

Publication Date: 30 April 2019
YSP Podcast Transcript: Episode 160. Why 70% of new apartment builds will have defects and what to do about it

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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. To access previous episodes and useful strata tips, go to www.yourstrataproperty.com.au.

Amanda Farmer: Hello, and welcome. I'm Amanda Farmer, and this is Your Strata Property.

This week, I am bringing you an interview that is a little different to our usual, and that's because it is not an interview conducted by me. I'm bringing you an interview by Veronica Morgan and Chris Bates for their property podcast, which is called The Elephant In The Room.

Now, there's a very important reason why I have decided to bring you an interview from another podcast. Veronica and Chris, in this episode, are talking to 2 experts, John Roydhouse, the CEO of the New South Wales branch of the Institute of Public Works Engineering Australasia, and Jonathan Russell, National Manager of Public Affairs at Engineers Australia. Now they are asking and answering a number of important questions, including these: Is the build quality and safety of newly constructed residential properties up to scratch? Why is the financial well being of the owners of new apartments in particular at risk? What's the downside of an infrastructure and building boom coupled with hurried design approval, construction, and compliance processes?

They cover off the fact that 7 out of 10 new residential buildings have defects and they talk about how the Opal Tower and Lacrosse tower disasters or the London Grenfell Tower tragedy might have been prevented. Now this information is absolutely vital for us as apartment owners and those servicing the strata sector, and when I listened to this interview myself last week I decided there was no better way to bring this information to you all quickly and effectively than to deliver you Veronica and Chris' interview with Jonathan and John as is, and I'm very grateful to say I have the agreement of everyone involved in that broadcast to be able to bring it to you here on the Your Strata Property podcast.

Now, Veronica Morgan is a real estate agent, a buyer's agent, and the co-host of Foxtel's Location Location Location Australia. She is also a previous guest here on our podcast and for more from Veronica, check out our episodes 055 and 115. And Chris Bates is a financial planner, mortgage broker, and wealth coach.

Veronica and Chris joined forces and produce The Elephant In The Room Property Podcast, which they say finds out what's really going on in the world of real estate. Each week they get into the psyche of buyers, agents, auctioneers, and other industry experts to learn the truth about how buyers are influenced and why they do the things that they do, with the aim of helping us all make better property decisions.

Now, both Reena Van Aalst and I have been previous guests on The Elephant in the Room Property podcast, and you can check out Episodes 132 and 135 where you'll be able to listen to those interviews, an inside look into each of our experiences as a strata lawyer and a strata manager. But in this episode that I am about to bring to you, Veronica and Chris are addressing some pretty big elephants in the room.

One of those is that in New South Wales, anyone can call themselves an engineer, no qualifications required. Some pretty scary stuff. Now this episode is a little longer than our usual. Veronica and Chris' podcasts generally run closer to the one hour mark, but every minute of this episode holds immense value. You might even want to listen to it a couple of times.

If you want to hear more from Veronica and Chris and their property podcast, you can check it out over at www.theelephantintheroom.com.au, and I am indeed very grateful to them for allowing us to bring this vital information to you here on Your Strata Property.

So let's head over now to Veronica Morgan and Chris Bates interviewing John Roydhouse and Jonathan Russell. Enjoy.



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Veronica Morgan: In this episode, we're going to address one of the biggest elephants in the room so far in this podcast, and it relates to the safety build quality, the financial well being of apartment owners and the potential for devastating tragedy if nothing is done about it. Bet that's got your ears pricked up.

This is something that I didn't know until recently, that in Australia, engineers don't have to be registered. In fact, pretty much anyone can call themselves an engineer. Now how this plays out is that when we have an infrastructure and a building boom coupled with hurried design, approval, construction, and compliance processes, people working in the sector may not actually be qualified to do the work. Now, we only have to mention Opal Tower let alone Grenfell Tower or Lacrosse tower to start imagining the consequences.

Now, today joining us.... 2 people, so we've got a few more voices in today's podcast. First of all, we have a farmer who's in Sydney talking about engineering.

Welcome, John Roydhouse. Would you like to introduce yourself?

John Roydhouse: Good morning, Veronica and Chris. Yes, I'm John Roydhouse, and I am the CEO of the Institute of Public Works Engineering Australasia, New South Wales Division, and that is a mouthful. IPWEA for short is how we like to refer ourselves. We're a professional membership organisation looking after the interest of Public Works Engineering, so it's all of the public infrastructure around New South Wales. That's primarily local government, but also gets into the private consultancy and state government doing everything outside the actual building of the residential towers that you've already referred to in the Opal Tower. So the water going in, the foot paths, the roads, all the transport, and the waste coming out.

Veronica Morgan: Which is something we all forget really needs to be attached to the buildings we live in in order to make it comfortable to live in. And our other guest is Jonathan Russell, who works with Engineers Australia, the peak body for engineering profession. Right?

Jonathan Russel: That's right.

Veronica Morgan: Would you like to introduce yourself?

Jonathan Russel: Yes, thanks Veronica. Thanks, Chris. Sorry, my name's Jonathan Russell. I work for Engineers Australia. It's a professional association. It is related to the Institute of Public Works Engineering Australasia, in the sense that we cover engineers as well, but we cover the full breadth of engineers and engineering practice in Australia. So that includes public works activities as well as civil construction, but also electrical, defense engineering, biomedical engineering, the full gamut.

