Progress towards AI-assisted consenting

The building consent process is famously onerous. Could AI be harnessed to help streamline the work? A BRANZ research project aims to find out.

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In the next few years, the New Zealand construction sector will see increased adoption of new technologies – from further growth in the use of building information modelling to digital product specification information and the adoption of other quality assurance tools. The building consent system is one area likely to see high impact from digital technology, especially as the consenting environment is becoming increasingly complex and more reliant on processing large amounts of data.

Recently, the potential of artificial intelligence (AI) to enhance digital consent systems has been recognised. AI could assist with processing by automating parts of the consent process that currently require vast amounts of documentation to be checked manually.

Addressing the pain points

BRANZ has commissioned research to identify where AI could be used by building control officers (BCOs) within the current building consent system to create efficiencies. The research will ask BCOs across the country about the pain points they experience in processing building consent applications and how they think AI could eliminate them.

To date, the research suggests that many of these pain points are caused by missing documentation (including producer statements, manufacturer warranties and CodeMark certifications) or inaccurate information that triggers a request for information (RFI). BCOs envision three main ways that AI could potentially help.

Pre-submission checks

Most building control authorities (BCAs) have some sort of vetting process or pre-submission check that occurs before an individual building consent application is lodged with the council. Currently, these checks verify whether the right documentation is included with the application but not whether the information within that documentation is complete and accurate.

As one BCO said, the completeness check misses some of the more technical details that only get picked up when they're in the hands of a qualified BCO. 'We have a vetting process upfront, which is looking at the completeness of applications as such, but that's only like a completeness check that hasn't really captured everything that we're looking for, which can be quite a technical process as well.'

BCOs are interested in using AI to improve their vetting processes by verifying completeness and accuracy, ensuring all necessary documentation and basic information are included before formal submission. BCOs are interested to know if AI could pick up missing information such as:

- drawing scale
- index/content sheet
- certificate of title
- north direction
- site plan
- floor plans
- existing elevations
- relevant boundaries
- underground services
- construction details.

Understanding specifications and supporting evidence

BCOs are often overwhelmed by the amount of information provided to them as
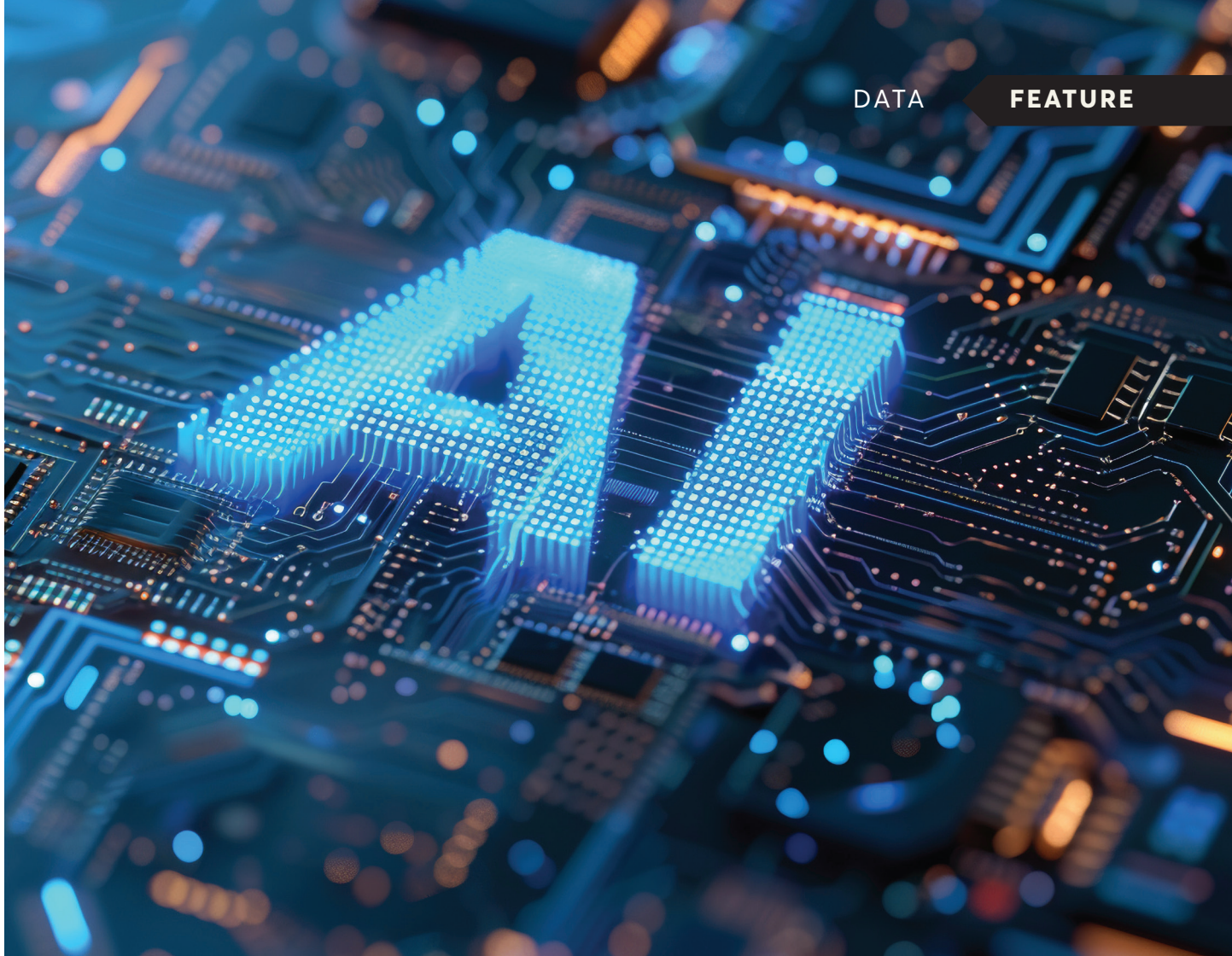
part of the consent process. They wanted to know if some form of AI chatbot or search engine could help them find information as quickly as possible – for example, whether an AI tool could easily search and determine things like:

- whether the lintel size complies with NZS 3604:2011 *Timber-framed buildings*
- whether the retaining wall design meets the relevant standard
- whether any given material can be in contact with another as per E2/AS1 Table 21
- the required flashing dimensions upon confirming the wind zone
- the stud height.

Written communication between applicants and responders

A significant part of a BCO's role is communicating effectively with those who have submitted building consent applications in order to get good-quality information back through the RFI process. Communication is typically initiated when applications require more documentation before the consent can be approved.

BCOs are interested in whether AI could help them craft a good-quality RFI letter. One participant said, 'That's a challenge in itself … how do you communicate a reasonably technical thing in a way that can get you the answer that you need?'

BCOs want to know whether AI could improve the quality and consistency of communication during the RFI process by improving grammar, providing references to supporting material, automatically simplifying language and referring to specific Building Code clauses. This would help applicants understand why the BCO is asking for particular information in an RFI.

Next steps

BCOs see great potential in the use of AI to assist them with their work and alleviate some of their more time-consuming jobs. In the coming months, the BRANZ research team intends to continue talking with BCOs and collect as many potential AI use-cases as possible. After that, the research team plans to speak with consent applicants to get their perspectives on the consent process and potential applications of AI. The final stage of the project will be to test which of these potential use-cases might be feasible to trial and implement.

If you would like to be part of the conversation – either as a BCO or a professional who submits building consent applications – contact Orin Lockyer at orin.lockyer@branz.co.nz. ◀