Episode Book

EPISODE #5633

Is Construction Noise Actually Inevitable?

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SYNOPSIS

Every fight about construction noise starts with the jackhammer — but the jackhammer is the last link in a chain of decisions made long before ground broke. This episode traces that chain back to its first link: the type of construction we've normalized. Starting from the contested Beit Alliance site on the edge of Jerusalem's Mahane Yehuda Market, we ask whether structural stone — quarried, cut, and numbered off-site, then assembled by crane like a kit — could make building fundamentally quieter. It's a real engineering story, with a twenty-storey unreinforced stone tower in Algiers that's been standing for seventy years as evidence. We also give the counterarguments their due: cranes still hum, trucks still roll, and quarrying just moves the noise somewhere else. The question isn't whether stone is romantic. It's whether a lot of urban noise was ever necessary in the first place.

TRANSCRIPT



Corn

Here's a thing I've noticed about how we talk about construction noise. Every conversation about it starts in the same place. Somebody's got a jackhammer outside their window at seven in the morning, and the conversation becomes about the jackhammer. How loud it is. How long it's going. Whether the city has a rule about what hour it can start. And that framing is wrong, and it's been wrong the whole time we've been doing this.



Herman

Wrong in what sense?



Corn

Wrong in the sense that the jackhammer isn't the problem. The jackhammer is the last link in a chain of decisions that were all made before anybody broke ground. And Hannah sent us something this week that goes straight at the first link in that chain.



Herman

Hannah who has strong opinions about the Beit Alliance site.



Corn

Hannah who has very strong opinions about the Beit Alliance site, and who wrote us a prompt that is a follow-up to a follow-up. The first episode was about why the construction around the Shuk is so loud. The second was Daniel pushing back and asking why we're excavating so deep in the first place, to build parking and towers that might be the wrong urban form for that location. And now Hannah wants to push it one step further and ask whether the real problem is the type of construction we've normalized.



Herman

Meaning the material.



Corn

She's been talking to a classical stonemason about the movement to bring structural stone construction back in Israel. And her angle, the one she says she hadn't thought about until recently, is noise. If stone is quarried and cut to size off-site, then brought to the site and assembled almost like Lego, could that be a fundamentally quieter process? And if you also got rid of the huge underground garages and the very tall towers, could traditional structural systems cut out the excavation, the heavy machinery, the concrete pouring, the drilling, and the months or years of constant noise that come with them?



Herman

She's asking four or five separate questions in one.



Corn

She is. And the last one is the one that matters. Is construction noise actually inevitable, or is a lot of it just the consequence of the way we've chosen to build?



Herman

That's a real question. That's not a rhetorical question.



Corn

Then let's take the whole chain seriously and see how far the evidence carries it.



Herman

Mahane Yehuda Market is bounded by Jaffa Road to the north, Agrippas to the south, Beit Yaakov to the west, and Kiach Street to the east. And Kiach is a reference to the Alliance Israélite Universelle. That's where the name comes from. Beit Alliance sits in the historic Alliance school compound right on the market's eastern edge.



Corn

So it's not a blank site on the edge of town.



Herman

It's the opposite of a blank site. The market dates to the late nineteenth century, the neighborhood was founded in 1887, and the market itself was formalized under the British Mandate in the late 1920s. There are more than two hundred and fifty vendors. It draws something like two hundred thousand visitors a week. It's heritage-adjacent, it's high-traffic, it's mixed religious and secular, Jewish and Arab, and it's a public space in the fullest sense. Which is exactly why construction disruption there is politically and socially charged in a way that a site out in the Jerusalem hills would not be.



Corn

Right. And here's the through-line for today, stated once. The noise at Beit Alliance is a symptom, not a cause. It's the audible output of a set of choices. Deep excavation. Underground parking. Tall towers. Concrete and steel construction. And preservation constraints that force slow, percussive work. We're going to interrogate those choices.



Herman

One honest caveat before we start, because I don't want it to feel like a gotcha later. The specific Beit Alliance preservation mandate, the approved tower height, the parking levels, the excavation depth, those are things we could not fully verify. So we'll reason from the general logic of how these projects work, and be clear about where the local specifics need actual reporting.



Corn

Fair. The logic is what we can test. So let's start with the piece from the first episode, because it turns out it's not just sentiment. Preservation does make construction noisier. And there's a mechanical reason for it.



Herman

There is. When you can demolish, you clear the site and you build. When you can't demolish, you have to shore, you have to underpin, you have to hand-excavate around existing foundations, and you have to work in constrained increments. Every one of those operations is small-scale and percussive. You're not bringing in one big machine to take



Herman (continued)

out a wall. You're bringing in a crew with hand tools to take out a wall in sections while a nineteenth-century foundation watches you.