Veronica Morgan: Now, all of this does impact every one of us every single day. Now, obviously for the purpose of this podcast, we're going to focus on the residential construction side of things, but the implications of the sorts of things that you're going to reveal to us today are widespread. So we don't want to limit it totally to residential and narrow down the conversation if we should be talking about bigger picture stuff. So let's get stuck into this chat. I'm looking forward to it.

Chris Bates: Thank you John and Jonathan. It's brilliant to have you both here actually because with construction, we always like to blame someone or we always like to blame the builder or blame the council etc., and you 2 are complementing.... I guess the two important parts is the actual building and also, the infrastructure around that building which makes it all worthwhile.

I guess I'm a bit flabbergasted round the engineers and what it takes to actually call yourself an engineer and I guess the dangers in not having rules around that. Can you explain what do you need... have to call yourself and engineer?

Jonathan Russel: In New South Wales, I believe that's where most of your listeners are-

Chris Bates: Yes.



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Jonathan Russel: It's frighteningly small. You don't have to prove anything. Anyone can call themselves an engineer in New South Wales, and that includes with the apartment towers, all the civil construction. You introduced at the beginning Veronica that engineers don't need to be registered anywhere in Australia. Now there are shades of grey around the country.

Queensland has a great system, we think. Since 1930, to provide engineering services, you do have to be registered. You do have to actually pass a degree, have experience and demonstrate that you're a fit and proper person. In Victoria, where I understand a lot of your listeners are as well, in the residential construction arena, there are some categories of engineer which need to be registered, but then you move North, across the Murray River to New South Wales, and legally anyone can get involved. So what we're calling for is that just doesn't make sense. I mean, we're going to talk about a Dumbo later, I think that's a fairly big Dumbo.

Veronica Morgan: That is a Dumbo, yes.

Chris Bates: And I guess, where does an engineer kind of ... because I do a lot of work with ... a lot of my clients are actually working construction, and I kind of understand the process and etc., but ... where does engineers mainly come into the construction process and where do the problems start?

Jonathan Russel: So there are engineers involved in ... Engineers are involved in pretty much everything, all parts of life. In this studio, a sound studio for example, there will be engineers involved in making the microphones work. In a building, it's much more obvious, because engineers design and then build, construct the building.

But a building is also like a system. You don't just have a structural engineer doing the drawings for how to make it go up vertically, you've also got fire safety engineers to make sure that the cladding is safe, and that's another big topic that's been going around for a few years now, that the fire escapes are all work from an engineering and a human sort of social science point of view, as well. You've got the waste, that John mentioned before, that needs to come out of the building, mechanical services engineers, the air conditioning, the refrigeration engineers.

So there's ... An engineer is going to be involved in designing pretty much all of the building, and then once the design is made, there are engineers involved in actually following the designs, and then constructing it, putting it up and ... so they are the two main ways that I think it's easier to conceive what engineers do in the residential arena.

Chris Bates: And on the end of that, is there engineers who are signing off on it or is that a separate role?

Jonathan Russel: Okay, so, from a... so in Queensland, if you're going to be providing engineering services and you're going to be signing off on the work then you're going to need to be registered. In New South Wales, there are still going to be signing off on the work. It's like any other company would have a risk management process in place. Though the big design consultancy will have senior engineers supervising more junior engineers and signing off on their work. And then there will be people at construction site who are supervising the work. The gap in the system in New South Wales is that there's no system for quality control, and where issues are identified, there's no mechanism to deal with an individual who's not up to his task, and providing sanctions to either re-educate or remove them from the system entirely. Unlike a medical doctor, someone makes a complaint and you realise that they're not competent, so they shouldn't be practicing as a doctor. They're removed from the system. They can't do it anymore.

With engineering, it would be possible for someone who was dodgy enough to keep on moving through the system.

I guess the key point is you can look at an engineering function and there's a pure engineer and then there's the technician and we do need to separate those. And a lot of the functions are being done by a technician, not by an engineer. What an engineer has to do is, they have to do the design, they have to do it to certain standards. In fact, the engineers write the standards, and that's one of the key things, and in doing that they're assessing risk all the time.

John Roydhouse: And that's part of their professional standing, is to assess the risk. What is the satisfactory level of risk in doing that, and if I design it in such and such way, what's actually going to happen? That is the big distinction that we're seeing, is there's

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a lot of people who've got the technical expertise but they're not qualified to do the actual function.

Chris Bates: So when you say the technician, what do you mean by that?

John Roydhouse: A technician can be everyone from a construction worker to a para-professional, someone learning the trade. They're certainly not qualified to sign off, but they're actually out there doing the job and that's the problem we see in New South Wales a lot, whether it's in private construction or in public infrastructure.

Chris Bates: So the design's good, but then potentially the build and the sign-off isn't happening by the engineers, it's happening by technicians and they're not really double-checking what the engineer tried to achieve in the first place.

John Roydhouse: You do have that risk. It was really interesting ... I ran a development engineering forum last October in Sydney, and that was local government engineers who are involved with the development application process, in doing the assessments, everything for local councils. It was private certifiers, who in New South Wales do have to be qualified to sign off on private construction, and property developers and some large property developers. All wanted to do the right thing, but all were looking back towards the engineers who actually write those standards and then the private certifiers were saying "We can then do our job if we know what those consistent, concise standards are."

Property developers want to do the right thing, but again, they are looking for standards to be set.

Veronica Morgan: Now I know it's going to be really difficult for you guys to comment on Opal Tower, because there is a massive investigation going on, and of course it might take years to work out really what the root of the cause was, and I'm sure it was not one thing as well, I'm sure it was a complicated web of things, but in a general sense, how can that sort of thing go wrong? How can that happen?

