavation subcontractor a decade or so ago. On the exterior side of the foundation, we installed a big culvert vertically that acts as a sump pit well and collection point for the home's perimeter and under-slab drains **(1)**. The culvert installation was straightforward enough, though the trickiest tasks were first determining the sump-pit depth (relative to the high water-table elevation) and connecting up the pump in a confined space.

Typically, we install exterior sump pumps on all our new homes where draining to daylight is not an option, regardless of the height of the site's water table or soil drainage class. The pumps are positioned lower than the perimeter and under-slab drains, so in most cases the drains are never going to see water. But with this site's high, fluctuating water table and location in a low-lying valley adjacent to a river watershed, the perimeter and under-slab drains have a greater potential of filling with groundwater.

Setting the depths. Last December, when we excavated the hole for the foundation of the third home in the development, we hit high water 5 feet below grade,

The author and crew install a 30-inch-diameter culvert vertically to act as a sump pit well next to the home's foundation **(1)**. The under-slab drainage **(2)** is connected to the perimeter drains through sleeves cast into the footing **(3)**. The culvert is muscled into place **(4)**. In this completed home's sump, the pump-to-house wiring connections are made at a wall-mounted junction box **(5)**.

Photos by Tim Healey

largely due to an unusually wet late summer and fall. So we adjusted the basement hole depth to 3 feet (2 feet above the high-water line), then put in a 6-inch layer of clean stone. I like to pour footings on a stone base rather than on undisturbed soils to help level the formwork and provide drainage. As to pump placement, we generally set the bottom of the sump pit 18 inches below the top of the footing (see Exterior Sump Pit, right).

Under-slab drainage (radon). We install under-slab piping on all our new homes primarily for drainage, though it serves as cheap insurance in case radon rears its ugly head (we build in a Zone 3 "low potential" radon zone, though the vast majority of Vermont is in a Zone 2 moderate zone). Our standard layout is a 6-foot-on-center spacing of perforated piping **(2)**, which is connected to the perimeter drains through sleeves cast in the footings **(3)**. Future-proofing for radon, we also rough-in a 3-inch dedicated vent stack from the under-slab piping and through the roof, which a radon mitigation fan can easily be cut into.

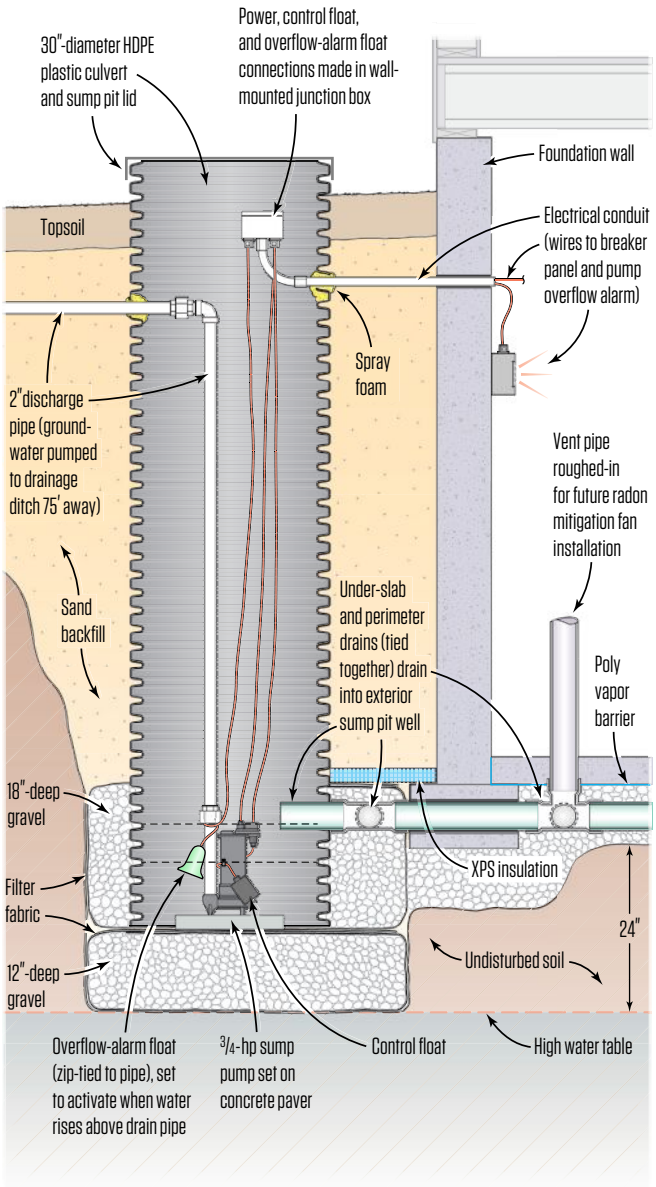
Sump-pit install. With the perimeter and under-slab drains joined, we excavated the sump-pit area. We dug beyond our planned sump-pit depth to first install a 12-inch lift of gravel wrapped in filter fabric. Next, we ran a short length of pipe from the drains to our sump location and then moved the 30-inch-diameter high-density-plastic culvert into place, first cutting a slot in its bottom edge in order to slip it over the drain pipe **(4)**. We wrapped the cut slot in filter fabric, then installed a second lift of gravel 18 inches deep to help stabilize the vertically installed culvert until it was backfilled with sand.