Corn

So the noise isn't a side effect of preservation. It's the direct output of preservation.



Herman

It's the direct output. And it's not just louder. It's longer. A clear-site build has a demolition phase and then a construction phase. A preservation build has a slow surgical phase that runs underneath everything else, and it stretches the timeline by months. Sometimes years.



Corn

Which means the neighbors aren't just getting louder noise. They're getting more total months of noise.



Herman

More months of noise, and the noise is more irregular. A pile driver is loud but predictable. Hand excavation around a foundation is loud and intermittent, and intermittent noise is worse for sleep disturbance than steady noise.



Corn

Okay. That's the preservation complication. Now let's get to the part Hannah is really pointing at. Why are we excavating so deeply in the first place? Because if the answer is "because we chose to," then the noise is a choice too.



Herman

The single biggest driver of deep excavation in dense urban infill is underground parking. That's the answer. Every below-grade parking level requires excavation, retaining walls, dewatering, and often piling. And those are among the loudest, longest, most



Herman (continued)

vibration-heavy phases of the entire project. You're not building a building. You're building a hole, and then you're building a building inside the hole.



Corn

And the towers compound it.



Herman

Towers compound it. Taller buildings need deeper, heavier foundations. Piles, diaphragm walls. That means more drilling rigs, more concrete, more time. So the chain holds together. Build lower and skip the big garages, and you remove the loudest phases entirely. Not reduce. Remove.



Corn

Then let's talk about the material, because this is where Hannah's stonemason comes in. What is structural stone construction, properly defined?



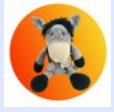
Herman

For most of history, stone was the structure. Walls, columns, arches, vaults. Stone carried the load. In the twentieth century, stone got demoted to cosmetic cladding hung on steel-reinforced concrete. The building is concrete. The stone is a costume. The structural stone movement restores stone to a load-bearing role.



Corn

And the engineering problem with that is tension.



Herman

The engineering problem is tension. Stone is very strong in compression. Many types are stronger than concrete in compression. But it's weak in tension and bending. So it's ideal for walls, columns, arches, and it's problematic for long floor spans.



Corn

Which is why you don't see stone skyscrapers.



Herman

Which is why you don't see many, but you do see some, and this is the part that surprised me. The tension problem is solved three ways. You can combine stone with sparing steel. You can use post-tensioned stone, which means steel tendons threaded through drilled ducts and then tensioned, so the stone is held in compression with tension elements doing the work. Or you can use stone for the vertical structure and use concrete, CLT, or post-tensioned stone for the floors.



Corn

So the stone does what stone is good at, and the steel does what steel is good at.



Herman

Exactly that. And then there's the method Hannah described as Lego. It has a name. Massive precut stone. MP stone.



Corn

Describe it.



Herman

Large machine-cut dimension-stone blocks, precisely cut off-site at the quarry or a masonry workshop to match the architect's plan. The blocks are numbered. They're assembled on site by crane, almost like a kit. It's a design-for-manufacture-and-assembly method. Modular, standardized shapes.



Corn

Who pioneered it?



Herman

Fernand Pouillon, in post-war France, from the 1940s. He adapted high-precision saws from the timber industry and applied them to stone. And the speed advantage is real. MP stone is faster than concrete because there's no setting or curing wait time. You can lay courses continuously. Pouillon built thousands of apartments in record time and at less-than-market prices.



Corn

Thousands of apartments. At less than market prices. In post-war France. That's not a boutique operation.



Herman

It's not. And it's proven at height, which is the claim people always doubt. There's a sixteen-storey load-bearing stone apartment building in Marseille, 2 Rue Saint-Laurent, built in 1948. And there's a twenty-storey unreinforced MP-stone tower in Algiers, Diar es-Saâda. Both have stood for about seventy years.



Corn

Unreinforced. Twenty storeys.



Herman

Unreinforced. And Algiers is seismically active. An engineering study found that the tower satisfies earthquake-resistance requirements. So the claim that stone can't go tall is empirically false. It's not a theoretical position. It's a building that exists.



Corn

Hold on. Say that number again.



Herman

Twenty storeys. Unreinforced MP stone. Seventy years old. In a seismic zone.



Corn

So when somebody tells you stone is a romantic throwback that can't do modern buildings, you can point at a building in Algiers that's older than most of the people making the argument.



