Season 2: Innovating Infrastructure podcast

Episode 3: Rethinking infrastructure delivery: Capability and capacity with Richard Scott, General Manager of Pre-Contracts and Estimating, John Holland

Transcript:

Michael: 0:03

You're listening to Season Two of Innovating Infrastructure - the Global Infrastructure Hub's podcast that explores improvements to the way we deliver infrastructure. I'm Michael Twycross from the Global Infrastructure Hub. And I'm your host as we delve into examples of how infrastructure delivery has been improved around the world.

This six-part season includes one-on-one interviews with infrastructure leaders, drawing on insights from our improving delivery models Initiative, which aims to help industry address common challenges faced in infrastructure delivery. The initiative includes a framework, case studies, an overview of different contractual models, and a library of key reference documents.

To find out more about the case studies, resources and topics discussed, visit the Improving Delivery Models Initiative, at gihub.org.

Today to talk about the importance of building capability and capacity when it comes to improving infrastructure delivery, I'm delighted to welcome Richard Scott from John Holland to the podcast. Richard is the General Manager of Pre-Contracts and Estimating at John Holland, one of Australia's leading integrated infrastructure and property companies.

Richard has over 20 years of industry experience and is a qualified civil engineer, he's working through one of the largest infrastructure project pipelines in Australia's history. This discussion explores how capability and capacity is reflected in the pricing of bids and the approach to tendering and explores the need for procuring entities to be contractually agnostic.

For all resources mentioned in this episode, visit the show notes at gihub.org. Now, let's get into the discussion. Enjoy.

Hello, and welcome to the Innovating Infrastructure Podcast. I'm Michael Twycross from the Global Infrastructure Hub. And we're here today to discuss the theme of capability and capacity within the context of our Improving Delivery Models Initiative. Here to explore the theme with me is our guest, Richard Scott. Welcome.

Richard: 1:51

Morning, thank you for having me.

Michael: 1:54

Quick introductory question, who are you?

Richard: 1:57

So I'm the General Manager of Pre-Contracts and Estimating at the John Holland group here in Australia. So, John Holland is circa $7 billion a year turnover engineering construction organisation that also operates a lot of transport infrastructure down here. I've been in the industry for over 20 years. And I've probably split my time there between the pre-contract space of work-winning, around, particularly in a Chief Estimator's role and Bid Manager's role. But I've also spent probably about a decade as well, on-site actually delivering works. So, it's been a pretty amazing experience in my career so far. And that experience has been in Australia and New Zealand and Southeast Asia as well.

Michael: 2:38

And given that experience, what do you think the most important improvement made to infrastructure in recent years has been?

Richard: 2:45

I think probably one of the most important improvements we've seen, particularly here in Australia, is the change in diversity in the teams and the people working in infrastructure. The industry has always had a long history and a great diverse workforce, as we call it at the coalface. But I think particularly in the last decade or so we've seen a lot of that diversity, move up into the professional roles and into management roles, it's certainly got a way to go.

And now we're seeing the benefits of that diversity come through in our professional areas as well. But of course, the next big challenge we do have to tackle is gender diversity. And that was a hot topic in the industry. And we've got a long way to go there. But I think cultural diversity has actually been one of the big improvements and changes I've seen recently.

Michael: 3:30

Yeah, great. I guess that really touches on the second question I have on how the sector's evolved in your time - what would you speak to as being some of the guiding elements that have led to that diversity increasing or cultural diversity, at least within the workforce at white collar level?

Richard: 3:45

I think it's just generally been the industry has evolved, as I think Australia has too in that space. A lot of it comes, a lot of people I speak to come from those sort of classic immigrant stories as well, where their parents have come out and they've been started in the trades background, and then the second generation go, and they go to TAFE. And they become supervisors, or they go to uni, and they become engineers and managers.

And it's been quite amazing to watch, actually. I suppose the other evolution then is the number of roles has changed a lot. I was reflecting back because we're building a very large tunnel project here in Sydney at the moment. And there was a couple of us talking that just after the Sydney Olympics, we tendered for what was then about one and a half billion dollar tunnel, which was in those days enormous.