Connecting the pump. After backfilling and running a 2-inch PVC discharge pipe and electrical conduit to the sump, my crew hoisted me into the culvert. I'm a big guy and a 30-inch-diameter space is a tight fit, but I managed to set our 3/4-hp sump pump on a concrete paver to elevate it above the gravel, and then connect the pump's discharge pipe, which leads to a roadside ditch roughly 75 feet away. Working from above, a crew member screwed a junction box near the top of the culvert **(5)**, while I set the pump's control- and overflow-alarm float lengths. We made our power and control connections from the pump and house at the box, then fastened a 30-inch-diameter hard plastic lid to the culvert.

The sump has an overflow alarm, which is located near where the conduit passes through the foundation. This is right next to the home's septic alarm, since the site's high water table also required engineered mound septic systems.

Josh Girard owns and operates North Country Construction, in Jericho, Vt.

Exterior Sump Pit



The foundation holes were dug 24 inches above the historic high water-table line while the bottom of the sump pits were set 18 inches below the top of the footing. Potential groundwater will be discharged into drainage swales 50 to 100 feet away from the development's seven sump pit wells. Pump activation can be fine-tuned by adjusting the length of the float lines.

BY JAKE LEWANDOWSKI

Repairing Rotted Trusses

My family has a structural repair business in the greater Chicago area, and we are often called in to repair damage caused by water leaking into a building. In my position as project manager, I am responsible for assessing the problem, coming up with a repair solution, and then making sure that the repairs are completed properly in the most efficient way, while being fair and honest to the client.

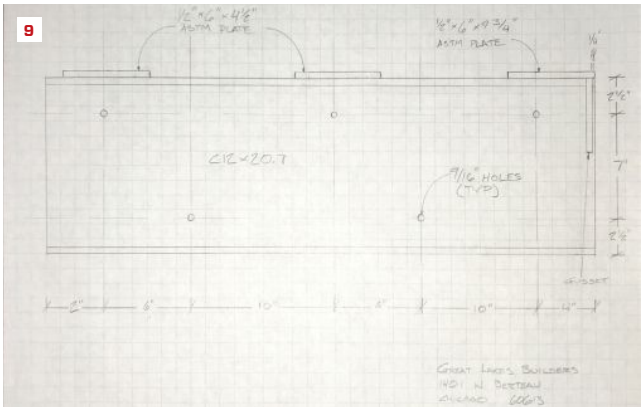
Damage from a roof leak. We recently were called in to repair trusses on a townhouse that was built in the mid-1990s. The trusses supported a third-floor deck with a living space below. After seeing water damage on some interior drywall, the clients opened up the wall below the trusses. When they found extensive mold, they removed the rest of the drywall, exposing an adjacent CMU wall with pockets that supported the trusses. The ends of three of the trusses had rotted **(1)**.

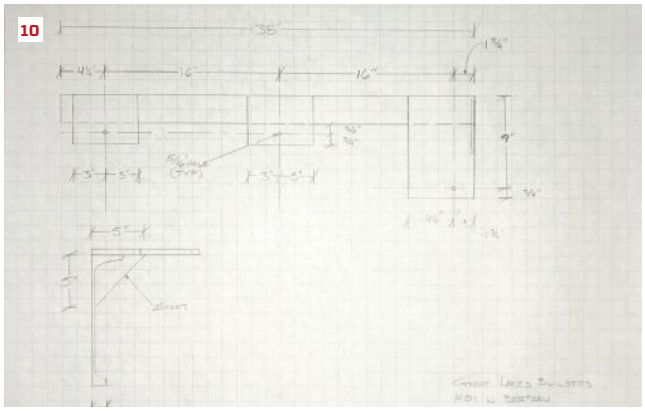
After removing the ceiling drywall and finding more mold, the clients discovered that water had been coming in where the roof met the parapet wall. The contractor who had done all the work up to that point replaced the entire roof under the deck, including the sheathing. A mold-mitigation company cleaned away the mold and painted all the framing with white mold-resistant primer. An engineer was called in to assess the damage to the trusses, and we were called in to do the structural repair to the trusses.