Herman

You can. And it's worth saying what the alternative actually looks like on a site like Beit Alliance. The loud phases of a concrete build are excavation and earthmoving, piling and drilling, concrete pouring and pumping, and then the curing wait times that stretch the whole timeline. Plus the continuous small-scale percussive work, jackhammers and grinders, which is exactly what a constrained preservation site produces.



Corn

And the stone version of that?



Herman

The stone version moves the loudest stone-shaping work off-site. Sawing, drilling, cutting, that happens at the quarry or the workshop, away from residents. What arrives on site is numbered blocks. Assembly is crane-based. A crane lifting a numbered block into place is dramatically quieter than drilling, breaking, and pouring.



Corn

And no curing wait.



Herman

No curing wait. Which means the noisy phase is compressed. The site is active for a shorter total period. And if you've built lower and skipped the deep garage, you've removed the single loudest phase entirely. Less excavation, less machinery, less concrete,



Herman (continued)

fewer mixer trucks, fewer pumps, less of the continuous din that comes with them.



Corn

The urban-form argument and the material argument reinforce each other. That's the thing I keep circling back to.



Herman

They do. Build lower, skip the garage, use structural stone. Dramatically less excavation, less machinery, less concrete, less drilling, and a shorter noisy phase. Each one of those is a separate decision, and they stack.



Corn

Now give me the honest counterpoints, because I don't want this to sound like a sales pitch.



Herman

The honest counterpoints are real. Cranes and delivery trucks still make noise. A stone site is quieter, not silent. Quarrying itself is noisy and disruptive. It just happens elsewhere, away from the dense residential and market fabric. That's a genuine transfer of burden, and we should be candid that it's a relocation, not elimination.



Corn

The noise doesn't disappear. It moves.



Herman

Stone is also heavier, so you need more truck trips per unit of structure. That's a logistics trade-off. And then cost and industry inertia, which are the real obstacles, not acoustics.



Corn

Let's do the health evidence, because this is where the episode earns its "so what." If the noise is just annoying, it's an aesthetic complaint. If it's actually harming people, it's a public-health argument.



Herman

Construction noise is a top-tier urban acoustic pollutant. There's a Beijing study, Xiao and colleagues, 2016, that notes construction noise is the second most serious acoustic polluting element in China. Using disability-adjusted life years, they estimated that a single earthwork project caused thirty-four point five one DALYs of health damage and twenty point four seven million yuan in social costs. Sleep disturbance was the greatest health risk, and the most vulnerable age group was forty-five to fifty-four.



Corn

One earthwork project.



Herman

One. And a 2024 Turkish study, Köklü and colleagues, found that while nineteen percent of residents reported high annoyance from traffic, they were more disturbed by industrial machinery and construction activities. And they reported headaches.



Corn

So construction noise is more annoying than traffic.



Herman

More annoying than traffic, in that sample. Noise annoyance is the most widespread recognized health effect of environmental noise, and it's linked to sleep disturbance and downstream health-behavior effects. Children are especially affected, which matters given the Shuk's central location and the schools around it.



Corn

So the health burden of construction noise is quantifiable and significant. If a different construction method could compress or eliminate the loudest phases, that's not a lifestyle preference. That's a genuine public-health argument.



Herman

It is. And now the pushback you always get, which is that stone is a luxury material. Let's take that seriously.



Corn

Take it seriously.



Herman

The perception is that dimension stone is too expensive for non-luxury load-bearing construction. Advocates argue that this ignores system savings. Stone directly obviates fireproofing, waterproofing, cladding, and the fixtures connecting them. It cuts labor and design complexity. Amin Taha has shown that stone can be cut into bricks at the same cost or cheaper than fired-clay bricks, with less than one-fortieth the carbon emissions. Ten quarries now offer them commercially.



Corn

Same cost or cheaper than a fired-clay brick.



Herman

Same cost or cheaper. And the Stone Tower Research Project in 2020 found that a thirty-storey stone-and-post-tensioned-stone office tower would cost less than the same building in concrete. So the cost argument is not as settled as the industry pretends.



Corn

Then what's the actual barrier?



Herman

Forces of habit. That's the phrase. Big beast contractors have invested in concrete and steel and they rely on familiar suppliers. Taha says it takes time for the whole industry to swivel. And Steve Webb has the sharpest line on this. He points at architects who protest about the climate emergency, cycle to work, and eat locally grown tomatoes, but don't examine their own construction decisions.



Corn

That's a hell of a line.



