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YSP Podcast Transcript: 424. What if you could give your building an MRI?

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Intro: Welcome to Your Strata Property, the podcast for property owners looking for reliable, accurate and bite-sized information from an experienced and authoritative source.

Hello and welcome to this week's podcast Episode. I'm your host, strata lawyer Amanda Farmer, and this week I have not one, but two guests for you. Bruce McKenzie and Stephen Thornton. Bruce McKenzie has over 37 years' experience in the building industry as a licensed building contractor, project manager, program director and division manager on a wide variety of commercial and strata projects. Bruce is currently the national manager for major projects and strata remedial for the building consulting division at Sedgwick, who are known as the largest claims management corporation in the world today.

Today, in 2022, Bruce commenced a secondment with the Office of the New South Wales Building Commissioner to launch Project Intervene, a program to address serious defects in buildings constructed within the last six years. You might recognise his name. Bruce has been a guest on a past podcast Episode, Episode number 361 why you should be paying attention to project intervene. In that chat, Bruce was joined by Yolande Nyss and Elizabeth Stewart and together they help to explain project intervene.

Stephen Thornton has 40 years' experience in the government and private sectors. He is currently a director of Voltin .That's VOLTIN, which you will be hearing a bit about in today's chat. Steven is also a director of Bell's Property services, which provides specialist height access engineering and maintenance services. Now, Voltin is an internationally certified facade assessment system capable of high resolution visual data capture for high rise buildings.

And as you'll hear in this chat, Voltin is a way. Voltin is offering a safer, more accurate and more cost effective way, offering a safer, more accurate and more cost effective way of inspecting and detecting building defects. Now, the best people to explain this to you further are my guests today. I'll take you over now to my chat with Bruce McKenzie and Stephen Thornton.

Amanda Farmer: Steve Thornton and Bruce McKenzie. Welcome to the show.

Bruce McKenzie: Hi, Amanda. Thanks and good morning.

Amanda Farmer: Bruce, I'm going to start with you. What has been the traditional approach, I'm going to say, to dealing with strata building defects. And what do you say is wrong with that approach?

Bruce McKenzie: Look, the traditional approach, from my experience in the strata industry, is always reactive, not necessarily proactive. So what we generally find, it's normally an owner reacting to something specific that's causing them a loss of amenities or a loss of function or something in the building.

So they make their complaint and that will be escalated through the committee and either a building manager or property manager will handle that complaint. Investigations into the issue. Primarily what we find from that point forward is everything is time sensitive because the damage has occurred or the problems occurred, the loss of amenities occurred, and it's normally visual. A contractor or somebody will get called out to look at that specific problem and they'll unpack that problem and try and understand what's happening and what's gone wrong because it is time sensitive.

The solution applied to that problem quite often is temporary. It's something that might not necessarily look deep into the root cause of what the true problem is, but it might help to mitigate loss at that point in time which satisfies various parties. The other thing we find with that traditional approach as well is there's a distinct lack of planning and financial management to that because it's unexpected and because it is proactive, they ordinarily don't have funds to deal with that properly or at a specific time dig down to find what the root cause is.

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So there's many things wrong with that approach, but I think less considered decisions because it's time sensitive. Normally decisions are made fairly quickly, and normally those decisions, as I mentioned, are in and around a temporary fix rather than a permanent fix that might have delved into the actual problem. So there's lots of different things that are associated with that, not looking at all the associated impacted elements, quite often there's lots of different connected parts to what the defect might be. And normally what happens is those things are not considered, it's only the actual what's visual at the time. So that's normally the traditional approach. In my experience in strata, that's normally how it's handled.

Amanda Farmer: And just to be clear, we're talking about both what I would call as a lawyer, original building defects from the developer, original builder, and also for our older buildings, those repair, maintenance, remediation works that crop up over time.

Bruce McKenzie: Yeah, absolutely right. It's both. I think most people by nature are just reactive and they will look at those things that impact them. And often it is just personally what impacts a specific tenant, rather than looking more holistically at what might be impacting things like common areas or the broader building. So that's normally what gets first and that sort of how the pathway taken from there, unfortunately, in a lot of instances, is isolated to that specific thing rather than looking more broadly.