And there were less than 20 of us on that tender team, including the designers and a few estimators, a couple of design managers and this tender team we're looking at, we have a few hundred in these tenders now. So the number of people involved particularly in the pre-contract space, but even in delivery has really broadened in the last 10 years.

Michael: 4:50

In terms of the Australian market. Currently, you've mentioned that the major tunnelling packages are underway. There is a massive pipeline of work coming in the Australian market. And even if we just look regionally at Southeast Asia, there's a huge amount of work happening. Can you just briefly explore the environment that you're working in currently conscious of things such as terms as profitless boom and things like that being thrown around at the moment?

Richard: 5:16

Look, it is an interesting environment. And I do draw parallels back to what we call the oil and gas boom, which was about 10 years ago, and where we saw the volume of work increase many, many, many times over in that space. But then the difference with the infrastructure boom, for want of a better term is the volume has increased more, it's a lot more work now.

But it came off a more mature industry as well. So, we haven't had as many issues ramping up as the oil and gas. But we are seeing very similar parallels where there was a lot of work on, but there were the same issues of people not making money, which led to the worst case scenarios where we did see insolvencies back then, and some large insolvencies happened. But also the insolvencies you don't see on the front page of the Financial Review that to the subcontractors and business suppliers that happened as well.

Also, similar to what we saw in the oil and gas boom, we saw a lot of foreign competitors come into the country. And competition is not a bad thing, competition is good. But it's very easy in our industry to win a tender because you can lowball quite easily, but then you have to deliver that. And I think we do as an industry do ourselves a lot of disservice, we do sometimes get white line fever in those tenders.

And regardless of the contract model, or the risk allocation or anything like that, that's screaming like a tender from an inexperienced team can have ripple effects right through the industry. And we saw that in the oil and gas boom. And we are starting to see that as well in this current infrastructure boom.

Michael: 6:46

Yeah. It's interesting how history repeats itself, in many ways. Jumping back into the points around capability and capacity and the scaling up of teams that have happened, there have been a lot of international entrants into the market currently, is everyone working off the same skill set base? Again, you mentioned the migration before, but I guess, generally speaking, it's only a set pool of people who are able to deliver these works, yet we're increasing bid teams,

we're increasing the amount of people involved in projects, where do you think that capability and capacity can come from?

Richard: 7:15

So, it's really difficult at the moment, Michael, some people do see the solution to this in bringing in overseas competition. And again, competition isn't a bad thing, the industry will always be competing, and you want that as part of the greater member of society, you know, infrastructure is a big cost in driving the economy. But where we did come to is bringing in international firms may bring in some of the professionals that can reach too, but really, that's at best about 10% of the workforce in an infrastructure project, which comes back down to the people on site and those skills.

And that's where we, as an industry, are struggling. COVID made it worse, because we haven't been able to bring in people from other countries. But I think even as the borders open, what our concern is, that's not going to solve it either. Because we are seeing so much work overseas. Singapore's moving on with the cross-island line, Hong Kong, putting up for a tender soon, their extension to land to island, you've got Paris Metro, even in the United States, you've got the infrastructure bills, so I don't think we're going to have that luxury we've had in the past of bringing people out here, which comes back down to we'll actually have you develop on-site skills.

And we've seen some really good things done like that, we've seen coming out of Melbourne Metro and Westgate tunnel, tunnelling skill centres, and Great Sydney Metro did a similar thing as well. But I think as a whole industry and our clients, we need more of that, we need actual training right across the country, for the industry to continue as we are, we need to see TAFEs expanded and more people doing trades as well as the professionals.

Michael: 8:48

How is that uncertainty or that limiting factor reflected in, I guess, the work that you do around bidding and how you estimate and forecast work?

Richard: 8:59

It has it, it's actually had a really big impact, Michael, because we always worked on, we get a lot of data from our sites. So we get continual feedback on productivity. And it's certainly something in my Chief Estimator Role we guard very closely. But the advantage of, for example, John Holland, the benchmarks we have on tunnelling, and rail and water is amazing.