Herman

It's a hell of a line. And the environmental numbers back it up. Load-bearing stone emits about one-tenth the carbon of a comparable concrete building. Stone has more than seventy percent less CO2 per square meter than steel or concrete. Stone is natural precast concrete. It only needs to be cut and strength-tested. Construction is responsible for about eight percent of carbon emissions, and the building industry as a whole is about a third of global CO2.



Corn

So this isn't only a noise argument. It's a noise argument that happens to come with a carbon argument and a durability argument attached.



Herman

It does. And the movement is real. The Stone Collective formed in the UK in 2024. There was a New Stone Age exhibition at London's Building Centre in 2020. The key figures are Amin Taha at Groupwork, Steve Webb at Webb Yates, Pierre Bidaud at The Stonemasonry Company, and Gilles Perraudin, who revived MP stone from the 1990s. And the projects are real. 15 Clerkenwell Close in London, 2017, a load-bearing limestone exoskeleton. Social housing in Cornebarrieu and Paris by Barrault Pressacco. Hundreds of stone social-housing units in Mallorca by IBAVI. A ten-storey load-bearing stone tower on Finchley Road in London, about seven hundred and twenty-five tonnes of Norwegian stone in five hundred and ninety-six columns and beams. And a proposed thirty-storey



Herman (continued)

stone-and-timber tower in Bristol.



Corn

Now bring it home. What about here?



Herman

Here is the interesting part. MP stone has already been used in the region. AAU Anastas' Toulkarem Courthouse in Palestine, 2015, uses MP stone with concrete. So the technique is not alien to the local building culture. And Israel and Palestine have a deep Jerusalem stone tradition and abundant limestone. The raw-material precondition is met.



Corn

The gap isn't the stone.



Herman

The gap is industrial. Quarries that produce dimension stone for structure rather than aggregate or veneer. That's the missing piece. We couldn't verify an Israeli structural-stone movement specifically, but Hannah's stonemason is presumably part of exactly such an effort. And the presence of heritage stonemasons in a region is the precondition for restoring structural stonemasonry.



Corn

So to land the provocation Hannah is actually making. Is construction noise inevitable, or is it the price of a construction culture we chose?



Herman

The evidence says the latter. A quieter, lower-carbon, more durable alternative already exists, and it's being built elsewhere.



Corn

And the urban-form argument and the material argument reinforce each other. Build lower, skip the garage, use structural stone, and you get dramatically less excavation, less machinery, less concrete, less drilling, and a shorter noisy phase.



Hilbert

The stone saw was a high, steady whine. You could hear it from a block away. But it stopped when the cut was done. That's the part I never forgot. The concrete pump is a low grinding roar that goes on for hours, because once the pour starts it can't stop. Same site, same day, two completely different sounds. One of them ends. The other one doesn't.



Herman

The duration is the thing.



Hilbert

And I'll tell you the other part nobody brings up. The stone yard was in an industrial zone. The people who lived near it complained too. There just weren't many of them, and they knew the yard had been there for decades. So the noise didn't disappear. It moved to where fewer people were listening.



Corn

Which is exactly the caveat Herman flagged. Relocation, not elimination.



Hilbert

Relocation. And that's a real cost. I'm not pretending it isn't. But there's a difference between a sound that stops when the work is done and a sound that continues because the material demands it. A stone saw is intermittent. A concrete pour is relentless.



Herman

That connects straight back to the health evidence.



Hilbert

It does. Sleep disturbance is the biggest risk in that Beijing study. And the forty-five to fifty-four group was the most vulnerable. That's not about volume. That's about a sound that won't let you sleep because it has no natural stopping point.



Corn

So the honest framing isn't "stone is quiet." It's "stone moves the noise, and it moves it to somewhere with fewer people and a shorter clock."



Hilbert

That's the honest framing. The noise doesn't disappear. It just moves to where fewer people are listening. And when you've spent enough time around both kinds of site, you start to think that where it goes matters as much as how loud it is.



Corn

So here's what I'm left with. If the evidence says construction noise is a choice and not a necessity, then the question isn't technical anymore. It's about why the industry keeps choosing the loud option. Is it purely cost and inertia, or is there something deeper about how we've decided concrete is modern and stone is old?



Herman

The structural stone movement is small but real, and it's already been used in the region. So the question for a place like Jerusalem, with its Jerusalem stone tradition, its abundant limestone, and its chronic construction-noise complaints, is whether it could be a natural home for it. Or whether the forces of habit are too strong.



Corn

Either way, the noise at Beit Alliance is the sound of a decision. The question is whether we're willing to make a different one.



Herman

Thanks as always to our producer, Hilbert Flumingtop.



Corn

This has been My Weird Prompts.



Herman

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Corn

We'll be back soon.