Amanda Farmer: Yep. Bruce, I know Steve's going to share with us the ways in which some new tech is helping to solve these problems. But sticking with you for the minute, what do you say is the recommended approach or the better approach to these types of repairs?

Bruce McKenzie: So technology itself, it's really changing how experts can look much deeper into building issues, providing information quicker results with less assumptions. So something like Voltin, for us, it allows us to view a facade, for instance, on a building where we could never realistically have achieved the level of detail we would have obtained using traditional methods.

That's either someone hanging off the building or someone looking from balconies or other areas. So it provides an extremely detailed account of what is on that facade, from minor to major issues in a fraction of the time. So I think the advantage for owners in particular, or building owners, is that information is extremely valuable, not only for the defect, but also for maintenance and other things moving forward.

So things like Voltin and technology like Voltin are certainly changing the way we do inspections and experts do inspections on building on that basis of far more data and far more information on what reasonably would have been obtained using any other method.

Amanda Farmer: Steve, I first heard about Voltin at the Strata Impact conference on the Gold coast about a month or so ago. And your presentation sort of eased us into understanding this technology by talking about the importance of asset digitization for our strata building. So can you share with our listeners exactly what that means and why it's important?

Steve Thornton: Asset digitization is simply having a visual and physical record in the format, such as a computer or on a tablet, that allows you actually find out anything you wanted to know the a to z of your building. In the past, everything was in manuals and gathering dust on shelving cupboards. Now there is the opportunity to fully record all of the information about a building and all of its services and all of its functions and put it in a digital platform, not just for inspections, but for the day to day functions. It can also be linked with all sorts of other management schemes. And I know most strata management companies have fairly sophisticated building management systems. Now, there's a means to fully integrate that with all of the technical information and the day to day operational functioning of a strata complex. How the pool system works, how the hot water system works, how the alarm and the fire control systems work, that can all be fully digitized and put in one central layer.

Now, that's the evolutionary thing. That's actually replacing hard copy and documentation. So that's what it means in terms of what Voltin offers. Our digitization is we actually can scan the entire building envelope from top to bottom and have a full visual record of what the building is in terms of its presentation, its plan, its layout, both in 2d or 3d. And the real point of emphasis for us is just finding out what the state of the building is.

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Now, in a lot of buildings in Australia, they are subject to weathering and the effects of water ingress and vibration over a long period of time. A building ages. It's no different to a human being. It doesn't get better as it gets older. It's not like red wine that stays in the bottle forever. So what it does, it gives a full ability to look at a building, record it and then measure it over time and have a good understanding of what's happening with the building, both internally and externally.

Amanda Farmer: So that's what asset digitization is. And I do want to get into exactly how that Voltin tech works. But firstly, returning to you, Bruce, can you share, if you've had this experience of working with a building that has no digitization of its assets or really no understanding of what's going on, and I don't know if a lot of these buildings exist yet, but compare that to a building that has engaged in this process for you, as an expert going in to assess a problem, how does that change your approach when you're dealing with that digitized info and that hard copy info, if it even exists at all?

Bruce McKenzie: Yeah, look, significantly would be the answer to that. I've been involved in one only in the last week or two, where there's been a lack of information, particularly digitized information that we've had access to. So things like preparing for an inspection, being able to access that information prior to going to site, getting a deeper understanding of what the issues are, what to focus on when you get there. You don't have the luxury of any of that by turning up to a building and going to a cabinet, as Steve pointed out, and looking for manuals and information. It's not practical, it's certainly not how modern technology is driving us at the moment. And it's a very, very real issue, and I think my consciousness all the time is how do I provide the very best value to owners in applying my time to a project and getting to the root cause of an issue the quickest. And there's absolutely no doubt that digitization gives us a far better advantage as an expert to integrate that with what we do.

Steve Thornton: Amanda, if I could actually add a parable.

Amanda Farmer: Go for it.