And what we have seen is we've seen those unit rate productions really drop and we've actually seeing sharp declines there and we've talked to our people on site, and it actually comes back down to the teams and the skills in there that once upon a time if I use earthworks as an example, an operator driving a large scraper would have spent five years driving a roller, ten years driving a truck long before they get on to the really big equipment that costs you $200-$300 an hour and now there's such an acceleration to get people up there, somebody might be on a 657 after five years.

And so to keep the work going, we need the people on those, but we're not getting the productivity, so our former standard, man hours per square metre aren't relevant anymore, our push per hour per scrapers aren't relevant anymore. Tunnelling is still such a special area. So far, we've still been achieving the production rates we get. But it will be

interesting to see particularly as more tunnel boring projects accelerate how that goes. But even in the precast side, we're just not seeing the production rates that we used to have.

Michael: 10:21

And from a white cost perspective, you mentioned the bid teams increasing from 20 people to hundreds now, are those kinds of costs for the business increasing substantially then and that's really impacting that side as well?

Richard: 10:33

Yeah, definitely. And I don't mean to sound like the typical contractor, mentioning about bid costs, but I think it is important to note that tender costs pass through to the contract price. We have to put in our margin, or we have to put in our lump sum, it's a cost of doing business. And again, we've moved from metrics, and I'll use rough numbers, but sort of moved from metrics of 0.5%-0.6% of contract value to 1.5%, even 2% to bid for a project.

That is certainly a sign again that you have a lot of inexperienced people working, younger people with less years under their belt, doing tender designs. So you have a bit of inefficiency in there. But it's also having to do a lot more, a lot more in those tenders. And a lot of that drives from, in my experience, how quickly tenders are coming to market.

Michael: 11:18

It's a really interesting area. It's even more exacerbated at the moment, as we're recording with the geopolitical situations and supply chain constraints that we've seen over the COVID period, capability and capacity from that sense, an industry or an ecosystem to get the cement or the sand or whatever where it needs to go.

Richard: 11:36

Yeah, definitely, I think more so than ever, as Australia, down in our part of the world, we felt the global supply chain within the infrastructure space a lot more. And I think a lot of that comes from the projects that are probably a bit more sophisticated than they used to be. So we have a lot more imported content, I think what will affect the infrastructure efficiency over the next medium term, the next 12-24 months, is actually how much is being done globally.

I don't think we've ever seen it globally been used as a stimulus to run across the world. And that's where certainly from my experience we're seeing it become more and more of an issue and tunnelling equipment's a great example.

Michael: 12:12

That's really interesting within that, and that's one of the biggest improvements we've gotten in the initiative under capability and capacity is the use of pipelines or forward planning from a government perspective on the future work coming up. As a contractor, how important is that for you to understand that forward pipeline?

Richard: 12:30

Visibility of the pipeline is absolutely critical for us. And it's the timing as well. So it's not just what projects are coming up. But understanding when they're going to come to tender, and when they come to deliver. At John Holland's, off the top of my head, I think we've got about 7,000 staff that we manage, coming off projects working in and out of bids. So, it's managing those resources.

By having visibility of that pipeline, we can, from a corporate point of view, manage where those people are going. But actually also from a human point of view, I think a lot of us forget what it was like in our site days of the project coming to an end and not knowing where you're going to next.

And it makes a huge difference for us to go out, talk to your project teams and say, hey, these tenders are coming up, who wants to come in and work on that tender team? And more importantly, we can target the people with the skills in that area. But there's also the flip side of as I said earlier, tender costs are getting higher. So, it's quite a large investment decision for us to make. And so when we have the visibility of pipeline, we can manage those investments a lot better and make decisions earlier, develop, target those tenders. And certainly having visibility and confidence in those timelines will be a big factor of whether or not we actually tender for something at the moment, which is an unusual place to be as a contractor.

Michael: 13:41

The one element I think you briefly mentioned earlier, but something I'm always keen to ask a contractor is around contractual models, and just how they play into how you approach things. There are a lot of discussions and narratives around the more technical models when it comes to things like public-private partnerships, or even alliancing where there's a lot more ongoing management-related costs. Does this type of contractual model influence how you approach projects or like from a capability-capacity standpoint, or is it really, you're going for the project, and the project determines that?

