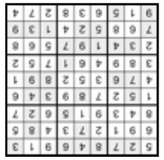

Sudoku solution from Page 3

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Need a Boost?

NATURAL SUPPLEMENTS TO INCREASE YOUR ENERGY

Ashwagandha

Ashwagandha is an evergreen shrub found mostly in India. As part of the Ayurveda system, an alternative medicine practice from India, it's also known as "Indian ginseng." The Alternative Medicine Review published a study indicating ashwagandha increases the body's resilience to physical and mental stress by lowering levels of the stress hormone cortisol by 28%. Ashwagandha can also help you through long workouts and the 9-to-5 grind because it may also improve brain function, including memory. You can get ashwagandha in pill form at most convenience stores around the world.

Creatine

Many people don't realize creatine is a natural energy booster because they get it mostly in processed, high-sugar energy drinks. However, in doses less than 5 grams, creatine provides impressive benefits during high-intensity activities, short-duration exercises, and sports, including football, shot put, and weightlifting. This compound is found in red meat, pork, poultry, and fish, and when consumed, it releases phosphates that give your body a quick burst of energy. Ingesting more than 5 grams, though, will leave you feeling bloated with a lot of stomach discomfort. Creatine powder can be found at most wellness stores.

Beetroot Powder

Beetroot powder is made from the roots of the beet plant and is rich in nitrate. Nitrate relaxes blood vessels, creating increased blood flow and oxygen delivery. This enables your body to produce energy more efficiently and maintain energy levels, making beetroot powder a great aid for endurance sports like running, soccer, and biking. In the International Journal of Sports Nutrition and Exercise Metabolism, a study reported that athletes could work out for 25% longer when they used beetroot powder. Fatigue didn't set in until much later in their workout, which improved their training and performance.

This spring, say goodbye to energy drinks and get the boost you need with one of these natural energy supplements.

First Rule of (Building Science) Fight Club

Let's Talk About It!

Social media is one of the biggest time wasters humanity has ever invented. You can open an app to check your updates after dinner, and suddenly it's past midnight! That said, of course I'm on social media. It's 2020 after all!

There are two forms of social media I use: LinkedIn and Instagram. LinkedIn is a good opportunity for me to learn about the people in the industry, meet peers, and find potential clients. I'm probably not spending hours on LinkedIn. Instagram, meanwhile, is a very different story. You can go crazy with things on Instagram. It's easy to go off on a tangent and waste hours just looking at other people's pictures. However, over time I've found that Instagram can also be a great resource in my industry, particularly in the field of building science.

BuildingScienceFightClub is an excellent Instagram account started by architectural designer, Christine Williamson. When Christine first told me about the account, the name made it sound really exclusive. But when I checked it out later, I found that it's really just building science for architects. This really excited me because so much of what I do in my day-to-day job involved failures in the design of the building. BuildingScienceFightClub has given me a lot of really good insight into what is going on in the construction industry. It's a sort of peek behind the curtain that helps me solve problems better for my clients.

A big thing that's going on in the construction industry right now is that everyone and their brothers are coming up with new and exciting technologies. We have new devices and tools designed to keep water and air out, manage water, or just generally improve the construction capabilities for contractors to help them avoid mistakes. Unfortunately, what usually happens is that contractors aren't being trained properly on how to actually use these new technologies.

> "New technologies are being installed improperly, so we end up with the same old problems."

This is how we end up with contractors who don't know how these new technologies are supposed to be installed. Contractors will install them the way they would with older technologies. New technologies are being installed improperly, so we end up with the same old problems.

BuildingScienceFightClub actually goes into the design and construction of all kinds of facilities, from single-family homes to commercial buildings. Christine posts graphics that explain what should be done, then shares pictures from construction sites around the Dallas area showing how it's not being done. There was one house she followed for six weeks, noting what was good about the design while pointing out what would go wrong because the contractor had not installed something properly. The house in question can expect to have a major water problem in 8–10 years.

Christine was gracious enough to chat about BuildingScienceFightClub in this month's newsletter, so you can learn more about the work she does on Page 3. You can also check out her account on Instagram, which I highly recommend. It all comes down to learning. That's what I love about BuildingScienceFightClub. People who follow this account are learning how things can be messed up during construction. There's plenty of learning to be done because this isn't a static industry. Everyone is coming out with new technology, new applications, and unfortunately, new ways to mess things up.

I go to Building Science Summer Camp every year in August to learn more about building science because I want to know more about the latest strategies and issues we face in the industry. It has a huge impact on the kind of work I do. In the interim, I can fall back on BuildingScienceFightClub if I ever need a building science fix.

Travis Wait

HEADS OR TAILS?

The Scientifically Smarter Way to Make Business Decisions

You have two options in front of you. They both sound great, are backed by research, and could transform your business for the better, but you can only choose one. Which do you commit to?

When you're faced with two equally worthwhile options, science says the best way to make a decision is to flip a coin. When you flip a coin, you're not really leaving the decision up to chance; you're actually calling on your intuition to guide you. The practice is often regarded as unscientific, but there's a lot of research to support making intuitive decisions. Friederike Fabritius and Hans W. Hagemann, authors of "The Leading Brain: Neuroscience Hacks to Work Smarter, Better, Happier," explain how we develop that "gut feeling."