Steve Thornton: The reality is, in the last ten or 15 years, most families in Australia have dug out the family albums, dug out the cd rooms that they may have recorded, and thought, we need to record this family history, both the photographic and the video history. And they've decided that they're actually going to go out and create a digital copy because they know that's going to last. That is the sort of transition we're talking about with building management. So I understand there is a gap between the average body corporate or owner's corporation and the companies that actually manage them. So it's one of those things that it's going to be a process of transition wherever,

A small to medium sized community is actually going to struggle with that whole concept of digitization. But the reality is, I think that's one of the services that'll probably have to be offered by the strata management companies. They'll probably have to say, hey guys, how about we actually start putting a lot of your records in a digital form so all of the owners can access it? Because I understand currently most owners have got access through strata management portals that show whether their fees are up to date or what the latest financial position is.

They may even have the luxury of having the maintenance or sinking fund forecast on there, and they may even have the luxury of having some of the other information. But it would be really critical that they had not only records of annual general meetings or committee meetings, but also if they have records that show what the plumbing system is for their complex, what the fire control system is, et cetera, et cetera.

Because I understand one of the hardest jobs of all for someone purchasing in a strata community is finding out what the state of that community is, both in the physical state of the building, right through to the state of the owners corporation, how effective it is, how much money it's got in the bank and what's its maintenance forecast. So we're not talking about a simple process here. We're talking about something that will probably have to be staged over probably a decade, and it has to have all players involved in it.

Amanda Farmer: I recently put a call out to listeners to this podcast and those on my email list asking them what their biggest challenge was when it came to strata books and records. And I did get one reply back. It wasn't from either of you, but I think it was a building manager or a contractor in the space who said, the biggest problem is the lack of original as built drawings.

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We just don't know what we're dealing with. And I agree, Stephen, with everything you've said there about records, but I know, Voltin, and let's get into how that works. We're not just talking about scanning manuals and making sure we've got an asset register and things like that. You are actually scanning the fabric of the building, looking at the plumbing system, looking at the internal organs of the building, the ventilation system. Tell us, how does that all work?

Steve Thornton: We tend to concentrate on the building envelope, which is the skin of the building, and all the surfaces that hang off that. What we use is high resolution cameras, both in the normal white light spectrum and also the thermal spectrum. We also use a thing called lidar, which in layman's terms is basically lasers. And we use the laser component to do one of two things.

Firstly, we actually have an accurate measurement of where something is on a building. More importantly, what we can do with the laser or lidar fitments to the system, we can actually create something that's called a point cloud model. Now, what a point cloud model is, is millions of light targets in the hinging off a building, creating a physical model of a building.

Now, what that does, and we've used it for a couple of buildings where the building's over that 30 years of our age, there are no plans anywhere and they're not even found in the bowels of the building, shoved in a box, you can actually create brand new plans in full architectural quality with accuracy down to five millimeters, by using Lidar, ultimately to generate a point cloud, which then generates, through software, full architectural 2D and 3D plans.

And this technology is commonly referred to as building information modelling. And the acronym is BIM. But the reality is this is becoming more and more accessible to the general public. Currently, it's restricted largely to architectural and engineering firms, and it's commonplace in most large scale commercial practices and asset management companies. But it's becoming more and more accessible and affordable. I could actually show you a copy of what a BIM model looks like and how it's actually created.

Amanda Farmer: Yeah, look, if you've got a link to images or other resources, we can absolutely add those to the notes under this Episode so that listeners can click through and have a look.

Steve Thornton: That is not a problem. It's about a two minute video and it shows up a nine story building, fully digitized and created in an architectural 3d model. So it's a nice little presentation piece. There are about three ways we do it, because there are no two buildings that are ever the same. Right? Our preferred method is with a high rise building, and I'm talking usually buildings of ten levels and above. We actually mount on the top of the building what we can describe as a small scale crane and winch system, and we just lower our device over the side of the building. The traditional method was throw a guy on a rope over the side of the building and put it GoPro camera on his helmet.

This actually takes the human dimension out of it and it actually allows us to get 100% coverage of the building in full, glorious colour and in full thermal imaging. So the system is actually quite simple. It lowers a small device and the device is about the size of a small wine box, and it has cameras and computers and laser range finders and all sorts of other devices in it to allow for full automation of the system.