Jonathan Russel: The final report into the Opal Tower incident came out in February, so just a few weeks ago, and they found ... what it seemed to them, to the investigators, happened is that there was ... the building was designed but then the, as built building wasn't to the high enough spec and so, as you say, they're still trying to unpick what really went wrong, but it appears that the design may have been right but then the way it was constructed wasn't to the exact design.

This is what John was saying. You had people didn't perhaps even understand the design fully to be able to actually apply it.

Now, there were 3 main recommendations that came out of the Opal Tower report. They're not new recommendations. I'm going to point that out.

Veronica Morgan: I'm sure they're not.

Jonathan Russel: And the report author said that if these 3 recommendations had already been in place, then the chances of Opal Tower happening would have been much much reduced, if not eliminated.

The first one was to register engineers, so that you can identify someone who is competent and there's a higher - there's an axis of risk management framework, it encourages people to maintain their continuing professional development, and they're obviously going to have to be experienced. Until you're at a certain level of experience, you can't be registered.

The second thing was to have all the designs checked by an independent third party. Big design houses probably do this in-house, like they get a different team to do a third party review, but the report's suggesting that independent third party reviews would provide an extra level of rigor. So you get a completely disinterested party, if you like, to check it off.

The third thing was to have more and more formal stages of inspections so that when it comes time to pour the slab, you have someone who understands the design come over and watch and check that this is how we actually wanted ... this is how we

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intended it to be poured and then when they're putting the building up, at certain stages, checking that this is actually being constructed in the way that was intended therefore is going to be safe.

John Roydhouse: The 3 things coming out of that final report was number 1 the registration of engineers, that's been very clear and it's come through several reports over many years that we need to introduce that in the state of New South Wales.

Queensland's had it since 2002 by legislation, and Victoria did introduce the legislation in 2018. It went through the Lower House, got through 2 reading speeches of the Upper House, and their state election got in the road so it didn't get to the final reading speech. I do understand the Victorian treasurer, who introduced the original legislation, has made the commitment to reintroduce it into this term of parliament. Hopefully we will see it in Victoria. New South Wales is dragging the chain.

John Roydhouse: The second part is, as Jonathan was just saying, is the technicians that I referred to that are doing the work, the pouring the concrete and things, having someone on site who actually understand it and be able to read the plans and understand and again, actually train them up to actually be the next generation of engineers so, actually instilling professional development and training into those people as well is really important.

Chris Bates: And I guess the ... one of the recommendations you said there is getting an independent party to look over the plans. There's a cost to that, and there's another additional cost to the cost of the apartment, and a builder's not going to want to pay that and that means they're going to have to sell it for money and I guess there's a lot of people who won't want that and the independent review of these professionals, if you're in a construction boom ... construction salaries have already gone up a ridiculous amount in this boom, and that's for everyone who's in the construction industry. How do you, with building this amount of apartments, is there actually enough talent that is actually certified to actually go around, basically?

Jonathan Russel: When it comes to engineers, I'd say, yes, there is. There is enough talent. There are about 330,000 engineers in the labour force at the moment. Now not all of those are in the residential construction area, but construction across the broader range of disciplines is the third largest employer for engineers. So there are an awful lot of them out there, and then to ... Whether there's a cost/benefit analysis that needs to be done, so Opal Tower, it would have cost more to go slower and have more checks and make sure the person building it could actually do it to the design, but the benefit of ... and each way, one of the costs is you don't have an evacuation, you don't have a building that's going to have a question mark over it for the rest of its term.

Veronica Morgan: Well that's the thing, isn't it, because one of the constant themes through this podcast is this idea of people who are chasing short-term gains, they're not thinking about the long term. This is an absolute classic example of that, where you don't want to pay too much for your apartment but, oh hell, those ... there's been certain figures bandied around around the values of those now, and to say they've dropped in value by 75-80%. Even then you say who would buy one even at 80% discount.

Jonathan Russel: Well, no bank would lend on it.

Veronica Morgan: Well there's a whole, you know, yes.

Chris Bates: So you can't buy unless you got all cash.

John Roydhouse: I may be showing my age but when I went to school, I was taught you do things right the first time. And I think that's really important and there are that floating around that when the new buildings, that 7 out of 10 have defects at the time of purchase. That's not acceptable and that's adding to the cost long-term for anyone that wants to buy into residential real estate. If they're not buying something that's up to the specification or standard when they're purchasing it, and then has to come and rectify, it's a lot more expensive to rectify it after something's been built than getting it right the first time. I hate to be political, but we're seeing that with the Sydney stadiums at the moment and the debate around those, which will be decided at the election ... state election coming up, obviously. But they didn't get it right the first time.

Chris Bates: That's the problem really. We're building housing stock to sell, and the biggest way to sell it is to make it cheap and

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because when you're ... you know, it's not an investor, mainly investor-buyers these apartments, not really home buyers, and investors go around, they shop the market and they'll go to 3 or 4 and one bed's \$445,000 at this place and it's \$480,000 at the other one or \$520,000 at the other one, well maybe the 520 one is the best building, but the investor says, "It should be good enough, I'll just go for the \$445,000 one. It's nearby, I'll get the same rent." And so what we do is we self-fulfill, and basically buy the cheap building and that's kind of the problem here, as the developer isn't incentivised to make a better product because the consumer won't pay it.