Engineer's specs. The engineer's recommendations were specific. The trusses needed to be lifted to their original height and cut flush with the inside face of the CMU wall, with the rotted sections removed. To reinforce the ends of the trusses, 3/4-inch plywood gussets were to be attached to both sides of each truss with 10d nails 3 inches on-center on all chords. To keep the plywood from cupping under the load, 2x4 squash blocks were to be inserted between the top and bottom

Removing water-damaged ceilings and walls revealed three trusses with rotted ends **(1)**. To reinforce them, the author made plywood gussets. He traced the chord pattern onto a blank **(2)** and made a template to transfer the fastener layout **(3, 4)**. Squash blocks stiffened the ends of the trusses **(5)**.

Photos by Jake Lewandowski





A palm nailer was used to drive the specified fasteners at each location to attach the gussets to the ends of the trusses **(6)**. The crew used screw jacks and beams to lift the trusses to their original height **(7)**, then cut away the rotted wood with a reciprocating saw **(8)**. With an engineer's guidance, the author drew the support-beam elevation **(9)**, plan, and section **(10)**.

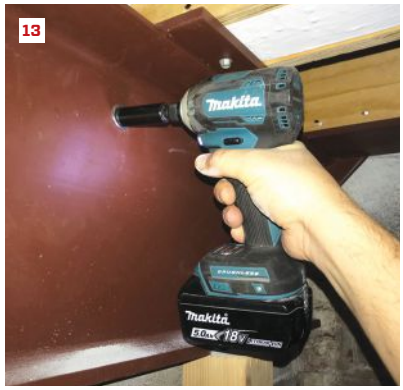
chords. Then MC 12 x 14.3 steel C-channel (12 inches tall and weighing 14.3 pounds per foot) needed to be fastened to the CMU wall below the trusses to support their load.

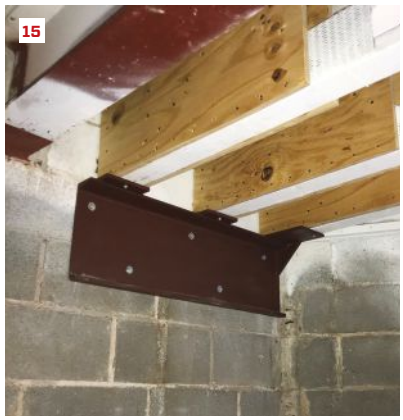
Plywood gussets. The first step was making the plywood gussets for the 15-inch-tall trusses. We cut blanks 15 by 36 inches out of 3/4-inch plywood with the grain running in the long direction. To ensure that we met the nailing schedule on all of the gussets, I made a fastener template by clamping one of the blanks to the side of a truss and tracing the outline of the truss chords **(2)**. Then I plotted out the fastener locations and drilled a 1/2-inch-diameter hole at each location, big enough for a marking pen. With that pattern, we were able to quickly transfer the exact fastener locations to each of the six gussets **(3, 4)**.

Before attaching the gussets, we inserted the 2x4 squash blocks as specified by the engineer **(5)**. We then clamped the gussets to the trusses and drove nails at each fastener location, using a palm nailer **(6)**. With the gussets in place, we spanned across the underside of the trusses with beams and lifted them using a four-point screw jack assembly **(7)**. When the trusses were at the proper height, we cut the rotted part off the ends with a reciprocating saw **(8)**.

Steel support. The channel specified by the engineer had a flange depth of 2.12 inches, which meant that the modified trusses would have only 2 1/8 inches of bearing. I needed to increase the bearing in a way that could be concealed by the contractor coming in after us to do the interior finish. Additionally, one of the trusses was in much worse shape than we had originally thought—with no solid wood until 8 1/2 inches from the end. So I called the engineer and asked if I could use sections of 1/2-inch plate welded to the channel to extend the bearing area. For two of the trusses, the plate would be 4 1/2 inches long; to adequately support the worst one, however, we'd need a 9 3/4-inch section. These sizes would provide enough length to support the trusses and to allow for drilling holes to lag the plates into the trusses.