Intuitive decisions are driven by two structures in your brain: the basal ganglia and the insula. The basal ganglia are connected to movement and building habits. The insula, part of the cerebral cortex, becomes engaged when you experience pain, feel love, listen to music, or even enjoy a piece of chocolate. Neuroscientists believe the insula is responsible for self-awareness, particularly for recognizing changes in your body.

When you have to solve a problem, your basal ganglia start working on a solution, even if you aren't consciously thinking about it. If you make a conscious decision that agrees with the subconscious solution of your basal ganglia, your brain gives off a subtle reward. The decision doesn't have to be logical to feel right — that's your gut feeling. However, if the conscious and subconscious parts of your brain don't agree, your insula detects the discrepancy and registers a threat. It's the "I have a bad feeling about this" response.

Fabritius and Hagemann note that gut feelings "represent the most efficient use of your accumulated experience." According to the authors, flipping a coin is the best way to really listen to your basal ganglia and insula. Your subconscious brain has already made a decision; flipping a coin helps you test your intuition about each option.

If the coin lands on heads and you feel relieved, then heads is the right choice. However, if the coin lands on tails and you're uncertain or want to flip again, then that's your intuition saying the other option is the better choice. So, the next time you're caught in a pickle, grab the nearest quarter and put your intuition to the test.

What We Don't Know

CHRISTINE WILLIAMSON PUTS BUILDING SCIENCE IN YOUR HANDS

Christine Williamson is a building scientist who made it through architecture school, in her own words, "by the skin of my teeth." Learning to be an architect is famously difficult, but Christine suspected, quite correctly, that learning architecture would be very different than actually working as an architect. Christine got her first taste of proper architecture work with Chris Benedict in New York City.

"Chris gave me my first hard hat," Christine says. "She's an amazing architect who is passionate about creating buildings that are both environmentally sound and financially viable. Chris put me in the field right away, sending me out to construction sites to see the process firsthand. I had the time of my life! That's where I fell in love with construction and realized that the process of architecture was so big. With an understanding of architecture and building science, I knew I could help address risk management in the design process and prevent building failures. I could be around design and contribute to it in my own way."

After working for Chris Benedict, Christine went on to work for a few other consulting firms before starting her own consulting business, where she teaches building science and construction to architects, developers, contractors, and other professionals in the building industry. Her consulting experience includes the restoration of Belvedere Castle in New York City's Central Park and forensic investigations of building failures at both the air traffic control tower of LAX and the Wheeler Opera House in Aspen, Colorado.

Architecture, building science, and construction are all best learned through apprenticeship. Christine credits her skill to quality mentors who shared wisdom she wouldn't have found elsewhere. This is what inspired her to found @buildingsciencefightclub, an Instagram account dedicated to teaching building science and construction to architects and other building industry professionals.

"In this field, it's not uncommon to feel like we *can't* admit when we don't know something," Christine says. "Or that the only way to get that knowledge is through embarrassment. I've been in that situation and it's not a feeling anyone should have. I started @buildingsciencefightclub to teach other people lessons that you'd otherwise only learn by being on a construction site every day — which very few architects get to do. Sharing my knowledge on Instagram for other people in the industry is my way of contributing to the apprenticeship model the industry is based on. The idea is to create a culture of open communication where people can ask questions and not be embarrassed by what they don't know."

HAVE A LAUGH WITH TRAVIS

SUDOKU

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What's in This Drink?

The Property Manager's Guide to Drinking Water Complaints

"Does this taste funny to you?"

Usually a question heard over questionable leftovers, the question becomes a lot more alarming when a glass of water is involved. Many property managers have dealt with calls from tenants complaining the water in their building "tastes funny." The potential liability for contaminated water means such complaints should never be taken lightly. When tenants think the water they're drinking isn't good, they usually want to know about the water quality they're getting on their floor. This is when property managers should consider domestic water quality testing.

In high-rise commercial buildings, it's very expensive to test the water quality on every floor. A reasonable alternative is to test the domestic holding tank. This is usually in the basement, though the holding tank is sometimes found in the mid-rise of the building. These holding tanks hold potable water which becomes drinking water, flushing water, rinsing water, etc., throughout the building. It's possible to collect samples of water from the domestic holding tank to determine the water quality that goes to tenant spaces.

When testing water quality, we look for the presence of potentially harmful contaminants. These include:

- Metals such as aluminum, lead, and mercury
- Physical factors like alkalinity and pH
- Inorganic analytes, which can include chlorine, nitrate, and sulfate
- Other chemicals (Our tests check for over 50 different chemicals.)

Traces of these contaminants aren't necessarily a cause for alarm. We compare the levels of any contaminants with national standards as defined in the EPA's Primary and Secondary Drinking Water Regulations.

Primary standards are the maximum contaminant level (MCL), or the highest level of contaminant that is allowed in drinking water. MCLs are enforceable standards.

Secondary standards are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. Individual states may choose to adopt them as enforceable standards.

When doing domestic water quality testing, we look for the presence of any contaminants and whether those contaminants, if any, are above the water regulation standards set by the EPA. These detailed results can help reassure concerned tenants that their water is safe. Test results can also help identify any possible problems and offer action steps for reducing the level of contaminants in drinking water.

If you have a tenant concerned about water quality, it is something that can be tested for. By testing your building's domestic holding tank, it's possible to test the water going to each floor of your building for around $500.