Jonathan Russel: I think, so I mentioned that those recommendations weren't new from the Opal Tower. So, a year and a bit ago the Council of Australian Governments Building Ministers' Forum had a report delivered to it that it commissioned. For your listeners, the Council of Australian Governments is a forum of the Prime Minister and the Premier of every state and territory, who get together to talk about big cross-jurisdictional policy issues. Building Ministers' Forum is a subset of that, where it's the Minister of each of those jurisdictions' who is responsible for buildings, and so the BMF commissioned an investigation into the building and construction sector, the regulation of it and the enforcement of those regulations. And so a year ago, recommendation one was register engineers, and amongst the other 24 recommendations was one to have these more stages of inspection, or more standardised and more tightly enforced stages of inspection. So exactly the same as the Opal Tower recommendations.

So, you're right, there may be less incentive for developers to, although with the stages of inspection, and I'm not saying that when we talk to, say, the Property Council, they're totally on board with us about what needs to change. I wouldn't want your listeners to think I'm saying all the developers are avoiding their responsibilities, but if the Government introduce this as a rule, it kind of takes the choice away from any developer that doesn't want to.

Veronica Morgan: Levels the playing field, I mean and I think that's the issue isn't it? It does have to come top-down in this case because consumers clearly aren't going to demand it.

Jonathan Russel: They're uninformed consumers.

Veronica Morgan: They are uninformed.

Jonathan Russel: How could they possibly know if the building's been put up properly.

Veronica Morgan: They can't, and you say, John, thereabouts, some stats around about 7 out of 10 new buildings have defects and certainly I've been talking to a lot of people over the years and we've interviewed people in the strata sector here as well and talking about very similar things and that, people buy brand new not expecting it to have major problems and yet the proportion of major problems in new is much higher than it is in existing buildings. So they seem to think that age causes problems, not actual building itself, or the structure of the building. So that's a really important message that needs to get out there, but it's not sexy, where as glossy brochures are.

John Roydhouse: It isn't sexy. Property developers, I think, in the main, do want to do the right thing, but they have to meet market expectations, so they're looking at how do we do that because we've got to make housing affordable, we want to attract investment, so how do we do that and unfortunately, we don't always see standards being maintained.

Chris Bates: And I guess the developer game is high-risk. If you're a developer, you're not ... this isn't just I'll run a shop and I'll just have the customers every day. You've got to put a lot of money in, you've got a lot of time to market and if it goes wrong you lose a lot of money, and unfortunately when they start to get problems with buildings, sometimes the builder and the developer are separate as well, and you start getting to a point where there are problems and it's like, "We've just got to get this finished." And Opal is one example that's come out, but do you believe that there's a lot more Opal Towers out there that haven't come out because, end of the day, if you live in that building and you see defects, the last thing you want if you own that building, is that to get on the strata report and that to become public knowledge. And so do you think that a lot of stuff is kind of hidden away in these buildings that people don't want to discuss?

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Jonathan Russel: They may not all be as dramatic as a loud bang on Christmas Eve and being kicked out of the building, but there are a lot of buildings that have various issues. In the ACT, the government there is in the middle of, although the Legislative Assembly is in the middle of doing an inquiry into the construction sector in the ACT. Engineers Australia put in one submission. There will be plenty of others, and what some of our members are saying is that residential construction in the ACT in the past 10 years has led to an awful lot of substandard buildings. Nothing's going bang in the middle of the night, but there are plenty that have got, or they're getting, leaky or they're getting mold issues, or they're ... just niggly little things go wrong, which actually make them, if not uninhabitable, then of far less value than you thought they were when you forked out half a million dollars.

Jonathan Russel: The same members say that there are good developers and builders in the ACT as well, but it goes to this idea of having registration is also about trust and confidence. So if you're entering a market which you think is overheated, everyone's working too fast, the checks aren't being done, that's going to lower the potential value of the apartments because the general consumer base is going to be less confident that this is actually a good investment for me, maybe I will look at snapping up a building from 1930, that all the issues have been shaken out of that one. You just do a little reno job, maybe that's a better option.

These are the things that I think any builder, engineer, developer, or anyone else who's thinking about maybe cutting a corner or going to fast needs to think about. It's about trust and confidence in the market.

Veronica Morgan: I think one of the issues with, because it's quite complex, the fact is we see a lot of developers building stock that we call investor stock. What that means is that they've just carved up their air space into the maximum amount of apartments that they can have and the maximum amount of profit, and look, hats off, at the end of the day they're in business to make money. I'm not here to say that they shouldn't do that, however, they're building stock that appeals to investors, not necessarily to even tenants, let alone owner-occupiers. It's a very short-term view, and the person carrying the can for that really is the idiot investor, the unsophisticated investor who does buy that property. Now, that's, in a sense they've made various decisions based on whatever information they've based their decisions on, but the thing is that the developer has built to a market.

A lot of people come to us and say, "But they wouldn't build it if there wasn't a market for it." I'm like, "Yes, but this is chicken and egg." You've created that market because you've marketed it to those would-be investors to tell them it's a good investment. They've believed you and they've bought it, then they've found out it wasn't such a great investment but it's too late. And a little bit the same with this case, where you've got builders or developers that are, they're not incentivised to make sure that the long-term investment is a good one because they offload it and then there's the statutory period that they've got responsibility towards that building and then once that's gone, whatever, they're on to the next project. So the person that really ends up carrying the can for all these decisions is the buyer.

John Roydhouse: It is not just the buyer. There's actually local and state government get involved as well.