The engineer specified adding a diagonal gusset to support the longest plate section, but he said I could put the gusset at the end of the channel to keep it concealed in the wall. Armed with all of this





The author's approved drawings guided the fabrication of the support beam **(11)**. With the beam lag-bolted to the trusses, the crew drilled holes for the anchors **(12)**. The anchors were first snugged with an impact driver **(13)**, and then given their final torque with a ratchet wrench **(14)**. The final assembly will be concealed in the wall after the finishes are applied **(15)**.

information, I drew up the beam with the supports, the gussets, and the fastener locations and sent the drawings to the engineer **(9, 10)**. After getting his approval, I gave the drawings to my steel fabricator, and he made up the support beam with the welded support plates **(11)**. The drawings were pretty basic, but doing them gave me control over exactly how the beam would turn out, and it saved me the expense of hiring someone to draw the beam.

Installing the steel. The steel support beam arrived painted with a rust-resistant finish. Two crew members lifted the beam and held it in place under the trusses while I drove 1/4-inch lags into the trusses through holes drilled in the support plates. The lags held the beam in place temporarily while we fastened the vertical part of the beam to the CMU wall. At this point, the trusses were already at their final elevation, but to make sure that they wouldn't drop a bit when we removed our temporary supports, we jacked a 4x4 post under the channel to keep it snug against the trusses.

The engineer specified 1/2-inch-by-2 1/4-inch Hilti HLC-H sleeve anchors to fasten the steel channel to the concrete block wall. I had laid out the fastener holes for the steel fabricator to ensure that the fasteners landed well clear of the mortar joints between the blocks.

With the steel channel held firmly in place, we drilled holes for the sleeve anchors **(12)**. After drilling the holes, we blew the dust and debris out of them and tapped the anchors into place. It is important not to overtighten sleeve anchors, so we first tightened them with an impact driver until they snugged up **(13)**, then finished torquing the sleeve bolts by hand with a ratchet wrench **(14)**. After removing the temporary supports under the trusses, we cleaned the jobsite thoroughly (we always try to leave the place cleaner than it was when we arrived). Our job as the structural repair crew was finished and the site was ready for the restoration crew to come in and reconstruct the interior finish **(15)**.

Jake Lewandowski is a construction manager with his family's business, Great Lakes Builders (greatlakesbuildersinc.com), specializing in structural repairs in Elk Grove Village, Ill.

How Can I Get Rid of Carpenter Bees?

Posted by: Cooper Pest

Anyone who has spent countless time outdoors knows that carpenter bees can be intimidating with their hovering, death “stares” and darting movement. However, despite their menacing, “ready-to-fight” demeanor, these bees are generally harmless. Carpenter bees are pollinators who are an asset to the environment but can sometimes cause aesthetic damage to various structures on a home-owner’s property. So, what can you do about it? Can you even get rid of carpenter bees or do you just have to deal with their annoyances?

Carpenter Bee on a wood exterior. ***Photo Credit: Cooper Pest Solutions***

How Do I Know if I have Carpenter Bees?

Do you see large black and yellow bees hovering and darting around the eaves of your home, around your deck or around wooden playsets? If so, then it is possible that you have carpenter bees nesting in your structures.

Since carpenter bees are solitary bees, their nesting habits are quite different from other bees. For instance, bumble bees, who are often mistaken for carpenter bees, usually nest in the ground, but carpenter bees will create tunnels in wood to lay their eggs. If you notice a number of large bees flying around the eaves of your home, you probably have carpenter bees.

What Type of Wood do Carpenter Bees prefer?

Is there a particular type of wood that carpenter bees would rather nest in? Yes! When a female carpenter bee is looking to nest, she typically prefers bare, unpainted or weathered softwoods.

Types of wood carpenter bees prefer to nest in include:

- Pine
- Redwood
- Cedar
- Cypress

Pressure treated or painted wood is less susceptible to carpenter bee nesting. Although they prefer bare wood, don't be surprised if you find them nesting on your wood-stained deck as the stain isn't as much as a deterrent as paint. The wood stains are less reliable than paint but could provide some degree of repellency as opposed to having bare wood.

Common Areas for Carpenter Bee Nesting

- Eaves
- Window Trim
- Fascia Boards
- Siding
- Wooden shakes/shingles
- Decks
- Outdoor furniture
- Wooden Play Equipment

What Kind of Damage Can Carpenter Bees Cause?
Carpenter bee damage

Woodpecker damage on a fascia board and carpenter bee staining on a home.