Richard: 14:12

So, my view is the contractual model is more appropriate to reflect the state of development of the project rather than the actual technical, physical scope of the project. Hard to look at contracting as a place in the industry, it absolutely has a place, it has a place, DNCs and there's nothing wrong with competing in that space.

So, I tend not to say, "Oh that project's that an alliance, I'm going to go for that because it's an alliance or it's an MC..." Because there is a balance, because there's a risk versus reward basis too. We tend to look at how well-developed a project is before we decide to tender on it because what we find is a project that's come to market very, very quickly regardless of the model can become a difficult project, an alliance or managing contractor model where even if our risk is capped that becomes a budget overrun is not necessarily something as a contractor you want to be involved with.

So, we actually really look quite hard at how well-developed the project is, how mature the client is. And what is the process if it is an undeveloped one? What's the process you're going to work through with them before you've picked a price? The model is not a driving factor at all, it's more what's the process to get to delivery? And can we deliver this to the client's expectations? The only I suppose asterix on that is if we saw something that you get a little more than an

alignment on a page, and you're expected to take the full PPP risk profile, then we'll actually say, "That's not something we can accept, so we won't tender on it.

Michael: 15:44

There's definitely been a lot of chatter about that, that risk allocation in the industry, from your experience, how does that flow through to the capacity of the team? I would imagine you're coming on to or agreeing to projects like that, you're going to end up using a lot more resources trying to figure it out the process and also you need the right technical people in there to be able to understand what's required.

Richard: 16:04

Yeah, absolutely. And so that comes into the decision-making process as well. I think we've surprised a few clients recently, there were some, for those that aren't so familiar with the local market, John Holland, we're quite proud of our rail capabilities. And there were some recent PPPs in the rail space where it was assumed it was a John Holland job.

And when we looked at the particular prospect, and again, the model that was in there, and the amount of resources we would have had to have put into that tender at the time, our decision came down to exactly that, Michael, we said, we need to get those resources onto current projects that we have. And so we let that one go through the paper. And I think that it surprised our partners, and it surprised the client as well, I think that we didn't tender it. And I think it surprises a lot of people within John Holland.

Michael: 16:51

Yeah, the main message I'm taking from this part of the discussion is, again, one of the key things that has come out of the Improving Delivery Models work, which is that a contractual agnostic approach is important because choosing the wrong contractual model can lead to whether that scenario or others where it's a poor outcome for both parties.

But I think as well, it speaks to how the contract is really a contract, from your perspective, briefly touching on the stuff you mentioned at the start just around that evolution in the industry, a lot more contractors, or people within contractors working on projects, whereas previously, there may have been a bit more of that work being done internally by the client.

How have you seen the evolution of the government side or client side resourcing towards projects, because it definitely feels like from where I've sat in the industry, you have seen this shift of more or less, I guess, in-house work being done by government and more of being outsourced.

Richard: 17:45

So, this is very much my own personal view. I suppose I feel my age and get a little bit nostalgic back to when we had very strong public service. And I think they did genuinely deliver in the best interest of the Commonwealth, or the state that they're working for. And contracting in those days was hard, we had some projects around Australia that were really tough, nobody was making ridiculous amounts of money. So, it's certainly not to do with a commercial sense, because I actually don't necessarily think that's changed that much.

But in terms of actually delivering the projects of having those career public servants and senior public servants who knew the role of government in delivering infrastructure is not as consistent as it used to be. When we decide to bid a project we should look at who the client team is, as well.

A big influencing factor from my own assessment is how much of that client team is in-house. And you do see a very large difference when you have the transaction side of the client. If there are a lot of people who don't have that experience or public servants are coming from a non-engineering consulting or a financial background, because you do tend to find they do turn into transactions more so in a bit more like the old PPP world or financial world, as opposed to when we used to have a more consistent client side because the work wasn't as much as it was now.