Veronica Morgan: Okay.

John Roydhouse: And that's just surrounding infrastructure. And yes, developers pay a Section 94 contribution to help the ongoing maintenance of the supporting infrastructure for these developments but at the end of the day the developer's gone. He's taken his investment, gone on to the next project, and 20 years later the road has to be replaced or it has to be resurfaced, there needs to be sporting grounds put in, there needs to be changes to those sporting facilities, a library needs to be built, public transport has to be built. It's the local and state government actually also has to support.

We've seen a situation, a decade ago I suppose now, of the collapsing sea walls and frontage up on the-

Veronica Morgan: Narrabeen.

John Roydhouse: What was it, Narrabeen.

Veronica Morgan: Collaroy.

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John Roydhouse: Collaroy. And councils had to go and fund that.

Veronica Morgan: Good point. Interesting.

John Roydhouse: So it's not just new buildings, it's happening all the time. So it's coming back to the planning stages and that's why local councils are so important in having that conversation about planning the future use in these developments.

Veronica Morgan: Which is a good point you just raised there, because of course in New South Wales - I'm not sure about other states - you've got a situation where the state government's overriding local government. So what, talk more about that.

John Roydhouse: At some point, communities need to have ownership and have conversations about the future shape of their communities and what they want it to look like. And unfortunately, the state government has come in and has played a heavy hand, but I think the tide is turning back because at the end of the day it is local residents who have to pay for that community infrastructure. So they do need to have a say in what it looks like and what their future environment looks like.

Chris Bates: But what local people would say is it's nimby mentality, and what people understand is, what makes their suburb likable and livable and why people want to live there is because of the way it is currently today. What people will want to do in the future is not change a single thing, and what that does do is ... You ask anyone involved, Vaucluse or Mosman or go around Sydney, they don't want any more infrastructure, they don't want any more development.

Veronica Morgan: That's a little different there because, they're both in the CBD already and well serviced and they're pretty much constrained in terms of available land and all the rest of it. But you're probably talking areas where there's more scope for a lot more residents, like where you've got a redevelopment of industrial sites, for argument's sake, or re-zoning's happening. I would think-

Jonathan Russel: Or knocking down old buildings, I think, like you mentioned nice suburbs. I live in a nice suburb and I like it the way it is.

Veronica Morgan: That's good. [crosstalk 00:30:41].

Jonathan Russel: But I look at older houses and go, "It's not going to be long before that one's gone," and sure enough, off it goes, and then you notice that the one next door's obviously been bought because the grass is growing long and it's next. And up goes a development.

Veronica Morgan: But that's a rezoning too though, isn't it. And how much of that is local versus state? I guess that's the thing, isn't it, because-

Jonathan Russel: On that sort of microlevel I would think it would be the local government. But then there's-

John Roydhouse: It is very much local government and I'll just go back and I'll challenge you, Chris, because coming to this podcast this morning I've come from Dubbo via Tamworth, which sound a little bit crazy and there's a whole long story, but it's a whole different world out there. And I have 4 children, and 3 out of the 4 actually live and have invested in regional New South Wales because it is so much more affordable to live out there. I personally have bought real estate on the north coast of New South Wales and that's my retirement dream and that's where I'll be going to get away from some of these problems. So there are other options out there, and it's going out regional areas.

Chris Bates: Yes, I mean, obviously there's more land there, but there's not really an affordability problem there. Where this is. Why people are buying apartments and living in apartments is they can't afford the house. And what we need to do is create more livable housing, but you ask the communities in those areas, they don't want to change anything so it's kind of like what ends up happening is all the apartments basically go to councils where they're willing to build them and then you start getting the

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infrastructure problems which you're seeing. We basically just start pushing all these buildings into, generally speaking, it's the outer suburbs and the outer councils, because they get through council a lot easier and the councils want the rates a lot more.

Veronica Morgan: Is he a slightly conspiracy theorist?

John Roydhouse: I'm sure I was out in a western metropolitan council a couple of weeks ago and had a long conversation with the engineers out there. And they're part of the north-west coast corridor and they're basically building 70,000 new residences. Huge. 200,000 people they're catering for in one local government area, and they've got the challenges or providing supporting infrastructure to that, so the sporting fields, just the road network to support that. And they've already got a couple of hundred thousand residents, they've got some older, aging infrastructure and they're saying why is all the money being spent on developing this new infrastructure versus maintaining the existing infrastructure. Real challenge for our engineers.

Chris Bates: And on that point there is, what are the ... if you go and build 6 towers, what's ... How do you do the sewerage system?

John Roydhouse: You have a very big one.

Chris Bates: But the cost to do so and then what does that mean for all the other residents? And then, do you know what I mean? We just build the towers and think, well, what about the electricity? What about the roads and-

Jonathan Russel: Sorry, It's good that we've moved on from just talking about one building to the system, like the social system around it. At Engineers Australia, we're constantly encouraging government to involve the engineers in the decision-making process. There need to be economists, lawyers, social scientists and all the rest of it as well, but what we find is that often the engineering questions like, "What do we do about the sewer?" Is coming way ... long time after the decision is being made to put up the 6 blocks in the first place. And this is not ... this is for big decisions like: "Do we put an airport?" "Where do we put the airport or do we put a new railway line in?" Down to, "We need to densify our corridor around our new light rail, we need to plan for this 20 years in advance and what are the engineering solutions that could be done and some of the engineering issues that might come up that we need to resolve."

