Publication Date: 11 September 2025

YSP Podcast Transcript: 462 - Safe Spaces in the Storm: Preparing Strata Buildings for Cyclones

Listen to this podcast episode here.

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.

Amanda Farmer: Hello, and welcome to this week's podcast episode. I'm your host, strata lawyer Amanda Farmer and my guest this week is Geoff Boughton. Geoff is an Adjunct Associate Professor at the Cyclone Testing Station at James Cook University. He's worked for government, the private sector, and universities during his 45-year career as a structural engineer.

Geoff's engineering work is focused on improving the resilience of buildings to natural hazards. He's participated in the assessment of buildings following extreme wind events and in research to improve vulnerabilities in Australian buildings. Together with many other dedicated researchers over several decades, Geoff has contributed to changing codes and standards to improve the performance of buildings under wind actions. Geoff has worked on several projects that focus on strata buildings, including tools for evaluating the resilience of our strata buildings and guides for selecting a safe place to shelter.

Geoff is currently working with Standards Australia and governments in Pacific nations to draft wind loading standards for our neighbours in the region. Now, I first met Geoff at the Strata Impact Conference on the Gold Coast earlier this year, 2025, where he was a panelist on a session that I was moderating, explaining the impacts of Tropical Cyclone Alfred, which traveled further south than anyone had previously thought was possible for a tropical cyclone.

During the session, Geoff shared his expertise with the audience, explaining how more of our strata buildings than ever before need to be prepared for emergency weather events, especially severe wind and rain events brought by cyclones. In this chat, Geoff sets out some simple steps that you can take as owners and strata managers can be recommending to their buildings to ensure that we are living and investing in buildings that are as resilient as possible.

I'll take you over now to my chat with Geoff Boughton. Geoff Boughton, welcome to the show.

Geoff Boughton: It's a pleasure to be here. Amanda, great to see you again.

Amanda Farmer: Great to see you again as well. It was wonderful to meet you on the Gold Coast a couple of months ago, and thank you for taking up my invitation to go a little bit deeper on some of those ideas that we introduced to the audience at the Strata Impact Conference.

Geoff, at the Cyclone testing station, I know you've studied building performance after countless cyclones.

Geoff Boughton: What is the single most common weakness you see in apartment buildings in particular? Well, this will come as no surprise to you or any of your listeners. It's water getting in from the outside to the inside, and we often see it in even low wind events. Not a full-blown cyclone, but a weak Cyclone such as Cyclone Alfred, it caused a lot of water to come into buildings all over the Gold Coast and Southeast Queensland.

And water ingress from the outside to the inside can cause problems to linings in the building. Ceilings may collapse, walls may pop off, floors always get wet, and contents always gets wet. And it's traumatic for the people who live there as well.

Amanda Farmer: And is this a problem because of poor maintenance, or is it just a fact of a cyclone that you're going to get water ingress even if you've got a well-maintained building?

Geoff Boughton: It's a mixture of things. It's a mixture of features on the building and poor maintenance. Buildings are designed to keep water out, and often the water that they're designed to keep out is downward-falling water. We put an umbrella up over our heads when it starts raining, and that sheds the water away from us. But when you get wind and water happening together, it drives the water onto surfaces that the designers probably haven't thought about water hitting.

So that often roofs are designed to keep water out, and windows and walls have to keep water out. But it's very aggressive when you get a lot of wind behind it, so that it's coming horizontally at the side of the building, and the pressure can force the water through even the tiniest little gap in the building.

Amanda Farmer: Would I be right to say that different buildings in different parts of this country are constructed in different ways? So if we're in Far North Queensland, for example, where we might be more susceptible to this kind of weather and, you know, horizontal rain, our buildings might be constructed with that in mind. But as this weather starts to move further south, which is what we saw with Tropical Cyclone Alfred, our buildings just aren't prepared for it. Is that the case? Have we got different standards of construction around the country?

Geoff Boughton: Yes, we have, and Southeast Queensland is in an intermediate region, so that the design of buildings there is to a higher wind speed than it is in Sydney or Melbourne or Canberra, but not quite as high as it would be further up the coast in Rockhampton, Mackay, Townsville or Cairns.

Amanda Farmer: Geoff, you're developing some new guidelines around identifying safe spaces in buildings where residents might need to shelter in place during a cyclone. Can you share a bit about what that actually looks like, and feel free to share some more about your guidelines as well?

