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Crossrail Tackling the tough questions (Completed 03/31/22)
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Russell Pilgrim:
Hello, and welcome to the special edition of Jacobs Inflection Points Podcast. Today, we are joined by
Mark Wild CEO of Crossrail and Donald Morrison, Senior Vice President of People and Places Solutions
and Digital Strategies at Jacobs. I'm Russell Pilgrim and I'm a program director at Jacobs overseeing
some of the company's key contribution to this iconic project. This podcast will showcase Jacob's role in
working in partnership with Crossrail on the development of the Elizabeth Line, amplifying its social
benefits whilst providing insightful key lessons, for future major infrastructure investments. Welcome
Mark and Donald, how are you today?
Mark Wild:
Thanks Russell. Yes. Delighted to be here. Very much appreciate the invitation.
Russell Pilgrim:
And Donald.
Donald Morrison:
Hey, thanks Russell. Yeah. Great to be here today and great to be speaking about this state of the art
new railway and the legacy it's creating.
Russell Pilgrim:
Excellent. So, today, firstly, we'd really like to explore the uniqueness of this project and how you've
delivered something as transformative as this in such a scale and complexity. And as we've got listeners
from around the world, we should start by giving the introduction to the Crossrail project and program.
And also we'll then go on to Jacobs in the UK as well, Donald. So Mark, can we start with you?
Mark Wild:
Yeah. So Crossrail, a lot of people will know what it is, but if I just explain a little bit about the geography
of London, that there are many North South Routes in London, in public transportation. And people will
know London's uniquely I think, like other major cities has a very dense urban network of mass transit.
But for decades, even for 150 years, it's been recognized East West routes in London have been more
difficult to achieve largely due to the topography of the river, the ground conditions. So I think since
1834, a new East West route in London has been planned certainly after the Second World War, when
London was being rebuilt, people thought about it then, they thought about it in the seventies.
Mark Wild:
And finally in around 2005, we achieved the ability to build this epic project, which is a new railway east
to west, west to east, across London and crucially creating, not just big trains coming into terminus
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Russell Pilgrim: And Donalc,ꀀon Jam�ousiĀ㸀,he ̱倀ꀀ.e谀oǐld yohexplain怀to0t耗퀀 U薔d sƑꀀehersae谀oǰt this co퀀ųƏanǅ?

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diversional. They can, but when you're in mega system uncertainty, end dates can be deadly. And I think
by the time we got to 2016 and 2017, with epic hindsight, now, of course, it's clear that the fixed end
date of Crossrail drove behaviors and decisions that maybe weren't in the best interest of the whole
program. And the system integration risk was hiding in plain sight. And I guess I'm sure it's in every
single report that's been done on Crossrail. It's noted that the leadership team at that time were driven
by the end date, meeting that with ever more extreme mitigations, rather than the ability to say
uncertainty exists.
Mark Wild:
We have a window. Now, this is really tough for leaders. It's tough for Jacobs. It's tough for clients. It's
tough for governments. It's tough for treasuries. But the reality is these major programs are very
uncertain. There's work by UCL in London and Oxford that says, most mega programs are over budget.
It's a reality. So in that context, you might want to think about uncertainty being a core competency of

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it, but be realistic, that there is a downside risk. And I think future mega programs around the world will
really benefit from the lessons of Crossrail.
Russell Pilgrim:
Excellent. And Donald, that goes on to my question regarding assurance. Assurance has played an
important role in the handover process. Can you provide an insight into both sponsor assurance and
program assurance, which Jacobs has played a pivotal role in?
Donald Morrison:
Yeah. Happy to do that, Russell. One of our key roles at Jacobs is in providing performance and line of
defense assurance such as on the Elizabeth Line. Our project representative team has provided
independent technical like advice assurance and oversight of Crossrail and the delivery of the new
railway. This includes challenging assumptions and work in providing independent clear advice and
recommendation on progress of the project to the sponsors, the Department of Transport, Transport
For London representatives. And as Mark's already outlined, Crossrail is recognized for its complexities
and required integration and all fronts. And I think the behaviors and the leaders that we put in there to
drive that were kind of fundamental.
Donald Morrison:
And I think one of the first times I met Mark he reminded me just of the scale of the task, the half a

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Russell Pilgrim:
And Mark what's on that subject. What your view on modularization then?
Mark Wild:
Well, I think that will be one of the keys, Russell, because one of the main reasons that the system
integration effort in Crossrail became insurmountable at one point was, it's pretty much, we wired this
thing up in the ground. It's like building two nuclear submarines, which is kind of the equivalent of the
asset base we've built. We've put them 40 meters under London and we've actually sent an army of
10,000 people down there to wire it up. It's all a bit mad really. What we should have done is really think
carefully about modularization and build things in factories, tested them in factories, made them
sustainable in factories, ship them to site and plugged them in.
Mark Wild:
And design for manufacturer is one of the key strands, I'm sure Jacobs are all over this. And one of your
key strands to improve productivity, improve cost certainty, greatly increase sustainability benefits, will
be to go for design for manufacturer. It's probably the single biggest breakthrough that could happen.
Because if you can test something in a factory in the middle of England and then bring it sustainably, to
site and plug it in. I think there'll be a huge breakthrough. And unfortunately the industry doesn't quite
think like that. I don't know if Donald agrees, but it's quite slow to adopt design from manufacture. Do

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