You only do one major project every few years whereas now we tend to do two or three a year. And so that makes a big difference. And that's certainly Michael, to me, that's completely contractually agnostic. We have things that were first past the post construct only, and they are some of our most successful projects, and fantastic relationship with the client there. And the flip side is you can have some alliances where most of the client team has come from outside the actual state entity, and they're some of the most difficult projects. So it's a mix, but certainly I do think client side is struggling from the same capability constraints we are.

Michael: 19:45

Indeed. I guess the main thing I take from that and it's a perception I've had for a while, but it's just the strong client capability and capacity is critical for delivering many projects, or at least everyone recognizing their limitations are what capability and capacity they have and trying to source what's missing from the market.

Richard: 20:03

Yeah, it absolutely does. It's often that the same contractual model will yield 10 different outcomes. The model I'm probably the biggest fan of is ones where we work very closely with the client to build up the scope and we build up the cost together. And it doesn't matter if that cost then becomes a lump sum, like a traditional CI or a target cost like an alliance or a fee, like a managing contractor. But generally, my experience has been where you work single party with a client, and spend the time developing the scope before you go out and strike a blow on the ground and spend that time before you lock in the target. And so in the last 20 years, they've been the most successful projects,

Michael: 20:45

in terms of takeaways from your experience. And we have spoken a lot already about the importance of being contractually agnostic and I guess how that interplays with the capability and capacity, what's one element that you see as being important or critical to enabling a contractually agnostic approach?

Richard: 21:05

I think the most important thing is when the customer-side have people who have delivered these projects. And so they look at how do we deliver under this model, as opposed to how we procure under that model. I think that's one of the most important things to look at.

Michael: 21:21

Yeah, that's an interesting one, because definitely a lot of people talk to, I mean, it's part of how business operates. But there's how the government operates. But there's the procurement team, and then the delivery team a lot of the time, but that switch over can cause a lot of challenges for both sides.

So, yeah, I guess having more continuity through that, or at least having the people involved that can manage that switch over. And in terms of lessons in your time across the sector, that resonate with the theme today, capability and capacity, what would be the key one for you, whether it be anecdotal or otherwise?

Richard: 21:55

The key lesson for me is when you're in the procurement phase, in the tender phase, is match your solution to the capability that's going to be in the market when you get there. And what do I mean by this? I was involved in quite a large road-building program a few years ago, and this was circa $4 billion.

And even the way we looked at the pavements there, and this was over a few hundred kilometres, we very carefully balanced the amount of concrete pavement on that job to match the capability for concrete slip and pavers in the market, and those who aren't in the road building space, slipform concrete paving is quite a specialist thing.

And there's only a few people in Australia that can do it. And that made a big difference on that project of actually tailoring our solution, tailoring our design and tailoring our procurement approach to the market to match the capability. And the other key thing is match your designs to your local capabilities. Your own rule of thumb of what's cheaper, they don't work in a boom, so you got to cost things and test them. And when you're in a boom, if you match your design to your local capability, you will actually come up with a better value for money solution.

Michael: 23:00

Yeah, that's an interesting one. And it's definitely something that's pushed a lot about that local development. And finally, when it comes to infrastructure delivery, what is an improvement you'd like to see in the next five years?

Richard: 23:14

I would like to see digital engineering improved in the tendering phase. I would love to see PDFs go the way of hand drafted drawings. And I would love to see clients agreeing to give us the models as a relied-upon contract document. And for those that aren't in the pre-contract space and don't understand what I mean by that is at the moment, the only documents we can rely upon are projected PDFs, if we could rely upon the model and use that to develop our solutions, we could do a lot more in tendering, we could do a lot more value engineering. And I think we could deliver things a lot more efficiently right from the start.

Michael: 23:50

That topic is definitely worthy of an entire other discussion.

Richard: 23:54

I could talk about BIM for hours, Michael.

Michael: 23:57

Yeah, we do have an infotech use case library developed through one of the G-20 presidencies, the Saudi Arabian one, and the talks to BIM and some of those digital technologies that are coming through in the infotech space. So yeah, thank you very much, Richard, for your time. It's been a fascinating discussion, really great to get your insights on a lot of this area. Thanks for joining me today. I'm Michael Twycross from the Global Infrastructure Hub. And you've been listening to Innovating Infrastructure