Geoff Boughton: Yes, absolutely, yes. The emergency services in each state offer suggestions as to where people should shelter, but it's generally geared around homes. So we've been looking at specifically strata buildings and different types of strata buildings, trying to find a set of guidelines that are going to be tailored to the specific character of strata buildings.

And the aim is so that if a tropical cyclone or a predictable, really high wind event arrives, people know what to do, where to go, and can remain safe in their building. This has got a couple of benefits. One, you know the building, you know your stuff, you're with all of your stuff in your building. But if we had to evacuate all of the folks out of strata buildings in any large town, it would choke up the roads and really impede the evacuation effort significantly.

So it makes a lot of sense for strata people to shelter in their building. And there are a couple of things that we're working on that are tailored to strata buildings. But we're only partway through the project. We've done a preliminary cut, so we've got a rough idea of what we're doing, looking for, and we're going to test it on a significant number of strata buildings next year and then refine it and then it'll become public. But I can give you a sneak preview if you'd like.

Amanda Farmer: Yes, let's do it. I'm interested in this. Where are the guidelines heading? What can we expect to see in them?

Geoff Boughton: Okay. The kind of thing that we're thinking about is a three-step process, so that your first choice would be a small room under a concrete slab with no windows on it. And a number of strata buildings do have internal bathrooms or laundries that would fit that requirement.

It's important to have an inward-opening door or a sliding door if the worst happens and windows break in the building, and stuff gets blown around inside your unit. We don't want to have things piling up outside the door that you're sheltering behind so that you can't open it. If it's an inward-opening door, you're always going to be able to open that door to get out after the event.

So that's your first option. And if you haven't got one of those, you're looking for maybe a slightly bigger room, a room with a really small window. It would be really great if that small window faced a courtyard or a closed-off area, so that debris is unlikely to hit that window. And if we can't find a room that answers that description, maybe a hallway that's got a door to rooms that have got windows.

But the worst thing, I guess, in a tropical cyclone is the potential for windows to break because with a whole lot of pressure behind the window, the windows are tending to bow in anyway. And when they break, if something hits it and causes it to break, they explode, and the glass just showers into the unit. And you certainly don't want to be standing in front of that when it happens.

Amanda Farmer: So hanging out in your lounge room watching TV, if you've still got power and sitting on the lamp, that's probably not a great place to be. We want to stay away from those windows.

Geoff Boughton: Absolutely. Yes.

Amanda Farmer: Great tips. All right, well be sure to keep me updated on those guidelines, and when they are available, it might be time for another chat, and we can help you get those out to the people who need to be aware of them.

Geoff Boughton: Yes, it'll probably be early next year when we finish that.

Amanda Farmer: Awesome. And I know you're preparing material for developers as well, specific to building some resilience into the design stage. So are there some simple, straightforward design decisions that can be made that make a big difference in how a building weathers a cyclone?

Geoff Boughton: Yes, and certainly at the commencement of the design is the right place to be making those kinds of decisions. So, even simple things like the shape of the building, the more complex the roof shape is, the more likely it is to channel water in under the edges of the roof. It's much easier to keep water out of a very simple roof space with many fewer flashings on the roof.

There's lots of advice we can give about where to put your backup power plants. From what we've seen, they've got to be accessible, they've got to be above water level somewhere where it's easy to refuel them. All of these kinds of very practical considerations aren't often thought about in those early stages. And they're put in a basement, and if flooding happens, then it's cooked. There are lots of areas like that we can assist in.

One of the things that we've seen recently is a big increase in the popularity of pedestal-mounted tiles or pavers on balconies.

Amanda Farmer: Yes, I've seen that too. That's a big one. Tell us about that.

Geoff Boughton: Yes, those pavers, even though they're 15-20kg each, can and do fly. In Cyclone Alfred, we saw a number of them starting to fly, and that was only at 100 kilometres per hour. That was an ex-tropical cyclone. So they are a potential liability. We've seen video footage of where they've smashed through glass balustrades or even broken windows into the unit themselves. Once they start flying around. In Cyclone Alfred, some of them did leave the building and impact buildings around it.

Amanda Farmer: Goodness. And let me say from my perspective as a strata lawyer, when I'm working with owners who are going through remedial works projects, they're getting their balconies redone. Some contractors, some engineers are recommending this method for balcony tiling because it's cheaper. And owners are going for it because they can take a significant sum off the contract price. I doubt anybody's thinking about what would happen in a cyclone.

Geoff Boughton: Well, they're not only cheaper, they're much more accessible, so that it gives a level surface that drains well through the cracks and gaps between the paving. So there are plenty of good reasons for using it. They just have to be tied down or glued down. And there are glues on the market that, if you glue them to the pedestal, that is going to mean that they're not going to fly around.