Photo Credit: Cooper Pest Solutions

Carpenter bees, although harmless, can cause aesthetic damage to your home, primarily with their drilling and staining.

During the spring (April and May) months, carpenter bees re-emerge from hiding in abandoned nests over the winter to mate. After mating, fertilized females will excavate tunnels in wood to lay their eggs (about 6-8 eggs) in a series of small holes. You will notice that the holes are perfectly round and are about the diameter of a finger. Female carpenter bees will create one nesting hole, so if you happen to notice several holes, that means you have multiple bee nests. It's a one-to-one ratio in respects to bees to nests.

Since the majority of damage caused by carpenter bees is purely aesthetic, Cooper Pest Solutions' CEO Phillip Cooper explained that if the staining from the drilling isn't bothersome, then you may choose not to do anything.

"Carpenter bees only cause damage to the aesthetics of a home," he said. "They often get a bad reputation for the drilling but they aren't causing any structural damage to a home. If you aren't bothered by the staining that they leave behind, then just let them keep doing what they are doing."

Sometimes females may return to the same nesting sites year after year, creating new tunnels for egg laying. If this is the case, aesthetic damage can increase from one year to the next, unless you choose to receive treatment.

Although female carpenter bees may only be causing aesthetic damage to your property by nesting, you may also notice increased woodpecker activity in the same area as the nest. This happens because woodpeckers find carpenter bee eggs to be quite a delicacy. Unfortunately, this can cause additional damage to fascia boards on your home or property as the woodpeckers are pecking at the wood to get to the bee larvae that's nested inside.

How Can I Get Rid of Carpenter Bees?

There are a number of ways you can reduce the activity of carpenter bees on your property but if you would like to prevent carpenter bees from returning, it is best to contact a pest management professional to address the problem.

DIY Carpenter Bee Treatment Options

As a homeowner, the best way to help prevent any carpenter bee nesting is to paint all exposed wood surfaces. Wood stains aren't as reliable as paint, but it still provides some degree of repellency as opposed to bare wood. The biggest problem with this is that the wood must be painted on all surfaces before installing it on the home. For example, if you paint the outer surface of the wood along the eaves of the home, the bees can still attack the unfinished back side of the wooden boards.

What Can I Do about Fascia Board Damage and Carpenter Bees?

When carpenter bees nest, they typically nest behind fascia boards along a roofline on a home. If woodpeckers are searching for the carpenter eggs, they can leave damage along the fascia boards (eaves) as they peck into it for the eggs.

If you're looking to prevent this damage, follow these tips as described by Cooper:

- If you are looking to replace the wood fascia boards, don't just put up new wood. Carpenter bees will just re-infest the new wood causing you the same problems.
- If you want to prevent their return, wrap all **THREE** sides of the board in aluminum or vinyl siding. Do not just wrap the two exposed sides because the bees will nest on the underside of the board. **Be sure to wrap the front, under and back side of the fascia board to prevent carpenter bee nesting.** Carpenter bees **CAN NOT** chew through aluminum or vinyl so this will prevent future nesting if all sides are properly wrapped.

What to Expect with Professional Carpenter Bee Treatments

Carpenter Bee holes filled by a professional pest control technician.

Photo Credit: Cooper Pest Solutions

Carpenter bees can cause aesthetic property damage if left untreated year after year, so it is best to choose a professional to handle your carpenter bee problem. There are a number of ways a pest professional may treat for Carpenter Bees, but a few common ways are residual liquid treatment, dust product application and plugging of carpenter bee holes.

Residual Liquid Treatment for Carpenter Bees

- If you currently have carpenter bees, your pest control technician will spray the liquid treatment in areas where carpenter bees are boring into wood.
- If you're looking to prevent carpenter bees, these treatments will be applied in March and early April before nesting begins.

Dust Application Treatment for Carpenter Bees

- Your technician may use a dust product inside the current carpenter bee holes on your property as a remedial and/or preventive treatment.
- For remedial treatment, dusting will usually only work on active carpenter bees, not on eggs due to the walls protecting them within the tunnels.

Plugging of Carpenter Bee Holes for Treatment

- Your pest control technician may also use a cork, putty or caulking compound to plug the holes so that the bees are unable to return to the tunnels for future nesting. This is typically done during July or the summer months once all the active bees have left the nest and prior to the overwintering bees returning.