That's one method. Another method we also use a, what's called a tethered drone. So rather than just a free flying drone, where the building is actually well away from other buildings or well away from the general public, there are situations where you can use a tethered drone system, and that's ideal for buildings up to about ten to twelve levels. And the last method we've got is we mount our devices and our cameras and microprocessors on the end of a telescopic pole, and that allows us to elevate that up to about four or five levels.

So for low rise buildings, and the classic is a walk up twelve pack or six pack or 18 pack, small apartment complex, we can actually survey without actually suspending any device or flying anything. So there are a multitude of solutions. Now, in terms of cost, it's actually far cheaper to do it this way than by the conventional way, because when you actually have to throw a guy over the side of the building, he's never alone.

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He always has to have a partner that's going to rescue him when he gets in trouble. So the minimum base cost is almost \$2,000 a day just to actually do a survey of a building. I mean, if you're doing it in the traditional method, even a small building will take from anything from two to three days. So your base level cost for the human component is four thousand dollars to six thousand bucks.

Our systems, because we're taking out the human factor, we're actually doing it two or three times faster than you can with a guy hanging off a rope. And we're actually covering 100% of the building, is that the cost actually comes down. Now, as a rule of thumb, for a small building, it's going to cost between five and \$600 per level. So if you've got a ten story building, it's going to cost you about five or six grand.

Now, that's cheaper than any other method out there. It's cheaper than having a professional engineer come in and help pay off his new BMW by spending a couple of days on site.

Amanda Farmer Sorry to say, Bruce, but listening to how thorough this is. Bruce, can you speak to. And I know you provide expert witness services, and you'd be getting into some real difficult disputes about defects, what it looks like, what it is, how it was caused, where it is, what the consequences are.

How is this kind of technology helping you to advise buildings in those types of situations?

Bruce McKenzie: I think the primary difference really, as Steve pointed out, you hang somebody off the side of a building, and visually, you'll look at these elements and areas. It's limited to what you can see visually from anyone who does hang off. You can only make an assessment on what you can see visually. The difference with Voltin is it does detect things internally.

So with the thermal imaging, you might get further images, or you'll get evidence of problems beyond the surface of what you can see with the naked eye. So the big difference there is, ordinarily, you would never have discovered or found that by doing it the traditional way. And sometimes they're leaders towards something that is going to occur in the future, maybe in two to three years or something.

It might be evidence of something manifesting that could be corrosion in steel. It could be any. A variety of different things that it can pick up. There is just no way we would pick that up in the traditional form. It's not possible without some sort of exploratory work. Now, certainly, you know, we could look at jackhammering the side of the building to dig down to discover a problem that might be below the surface.

But the first question is, well, where do we do that? Why would we do it in an area? And then you've got all of the safety concerns and the logistical issues and all of that. So it eliminates all of that, and you're getting to the root cause far quicker. So you're straight to what the problem is, what the cause is. So when you get into that area of debate and laying, I guess, accountability in various parties, what went wrong?

Was it material or whatever it is, it's a much more substantial argument you can put together, and we find it's more reliable in that sense. So that's probably the main difference between the traditional and the new methods with technology is no longer would we put in a report something along the lines of, we assume there could be corrosion building behind that surface because of something. We can go in and put a more direct statement that we know from the evidence we've received from the vault. Information can see through the thermal imaging, something's developing. And it's just a far more compelling argument.

Amanda Farmer: And I imagine not even just at an expert report stage, but at the stage of scoping and quoting for work, because we very often see these provisional sums, variations down the track. We didn't know until we started the jackhammering that the concrete cancer was so significant. You're going to know all of that, as I understand it up front, if you've got your scan.

Bruce McKenzie: Absolutely. And look, one of the common problems in buildings we see this often, it could be, let's say a water leak around a sliding door window or something on somebody's balcony, or a problem somewhere where that might get fixed in isolation. So we might discover, yep, the termination's wrong, or the upturn, or there's something wrong with that. But the number one question I always ask is, is this systemic?