So, yes, they're a good idea, they're a cost-effective solution, but they have to actually be anchored. And people don't often think about the floor getting up and flying. But it is quite scary when it does happen.

Amanda Farmer: Now, we talked a little bit earlier, Geoff, about maintenance, and I asked you the question. When we have water ingress, is it because there's a maintenance problem? I mean, in my mind, there's a difference. Not just in my mind, in the strata law, there's a difference between maintenance and upgrades and buildings. Who might be listening and thinking, well, you know, we want to make our building as prepared as possible for these future weather events.

Is it just a question of making sure that we do proper maintenance? I mean, is that the best we can do? Or do we need to be looking at upgrades? And if so, is that an expensive process? What are your thoughts on that?

Geoff Boughton: Yes, there are some upgrades that are reasonably cost-effective, and often they're to do with guttering. So we do know, and a lot of people know, that box gutters, when they overflow, cause a lot of problems inside a building. So when a box gutter overflows, water has nowhere else to go other than into the building.

It's possible to put overflows on both ends of box gutters, and it's really interesting, actually. But when the wind is blowing, it can push water horizontally along a surface. So if the wind is blowing right along a box gutter, it can push all of the water in the box gutter up to the end that doesn't have the rain head on it. So then any more water that comes into the box gutter will overflow at the other end.

It's a really simple solution to put overflows at both ends of the box gutter. And that way, regardless of the direction the wind is blowing, it will overflow away from the building and not into the building. So that's a really simple one. But there are maintenance issues as well. In Cyclone Alfred, we saw a lot of water actually coming through walls. So the walls themselves were letting water into the inside of the building.

It would run down the inside of the building onto the floor and then saturate the carpet and everything else that was on the carpet. So, in those circumstances, and a lot of those buildings had rendered concrete walls that rely on the paint to keep the water out. So part of the waterproofing system is an acrylic paint on the outside of the building, and if that starts to oxidise, it loses its water repellency and water can get through it.

In many of the cases that we saw, the painting should have been done five or so years ago to keep it up to scratch. But people need to recognise that paint is more than just a cosmetic finish for the building. It's actually part of the waterproofing for the walls. If it's allowed to break down, then that lets water in. And we saw that on a lot of buildings in southeast Queensland after Cyclone Alfred.

Amanda Farmer: Now, you have a Strata Inspection Program, as I understand it, Geoff, where owners who want to understand the resilience of their property can get a rating and have some idea of where they're doing well and where they can improve. Can you tell us a little bit about that?

Geoff Boughton: Yes. So this is a program that is administered by the Queensland government on behalf of the Commonwealth. It was brought in in 2019 for strata buildings in the cyclone areas. And the aim was to improve the resilience or to make owners aware of how they needed to improve the resilience of their building. And if your building was already resilient, you got a reasonable score, could take that to your insurer, and the insurer would say, “Yes, that's good. We'll take that into account when we next assess your insurance premium.”

Amanda Farmer: Nice.

Geoff Boughton: On the other hand, if there were some areas that were a bit vulnerable in the building, they became aware of those areas, and there was advice or recommendations made in the report that indicated these are the things you could do to improve your resilience. So things like putting overflows in gutters, or if their roof screws were not in good condition and started to corrode. It would be 'replace your roofing screws.'

In some cases, if the building was really out of date and no longer complied with the building code, it might be 'you need to have a structural upgrade to your roof system to keep it on there.' Other things that often pop up are additions that are placed on the building. Someone's put an extra pergola or a patio on the roof, and it's not that well hooked into the building and could become lethal for other occupants of that building or a different building.

So those are the kind of things that we would recommend, as well as the general ones, like trimming trees that overhang parts of your building or having a cyclone preparation plan that's appropriate for a strata building. And that would include removing everything from your balconies, because anything that's left on the balcony could be picked up by the wind and thrown against your unit or through the balustrade to another unit or another building. And that includes on units that are vacant.

So it could be that someone's away on holidays who does that, who prepares their unit, and of course, the common ground shade sails around the swimming pool and things like that.

Amanda Farmer: Now, is the Strata Inspection Program only open to buildings that are in Queensland, or is it wider than that?

Geoff Boughton: At the moment, it's only open to buildings in Queensland, and it's still a free service that has been funded, but we're about to run out of money for that program. It'll probably run out of money in November or December this year, and we're looking to extend that program to make it available to more people.