Carpenter Bee Removal and Prevention

Receiving effective preventive carpenter bee services can be difficult to find but Cooper Pest Solutions' carpenter bee prevention is effective for a number of reasons.

"We use non repellent products because we don't want the bees to avoid the areas we have treated," said Dave Burgess, vice president of operations at Cooper Pest Solutions. "We feel it is best to get close to the activity so we can precisely apply the products where the bees are likely to come in contact with the pesticide. Often the bees are nesting up by roof lines, so when possible we will use extension ladders or telescoping equipment to treat those areas. Lastly, knowing where the bees are likely to nest helps direct our treatments. Knowing the bees like wood and prefer to chew in a safe area, coupled with the experience of thousands of jobs under our belt helps us quickly locate where the bees are or likely to be and treat those areas."

Dr. Richard Cooper, staff entomologist at Cooper Pest Solutions, also pointed out how important timing is when it comes to plugging the carpenter bee holes.

"I wouldn't recommend sealing holes at the time of treatment," he said. "Sealing holes at the time of treatment may not be effective because the active bees can still chew their way out. The best time of year to seal the holes is in the middle of summer because all of the active bees are out of the nest and the overwintering bees haven't gone back in the empty tunnels yet."

How you Can Further Prevent Carpenter Bees After Professional Treatment

Upon professional treatment for carpenter bees, there are a few tips and tricks you can do to continually decrease carpenter bee activity on your property.

- Paint all of your unfinished wood on your property, outdoor buildings and furniture. Freshly painted wood is even less attractive for a Carpenter bee.
- Seal all exterior openings, cracks and crevices with caulk.
- Carpenter bees will revisit holes from previous seasons, so be sure to caulk those openings during the fall months to help prevent spring infestations.
- Be sure to wrap all THREE SIDES of fascia boards in vinyl or aluminum to prevent carpenter bees from nesting in the fascia boards.

Burgess added that whether you are painting or wrapping the fascia boards, it is crucial that all sides are painted or wrapped.

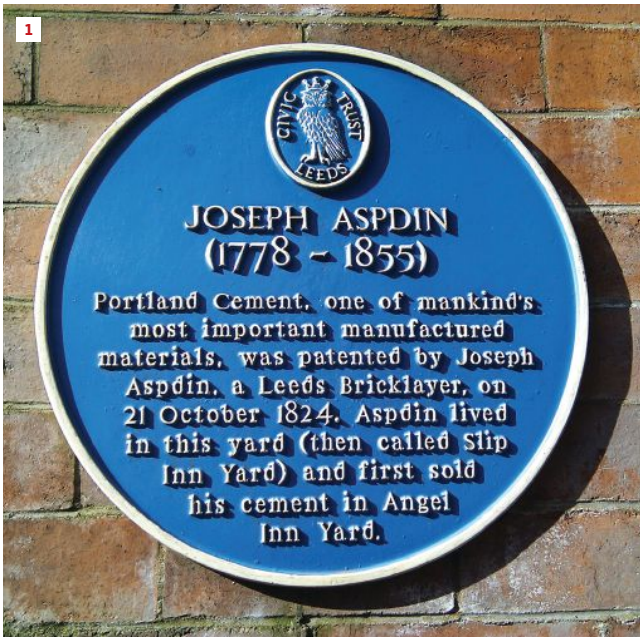
“Painting helps, but on the fascia board the same issue exists with painting the same as wrapping the siding,” he said. “The bees attack the wood from behind, so if you just paint the front of the fascia board you will not repel the activity. You really need to take the fascia down and paint both sides for this approach to be effective.”

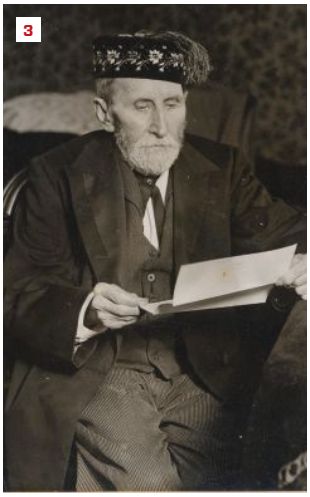
Let Cooper Pest Solutions Take Care of Your Carpenter Bee Problems

Whether you continually have carpenter bee activity year after year or you have noticed an increased activity this year, give Cooper Pest Solutions a call at 1-800-949-2667. Our skilled technicians have the knowledge and tools to provide you with safe and effective bee removal. If you would like to prevent future infestations, Cooper Pest Solutions offers preventative services for future bee infestations. Our effective treatments are environmentally conscious and our service is guaranteed! Give us a call today at 1-800-949-2667 or fill out our FREE ESTIMATE FORM today!