And what we think is that there's not enough level of engagement with people who understand the technical ramifications and the technical possibilities. Because if there ... to sort of explain what I mean by that, if we're trying to get more people from A to B, oftentimes we're, "Oh, we just need a new freeway," but before that, let's be like, okay, the objective is getting people from A to B, what is the most efficient way to do that? Do we actually just rephase the lights, or do we put in a heavy or light rail, or car, or maybe it is just a new road, who knows? But you need to ask the question about how do we achieve the objective, not which road should we put in.

Veronica Morgan: I love it.

Jonathan Russel: And so-

Veronica Morgan: But that's not popular. That's not headline generating is it?

Jonathan Russel: No, it's not, and so we've-

John Roydhouse: It isn't headline, but what it actually is is actually building communities.

Veronica Morgan: It's beautiful, I love it, but it's ... unfortunately our governments are so short-term, we're worried about property buyers being short term in their thinking, our governments are maximum 4 years. They're really thinking about the next election and not thinking about anything else, are they?

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Jonathan Russel: No, well, oftentimes they're not, and really I think that if a government is announcing, like the cutting the ribbon of a new railway line, that should be ... Ideally, that would be a low key event, because we all knew it was coming. In an ideal world, "Yes, we knew that was coming twenty years ago. Well done for delivering it, but you're sticking to the plan." As opposed to, "We're going to build a new railway line, surprise," in 2 years' time. Well, okay, where did this idea come from? Why do we suddenly need a new railway line. Surely we thought about this for 20 years.

Veronica Morgan: And that is so true because I have to say, living in Sydney and all of a sudden there's a light rail going out to Parramatta, and you go, "But there's a heavy rail going out there already, why do they need a light rail as well?" There's ... Northern Beaches doesn't have a railway system at all, I mean, you just go scratching your head thinking, "What?"

And then there's other things, like for instance the Lane Cove Tunnel, that was built and then suddenly an apartment building's falling into it and you think, "Someone missed something there didn't they?" Another one is the Iron Cove Bridge in Drummoyne, right? So for years you've got this silly little bridge that was not coping, and so suddenly they decided to build a bridge to the side of it, and that was when I discovered this concept called design and construct. And it's like, "That's how everything's built, what?" It means it's designed as it's built. I know that that's common and you can probably assuage my fears on that, but I was like, "What?" Wouldn't there be a lot more work done before you actually started it, otherwise finding out the problems as you go.

Jonathan Russel: I think that's probably a good example of how most people think of engineers and engineering. You call them in when you've got a specific engineering issue like, "How do I build this bridge?" But really the engineer needs to be brought in at the very early stages to think about what are the transport or construction issues that we're trying to overcome and how do we actually address them.

Veronica Morgan: In New South Wales, we've got an election this weekend, and this podcast, we record them and they don't come out straight away, so sorry, listeners, we'll know who our next Premier and government is by the time this is released, but there's a new election and so the state government ... I saw these billboards around from the Greens, talking about congestion and those sorts of things, you know, we've got to have better public transport etc. So it's sort of a bit ironic that it sounds like the Greens and Engineers Australia should be getting together on this.

Jonathan Russel: Yes, I think so, and she's moved to the federal Senate now, but Mehreen Faruqi, until she made that move, was an engineer in the Greens in New South Wales. So there is at least some connection there.

Veronica Morgan: So there you go.

John Roydhouse: She actually was a local government engineer on the Mid North Coast of New South Wales. Actually a member of my organisation as well, and very active in road safety and traffic management is her speciality. So it's actually great to see them pick it up. The issue of public transport is a really interesting one, because public transport doesn't deal with one of the major users of the road network, and that is, heavy vehicles and transport, get all our goods around. That is a real challenge for engineers to deal with as we're getting higher productivity vehicles, our B-doubles and our road trains and our other heavy vehicles. Not just on the highways to get them between capital cities, but getting them around what we call the first mile and the last mile. So when they come off those highways and get into the distribution centers, get into the supermarkets, those sorts of places, that's a real issue again for engineers to be challenged by.

Chris Bates: You can see that in where we are in the city, like in Barangaroo there's literally big semi-trailers coming through the city at all hours of the day and it's like, how is the impact of that on the community, with the light rail, the disruption that that has on the community to build that is just enormous and it hasn't really been thought through.

I guess some of our listeners, or some people have said to me is look, you're anti-new, you hate new property, you shouldn't, which is true, but what's your solution then? And I think well, we still need to build it, I think we're still going to keep growing our population, we're slowing it down apparently but we're still going to keep growing our population, our cities are still going to keep growing, we still need to build new property otherwise we're going to have a problem. My biggest problem is that we built the wrong

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stuff and we keep building the wrong stuff and I guess, is that kind of what you really want to change? Is that all your engineers, if we're going to build this stuff, why don't we just build quality and why don't we actually build stuff that's going to last, that is built to standards, that is built with good materials and does suit our biggest problem which is families. Is that kind of where you would like to see the industry move, or is it different or-?

John Roydhouse: Getting it right is really important. Setting standards is really important. I'll go back to my last trip overseas and I spent a few weeks in the beautiful city of Paris. There was not a lot of new construction, but there was a lot of maintenance going on, on buildings that are 12th century, 13th century, 14th century. They're still standing. They were built right in the first place, and that's what we want.

Jonathan Russel: And maintained.