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Has a, for argument's sake, has a tradie, had a bad day and installed it wrong, or is it a design issue that's systemic right across, across the whole building? And should we be looking at this more broadly? Because doing an isolated fix in one spot is not really going to help the broader cause if there's problems everywhere. So things like that. I think using this kind of technology, you can very quickly start to determine trends throughout areas.

So you might focus on one thing in one area and say, okay, let's have a closer look at all the windows, zoom in closer from the imagery or whatever we've got and start to drill down on what that real issue is, because you did right when you are preparing scopes and things like that. I hate provisional sums. I know they're a necessity, but I do hate them because it doesn't help owners very much in terms of forecasting.

But this certainly would provide a big step forward in being able to forecast issues. And that would enable us to then apply some costs to some of those areas and say, for instance, it's highly likely that problem exists based on the evidence we've got. Therefore we would allow x amount to deal with.

Steve Thornton: If I could make two comments, Amanda. The key thing that we offer, it's only a tool that actually makes the diagnosis and the forecasting of the repairs more efficient.

I'll just use one example. Recently we had a high density residential complex, about ten levels and about 80 apartments. What the building manager used our system to do was do a full inspection of the building envelope, document fully what all of the observed defects were. He then used that document to create the scope of works for a complete repaint and refurbishment of the building. Now what he did was create an enormous value for his owners corporation, because for a start, he took the dreaded word of variation out of play with the guys that were quoting on the work.

Because as we all know, part of the remedial game is quite low. Allow a PC item or a provisional sum and then give a ballpark figure for what the repairs may cost. And that doesn't help anyone except the guy that's doing the repairs. So if you can actually take the guesswork out of what work needs to be done, particularly things like fixing waterproofing, fixing concrete delamination, or concrete cracking.

Because, you know, how long is a piece of string with some of that stuff, unless of course you've got all the detail. And that's where not just our system, but other systems that are out there. Once that you can actually catalogue and quantify, you actually take the guesswork out. And there is nothing better for someone to manage a project like Bruce when he's got an empirical evidence about what's there, so he can actually give a really accurate figure and methodology for how things should be fixed.

Amanda Farmer: Look, it all sounds fantastic and essential for our buildings, new and older, but I know because they've been around for a little while, that there are always challenges with adapting to adopting new technology. Are you getting pushback from buildings when say, Bruce, you're going in suggesting, hey, I think we should get Voltin involved. Let's do this. Full scan. Steven, are you hearing that from managers or committees you're approaching?

What are the challenges to stepping into this space and how we're dealing with those?

Bruce McKenzie: Look, I'll go first, Stephen, I know there's one experience I've got in particular, but firstly, selling this technology to the industry, as you point out, Amanda, it's not easy. You're trying to read up to an entire generation or an area where nobody's used to this kind of technology. And I do recall one instance of promoting that as a complimentary service to what we do.

And one of the questions, particularly when we outlined the amount of information and data and everything that's collected when the scan's done, is owners coming back saying look, we actually don't want all of that volume of information, we only want just the defects only. So, you know, revise it to just suit the defects only. And the thing people are not understanding really is when you do scanner building to scan all of that information, any defect on that facade comes complimentary with the report.

So whilst you might get a report that has 1000 paint chips and spider webs and bits and pieces on it, you've also got the majority defects as well. You can filter those out, you don't need to review every single piece of information. But the advantage of that is you have that information and that data that might lead towards making decisions on maintenance or other things later on. So it is still useful to have that.

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And I always say it's if no further or additional cost to collect that information, the machine does that anyway. Whereas if you compare that to going back to hanging someone off a building and looking and let's say they wanted to collect every paint chip, it would just be physically impossible to do, it would never happen. So I think there's some of the clear advantages. So the challenges for me, I guess, in promoting the service is educating the industry on the value it creates and the additional uses pass just that defect which is the problem.

And getting back to the very first question you asked me about the reactive versus the proactive approach, getting them to move past that point of just reacting and starting to look at the proactive approach which is analyzing that information, not necessarily today, it could be in twelve months or whenever they choose to dig deeper into that. But the main point is they've got it, they've got it in their hands and then they can use that as opposed to never knowing.