Carpenter bee services can now be scheduled online for fast technician dispatch on the date of your choosing. No initial inspection is needed.

BY JLC STAFF





A plaque in Leeds, England, proclaims Joseph Aspdin as the father of Portland cement **(1)**. But it appears to be Aspdin's son, William **(2)**, who actually discovered the method for producing the material. Some years later, Isaac C. Johnson **(3)** independently rediscovered the secret. Late in life, Johnson wrote an autobiography claiming to be the "true" inventor of Portland cement.

Who Invented Cement?

A plaque in the English industrial city of Leeds proudly proclaims a son of the city, bricklayer Joseph Aspdin, as the inventor of Portland cement. Like much history, however, this claim is at best only partly true, says Robert Courland, the author of "Concrete Planet: The Strange and Fascinating Story of the World's Most Common Man-Made Material." What is more likely, according to Courland, is that the secret of Portland cement as we now know it was stumbled on by Aspdin's son, William. In his book, Courland describes a cast of characters worthy of a Charles Dickens novel—and at the center of the plot is William Aspdin, a self-promoting swindler and con man who also happens to be the true father of Portland cement.

Joseph Aspdin did, as the plaque states, patent a material called Portland cement in 1824 (the cement being similar in color to Portland stone, popular in England at the time). But his lime-based mortar was not much harder or stronger than any other product of its day, though Aspdin worked mightily to improve the product, experimenting with various formulas and ways of producing the powder. (As a humble bricklayer, Aspdin had trouble procuring the rough limestone for his efforts—apparently even going as far as to pilfer stone from local roadways, a practice that twice got him fined by the authorities.)

Aspdin the elder would grind up the stone, mix it with water and clay, dry the mixture, kiln it until it was hard, and grind it up again to make his cement powder. Apparently, he discarded some of the product—the overbaked "clinkers"—because it was too hard to grind. It was William, the son, who seems to have had the bright idea of saving and grinding up the clinkers. And it was the clinkers that yielded the cement that actually rivaled Portland stone for hardness and durability.

William broke with his family in 1841 and moved to London, where he set up in the cement business on his own. Writes Courland, "William apparently kept the secret of the clinkering process to himself, for there is no evidence that his father made clinkered cement after his son's departure to London."

Over the years, William would make a name for himself in a less fortunate way: as a serial embezzler, who pocketed everything from co-investors' cash to his employees' wages. His advertising claims for his cement—good as it was—amounted to creative fiction, according to Courland. But for many years, until a competitor named Isaac Johnson finally figured out how he was doing it, Aspdin's Portland cement dominated the industry. Still, his penchant for cheating his partners brought him to trouble. He ended his days, at the age of 49, alone and friendless in Europe.

Images courtesy: 1, Ben Dalton via Wiki; 2, "Concrete Planet," by R. Courland; 3, the110club.com

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

Frequently Asked Flu Questions: 2019-2020 Influenza Season

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What viruses will the 2019-2020 flu vaccines protect against?

There are many different flu viruses and they are constantly changing. The composition of U.S. flu vaccines is reviewed annually and updated as needed to match circulating flu viruses. Flu vaccines protect against the three or four viruses (depending on the vaccine) that research suggests will be most common. For 2019-2020, trivalent (three-component) vaccines are recommended to contain:

- A/Brisbane/02/2018 (H1N1)pdm09-like virus (updated)
- A/Kansas/14/2017 (H3N2)-like virus (updated)
- B/Colorado/06/2017-like (Victoria lineage) virus

Quadrivalent (four-component) vaccines, which protect against a second lineage of B viruses, are recommended to contain:

- the three recommended viruses above, plus B/Phuket/3073/2013-like (Yamagata lineage) virus.

The World Health Organization (WHO) made the selection of the H1N1 and both B components for 2019-2020 Northern Hemisphere flu vaccines on February 21 and at that time decided to delay the decision on an H3N2 vaccine component. FDA's Vaccines and Related Biological Products Advisory Committee (VRBPAC) also selected the H1N1 and B components at their first meeting on March 6, but also decided to postpone the selection of the H3N2 component. WHO selected the H3N2 component listed above on March 21, 2019. VRBPAC chose the same H3N2 component for U.S. vaccines on March 22, 2019.