John Roydhouse: And maintained, and that's important. And again, to have suitably qualified people, a registration scheme for engineers is crucial to ensure that those standards are written and set in the first place, and then adhered to. It's absolutely crucial to having that. So yes you can have new buildings, and we do need new buildings, we need new roads, we need new water supply systems and as we deal with autonomous vehicles, electric vehicles, our road networks are going to totally change in how they operate over the next 20, 30, 40 years. We need to have engineers at the table, setting the standards to make that infrastructure work.

Chris Bates: Yes, that's a good point. Simon Kuestenmacher in one of our episodes, I have no idea which episode, but he's a demographer, he's quite well known, he's part of Bernard Salt's Demographics Institute and he's German, and he said that exact same point around the biggest problem we have is we have no middle ring, we've got big towers and we've got houses, but these big cities, like your Londons, your Paris etc., they've got a really strong middle ring that's maybe 6, 7 levels high and it's been around for 600 years and it's built for quality and it retains value, and you maintain it and you can keep growing your population. That's what we haven't got here, we just build things that are going to last at least 7 years.

Veronica Morgan: It's a worry, isn't it. And so in terms of buyers who are looking at buying something, what can they do? Is there a sign that they can look for to give them some confidence? Is there anything?

Jonathan Russel: Do you want to answer that, John, first?

John Roydhouse: I would encourage listeners that, do your due diligence when you're purchasing. Certainly talk to your real estate agent, and anything that comes off the plan in particular, make sure that the engineers who are signed off it have some appropriate qualifications. Engineers Australia runs a very very good registration scheme and it's a certification scheme, and make sure that those engineers actually are chartered. If you're not sure, ask the engineer to provide that certification certificate.

Veronica Morgan: How can you find that? If you contract a sale or ... because most real estate agents would know, just quietly, so ...

Jonathan Russel: I think what John said about being especially new build, that's probably the only way that it's possible. With the old build stuff, who knows, the engineers involved are long gone, right?

Chris Bates: 1920s to-

Veronica Morgan: It's still standing.

Chris Bates: Yes, it's still standing, there's your proof.

Jonathan Russel: You'd probably... I imagine the real estate agent probably have to talk to the developer, but now the developer should know who's involved in that project. And it could be one of 2 things, like ask the developer to assure you that they use people who are properly qualified, and the other part is to maybe even get the names of the companies or people involved and

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check against a register, but then it becomes a problem. How do you check that they're actually suitable? Now John mentioned that Engineers Australia has the National Engineering Register. It's a voluntary register for engineers. It has about 20,000, maybe 25,000 people on the register across the country, and I mentioned before that there are about 330,000 engineers in the labor force, so not everyone's on it, obviously.

Chris Bates: So 25,000 out of 330,000, so less than 10%.

Jonathan Russel: That's right. Okay, maybe I should be a bit fairer about the 330,000. Only just over half of those work as engineers, but that's still 175,000.

Chris Bates: Still only 20%. Yes.

Jonathan Russel: Yes. So what Engineers Australia is calling for in New South Wales is for both parties to commit to bringing in a registration system for engineers, a statutory one, so that it's no longer just a voluntary system, because for as long as it is voluntary you can choose not to be on it.

And then, so, both parties in New South Wales, like you said, Veronica, we'll know the result by the time your listeners get this, but the Coalition has said that they'll introduce a registration scheme for engineers involved in residential construction, so that's directly relevant to what we're talking about here. We're not too sure exactly how comprehensive they're going to be about that registration scheme, but they say that they're going to bring it in so we don't have ... to address the Opal Tower report recommendations and the COAGBMF recommendations I mentioned earlier. The

Labor Party, and I think John probably knows a little bit more about their commitment, but they have also committed to have a registration scheme for engineers. Their focus has been on public infrastructure in their announcements. It's unfathomable to me that they would consider not including residential construction related engineers, so I assume they mean to include that as well.

John Roydhouse: That is certainly my ... my conversations on both sides of government, and opposition. Jonathan, you've got it exactly right. The current government is there for residential but not necessarily for other aspects of the building and construction industry including public infrastructure, which is of concern.

New South Wales has 180,000km of road network.

Veronica Morgan: Well, we can look at-

John Roydhouse: We have a serious road fatality issue, that costs the state government \$7.5 billion just in road trauma costs, and that's affecting 400-odd families every year with fatalities, let alone the 12,000 injuries.

Veronica Morgan: And you're putting the responsibility of that onto the actual road design and maintenance, or a part of that? Is that what you're saying?

Roads need maintenance, they need design, and they have to be constructed. They're major-

Veronica Morgan: Issues.

John Roydhouse: ... issues for our community.

Veronica Morgan: Look at what happened in Italy. The whole bridge collapsed, that's a maintenance issue.

John Roydhouse: Bridge collapse. Touch wood, we haven't had one of those in New South Wales. I guess that's the one blessing with the Opal Tower, we haven't seen any fatalities. No one's been hurt, so that's something we can be thankful for.

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Chris Bates: We've had the warning signs, though, right? We've had the big apartment block in Melbourne that went up, the cladding-

Veronica Morgan: Lacrosse.

Chris Bates: They've been there, and ... You know those buildings they still exist today and they've still got the same risks. They've still got the cladding there. Can you go back in time and change these buildings? What's the solution? Do you just have to knock them down, or-

John Roydhouse: They can be fixed, but again, you'd want a good engineer to assist in that process, and again, we want standards to be set and maintained, which is why we've been campaigning so hard for recognition and registration of engineers. To actually set those standards.

Jonathan Russel: And in New South Wales, you don't need to be a registered fire engineer to design the safety systems on the high-rise, whereas-

Veronica Morgan: It beggars belief, doesn't it?