Amanda Farmer: Now, I imagine if those who are listening who are interested, go and check out the webpage that you've shared with me, and I will share that link in the show notes for this episode, they can go and have a look at what the Strata Inspection Program is all about. Looking at it now, it looks like it's fully subscribed for the funding that you have available, but you are running a wait list.

So it may be that people can join the waitlist, and then we're sending a message to government that there's a lot of people who are interested in this, would love to have this inspection done and get some more funding for you.

Geoff Boughton: Yes. And even if there are people that are not in Queensland who see a value in it, it would be great to know that there's interest out there for a program elsewhere as well.

Amanda Farmer: Yes. Sounds like an excellent idea. All right, so that link to have a look at the Strata Inspection Program and jump on the wait list is in our show notes. Do you think, Geoff, that regular resilience inspections should become a legal requirement for strata buildings, the same way that they must have annual fire safety checks?

Geoff Boughton: This is just a personal opinion. But I think knowing the resilience of your property is absolutely vital to inform you as to one, behave if something is going to be coming your way, so that you're prepared for it, you know what the resilience of your building is, and you can make a wise decision in terms of a financial decision as well.

I think resilience is something that is undervalued by people, certainly before an event, but whenever we investigate an event and afterwards, people say, "I wished I'd spent just a little bit more to mean that I actually have a livable building right now." So, it's easy to be wise in hindsight, and we talk with those people often enough to hear that story very, very regularly. But the more we know about the resilience of our building, the better prepared we are to be able to tackle whatever the future throws at us.

Amanda Farmer: Indeed, for a strata committee member who might be listening to this podcast who thinks, “Oh, I'm not sure that our building's all that resilient.” Have you got one quick action step that they can take this week, Geoff, to make their building more cyclone resilient?

Geoff Boughton: Oh, you're going to restrict me to one?

Amanda Farmer: You got more? Hit me, but give me your top one for those who've only got time for one.

Geoff Boughton: Okay. And again, it's the things that keep water out of your building. So make sure all of your flashings are in good condition on the roof, that the roofing drains well, that all of your gutters are clear and have good overflows on them. That's my number one.

Amanda Farmer: Great.

Geoff Boughton: And the good thing about that is it will help you whenever the rain is falling really hard. It doesn't need to be a cyclone. It can just be a really, really rainy day with a little bit of wind behind it. And a lot of buildings do leak under those circumstances. So that'll help with that one.

Amanda Farmer: If you want to give me more, you're welcome.

Geoff Boughton: Okay. Yes. Well, the balcony tiles.

Amanda Farmer: Balcony tiles, yes.

Geoff Boughton: You're a building that's got balcony tiles. Arrange to have them stuck down. They'll still work just as well, but they won't fly. And it does sound strange that they do fly, but by crikey, they're really bad bits of wind-borne debris once they get loose and over time, if you can, and it's not an urgent thing, but replace carpet with tiles.

Amanda Farmer: Okay?

Geoff Boughton: Because then if water does come in, it's simply a case of mopping it up. If there is carpet on the floor, then that carpet wicks up the water and holds onto it, encouraging mold growth. It smells. Yes. And it's really hard to get it out of your unit after that. But..

Amanda Farmer: And in common areas as well. In our lot of our older buildings still have carpet in common areas. Good idea to upgrade to tiles.

Geoff Boughton: Absolutely. Yes. And carpet needs replacing from time to time. So that's why I say, over time, whenever you have to replace carpet, think really seriously about replacing it with tiles because they're much more resilient.

Amanda Farmer: Love it. Well, thank you so much, Geoff, for joining us to share those insights, and we'll make sure that the resources that you have shared with us we linked to our Show Notes. When you've got those guidelines up and running, let me know, and we will add those in. If not, have another chat. I just feel like these are conversations that we need to be having in strata and continue to have probably more often as we see our climate changing around us.

Geoff Boughton: And I guess as a closure, it would be really wonderful is at the design stage we could check the resilience of buildings because it's so much easier and more cost-effective to incorporate those features at the design stage. And wouldn't it be great if every single building that was let out for the first time could say, “This is a resilient building.”

Amanda Farmer: Yes. I look forward to that future. Thanks so much for joining me, Geoff Boughton. Thank you.

Geoff Boughton: Thank you. Bye. Amanda.

Outro: Thank you for listening to Your Strata Property, the podcast which consistently delivers to property owners reliable and accurate information about their strata property. You can access all the information below this episode via the show notes at **yourstrataproperty.com.au.**