Are there any changes to the 2019-2020 Northern Hemisphere vaccines from what was included in this season's 2018-2019 U.S. flu vaccines?

Flu vaccines are updated to better match circulating viruses. The A(H1N1)pdm09 vaccine component was updated from an A/Michigan/45/2015 (H1N1)pdm09-like virus to an A/Brisbane/02/2018 (H1N1)pdm09-like virus. The A(H3N2) vaccine component was updated from an A/Singapore/INFIMH-16-0019/2016 A(H3N2)-like virus to an A/Kansas/14/2017 (H3N2)-like virus. Both B/Victoria and B/Yamagata virus components from the 2018-2019 flu vaccine remain the same for the 2019-2020 flu vaccine.

Why was there a delay in selecting the A(H3N2) virus component of 2019-2020 flu vaccines?

A number of factors can make getting a good vaccine virus for vaccine production challenging. H3N2 viruses have presented an increasing challenge for vaccine virus selection due to frequent changes in the H3N2 viruses and difficulties in generating optimal candidate vaccine viruses for use in manufacturing. In February 2019, experts at the vaccine consultation meetings reviewed various sources of data including virus surveillance, antigenic characterization, and virus fitness forecasts, identified multiple co-circulating H3N2 virus groups. These data showed that the proportion of viruses in one antigenically distinct group of H3N2 viruses (called 3C.3a virus) was rapidly increasing in some countries, particularly the United Sates. Selection of an H3N2 vaccine virus for 2019-2020 Northern Hemisphere vaccines was delayed from February to March to allow more time for monitoring H3N2 virus circulation and characterization of potential H3N2 candidate vaccine viruses.

Is it the first time that a WHO recommendation of a component of the seasonal flu vaccine has been postponed?

No. The last time there was a postponed influenza vaccine recommendation was in February 2003, due to challenges selecting the A(H3N2) vaccine component for the 2003-2004 flu season. During the 2002-2003 influenza season, a distinct antigenic group virus emerged and increased in circulation, but it was unclear how fast the increase would be and no appropriate candidate vaccine virus was available at the time. Therefore, the decision was postponed and the recommendation was announced in March 2003.

Will the delay in selecting the H3N2 component delay availability of flu vaccines for the upcoming 2019-2020 northern hemisphere flu season?

It is too soon to say how the delay in the selection of the H3N2 candidate vaccine component may affect the timing of vaccine availability for the 2019-2020 flu season. Private manufacturers in the United States produce flu vaccines each season. Once the viruses are selected for the new vaccine formulation, manufacturers operate under a tight timeline for producing, testing, releasing and distributing flu vaccine. CDC and other federal partners will continue to coordinate and collaborate with U.S. flu vaccine manufacturers to monitor production and vaccine availability timelines

Q What are the concerns about VOC emissions from exterior plywood and OSB?

A Clayton DeKorne, chief editor of *JLC*, responds: VOC emissions are pretty much a nonissue for exterior-grade plywood and OSB. Exterior-rated structural panels use moisture-resistant phenolic-formaldehyde resins in the adhesives (this is also true for wood I-joists, LVL, glulams, cross-laminated timber, and many other types of engineered lumber). These adhesives do not off-gas substantially, nor do they add much of anything to the levels of indoor air contaminants.

The emissions from exterior-rated composite wood products are quite different from the off-gassing typically experienced from more volatile urea-formaldehyde resins that bind together interior-rated panels, such as the particle board and MDF used in some cabinetry, as well as laminated flooring. But even that is changing quickly.

Effective June 1, 2018, all composite wood products must meet formaldehyde emissions standards set by the California Air Resource Board (CARB) Air Toxic Control Measure (ATCM) for Composite Wood Products. And effective March 22, 2019, these products must meet a national formaldehyde standard, dubbed TSCA Title VI, put forward by the Environmental Protection Agency, which mirrors the CARB standards.

These standards apply only to hardwood plywood (veneer and composite-core panels), particleboard, medium-density fiberboard (MDF), and thin MDF. Structural engineered wood products manufactured for construction applications, including structural plywood, oriented strand board (OSB), wood I-joists, laminated veneer lumber, and glued-laminated timber, have always been exempt from regulation by both CARB and TSCA because they are made with low-emitting, moisture-resistant adhesives.

It's worth noting that the new EPA ruling that set formaldehyde limits effective in 2018 and 2019 applies only to the manufacturers of those panels. The regulation is intended to limit products in the supply chain. Installers of the panels cannot be penalized.

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