Jonathan Russel: It does beggar belief.

John Roydhouse: I could design a road, you don't have to be qualified. It's crazy.

Jonathan Russel: It's up to whoever's employing or engaging you to do their due diligence and figure out that you've got the right skills suitable, but-

Chris Bates: But when it's a public issue or a social issue, should that be outsourced to someone who's trying to make money?

Jonathan Russel: You think about a doctor working in a surgery. The head of the surgery, of course, is doing his due diligence on the staff he employs, but then you as a customer come and you don't go and check his doctor's certificate. You'd trust that the system's there and then if you do make a complaint about your doctor, you know that they can be followed up. In engineering at the moment, it's not the case.

Veronica Morgan: And that's, I think, that's really important for listeners to understand and obviously pressure your local member, because the thing is that we do trust so much, every morning we wake up and we trust that our floors aren't going to collapse, we trust that our ceiling's not going to fall in, we trust that the water's going to come out of the tap, we trust that when I put the key in the front door it's going to open, that the car will start. The neighbour next door hasn't had a major blow-up with his wife or whatever and going to blow up the whole neighbourhood. I mean, you just don't know. We trust all that stuff's not going to happen and I think with the engineering side of things and the impact on so much of our environment, the build environment, basically, isn't it. But with the impact of engineering on every single thing that we do in our lives, to not have that better regulated is quite shocking.

So I think I'd like to encourage all listeners, and I'm going to do the same thing, I'm going to my local member after next week. [crosstalk 00:49:00].

John Roydhouse: And certainly, there was a survey done last year, and it was one of the Ipsos polls, and the results came back that 93% of the respondents did want their engineers to be registered. In fact, most of them were surprised that they weren't already.

Veronica Morgan: I think that's a good ... that's a big point, really. I was, and I'm sure most people are. It doesn't surprise me at all.

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Chris Bates: So who's holding this back? If everyone, common sense, we should have everyone legislated, we should have everyone accredited etc., but obviously it hasn't happened and it's not like we're just all of a sudden become this country that thought about this. This is obviously something that's been kicked down the road for many years. Who doesn't want this to happen? Is it the construction industry more broadly? is it the state government? It actually makes too much sense to not do it, but someone's obviously trying to hold it back.

Jonathan Russel: I'll make a point of order of something John said right at the beginning. Queensland's actually had it in some form since 1930. 2002 is the most recent edition of the Act, so Queensland's way ahead of the game, finally.

Sorry about that.

Veronica Morgan: We have Queensland listeners, do we love you?

Chris Bates: Sunny up there.

Jonathan Russel: Anyway they've got registration right. It's comprehensive, it's any type of engineering service, you have to be registered. In New South Wales, Engineers Australia and Institute of Public Works Engineering Australasia have been on this topic for decades, I would say.

Veronica Morgan: How frustrating for you.

Jonathan Russel: And the argument that often comes back, there's sort of 2 main arguments.

One is ideologically, both major parties don't really like regulating things. It's more like deregulation.

Chris Bates: Yes, I see [crosstalk 00:50:43].

Veronica Morgan: Same issue with the real estate industry, but anyway.

Jonathan Russel: And regulation, they say, "Is it red tape?" Red tape is regulation that doesn't work or isn't needed. When regulation serves a purpose and is efficient, then it's good regulation, and that's what we're pushing for.

And the other argument that comes back very often is, "But things aren't"

Chris Bates: Cost.

Jonathan Russel: No, not even the cost one. Things aren't falling down.

Veronica Morgan: I'm sorry, let's wait for a catastrophe and then we'll regulate.

Jonathan Russel: That's right. And when you've got something that is so specialized as engineering, it's not something that a layperson can make a judgment about. There is a vast gap in understanding between the person who consumes the service, whether that service is trusting just being able to get around in life every day as you mentioned before, Veronica, or the service is can I buy that specific apartment, and the person who can actually provide that feeling of trust or that good value apartment. The gulf in the understanding of the issues is so broad that without a registration scheme, there's no meaningful quality assurance mechanism in place, or additional statutory influences on the practitioners to make sure they they are actually stay up to date, have the right experience, don't work outside their area of expertise, because a structural engineer isn't really going to be able to work on the mechanical side and vice versa. It's not just engineering as a whole, there are-

Veronica Morgan: Disciplines.



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Jonathan Russel: Disciplines, yes. So they're the 2 main areas of push back that we get.

John Roydhouse: Certainly to support Jonathan, it is that fear of regulation and red tape. Jonathan made a very good point and I'd like to refer to it, think of it as green tape, not red tape. Good regulation actually is beneficial to the community. And the second challenge is because the requirements are state-based, and there was a push back in 2011-2012 through COAG to try to bring a uniform registration scheme across Australia, bringing all the state governments on board was a little bit, trying to build the 19th century railway, and with all the different rail gauges, so. It's been state by state, gradually trying to tackle this issue.

Chris Bates: I think the property market just ... Generally, people don't want to regulate, right? They don't really want to get involved and it's just too much of a money making system that they don't really want to slow down, because they want them to be built. That creates jobs, it creates stamp duty, it creates land taxes, it creates ... there's so many things that they really don't want to upset the status quo, I guess, and potentially adding more levels to the way that construction is built that they're just worried that that could slow things down.

John Roydhouse: It's not actually building more levels, and I guess that's the key point. It's actually getting the levels right, and getting the services done right in the first place, so it actually will save money, not cost money.

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