Steve Thornton: It's also fair to say, Amanda, that the average owner's corporation is set with information coming at them from all and advice from all different directions. Sometimes it's vested interest, sometimes it's uninformed interest. But it's rare that you actually walk into an owners corporation or a committee where you've got two or three professional engineers and a couple of builders and someone that actually has been in the commercial space that actually knows what's involved in contract management. So there is almost like an unwillingness to be born syndrome out there in strata world. Not because they don't understand, it's simply that the information can be overwhelming and they sometimes will struggle with the adoption of something new. And it depends who's giving advice. And you know from your personal experience that the advice that an owners corporation is given tends in some instances to be in conflict and in some instances where they really don't know how to absorb or react to it.

The reality is, is this is just going to be a slow burn or transition to the use of technology in all facets of the strata and property industries. It's not just what we're talking about today, it really is the fourth industrial revolution that we're going through. And unfortunately it's happening so quickly, it's very difficult for people to actually grasp what the changes are.

Amanda Farmer: Look, from my experience as a lawyer, trying to convince committees owners to arm themselves with more information about their building is a huge challenge.

Generally speaking, we've got buildings that don't want to get work, health and safety reports because they don't want those problems in the building to be identified because they're afraid of liability. We're now on notice of this. We have to fix it. It's going to cost money. I see that as a huge pushback. If we're doing this major scan, we're going to uncover things that we otherwise didn't know about.

And if we didn't know about them, we could keep our heads in the sand and not fix them. In my mind that comes back to this push, this need, I think, to be proactive rather than reactive, simply because, you know, tell me if I'm wrong. It's cheaper in the long run to be proactive. I've worked with so many buildings that have said to me, Amanda, I wish we did all of the balconies instead of just doing four of them.

And now if we'd done them six years ago before, the Design and Building Practitioners act in New South Wales would have cost us a quarter of the price. But we didn't know that they also had concrete cancer. It's so much cheaper to do the job properly when you've got everyone on site, you've paid all the preliminaries, you've got the insurance in place, just get it all done. And you can't do that unless you know what needs to be done.

Bruce McKenzie: I totally agree with you and I know prime examples of that where we've seen expenditure by an owners corp. to temporarily fix a roof area that you get this thing I refer to as duplication of costs, where the rework to pull that apart and to go again and to do it properly. They essentially paid to do it twice. Had they have known they may have paid 20% more back when they did it, that that extra 20% would have satisfied and fixed it properly.

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And, look, I think that comes back to the choices and getting experts involved at the right stage and proper investigational work done, not just looking on the surface. It could be a little bit of exploratory work where you pull something apart. It could be getting a proper scan like Voltin done, which then enables experts to have far more detailed information to then focus on areas that are showing up in that scan, rather than assuming where you think something might be wrong.

Amanda Farmer: Yep. Well, I am certain that we've sparked some interest in this text, even if we've got strata managers, committee members, owners who are wanting to find out more about Voltin and to have a chat to you about whether it's a good fit for their project or what they need investigated in their building. Where should they go?

Steve Thornton: First Port of call is always a website, www.Voltinworks.com.au
If they google us, they'll find us. And the beauty of the website is it will actually, on the homepage, it'll tell them everything they want to know, it'll show them what the process is and it'll give them an idea of what sort of output they will receive. There's a short explainer video that says, this is how it works. This is what you get as an owner.

Amanda Farmer: Excellent. And Bruce, those looking to connect with you and with Sedgwick, where should we head to?

Bruce McKenzie: Yeah, same, look, what I'll do is provide a link that you can share to our strata landing page. Sedgwick's quite a big organization, but we have an area that I lead, dedicated just to strata and remediation. So the landing page I'll send you, or the link to it, is very, very specific to the strata industry and all the different things we do in that industry and the solutions we can provide and that sort of thing. So I'll share that with you, but it is linked to Cedric, Australia and it's strata specific.

Amanda Farmer: Fantastic. We will make sure that we have all of those links and others that we've mentioned today in the show notes for this Episode. You can catch those over on the website yourstradaproperty.com.au. Just head over to our podcast page. Steve Thornton and Bruce McKenzie, thanks so much for joining me today.

Steve Thornton: Our pleasure.

Bruce McKenzie: Thank you.