NEW ZEALAND

SUMMER 2024

PROPERTY PROFESSIONAL

MAGAZINE

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NEW ZEALAND PROPERTY PROFESSIONAL MAGAZINE

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VIV GURREY

Tearing into 2024

It's a great pleasure to kick off the first *Property Professional* magazine of 2024.

Readers who follow the Property Institute of New Zealand will know that we've had a busy couple of months as we wind into the new year, with some exciting new initiatives and a drive to continue building on recent successes.

One of the most notable changes being introduced is a move to hold the National Property Conference every two years, and boosting our education programme to ensure members have easy access to CPD closer to home.

Based on member feedback this means more regional events, which provide more convenience at less cost. We've also launched a full year's CPD programme early, to ensure our members can plan their education and identify the subjects they require for continued membership of the organisation.

The education calendar can be found HERE and I encourage members (or any interested stakeholders) to review what's on offer. I'm confident they won't be disappointed.

But no year is complete without the opportunity to socialise, network and honour our most talented and respected members through the New Zealand Property Professional Awards. They'll be held in conjunction with a new event, the National Property Ball at the Cordis Hotel in Auckland on Tuesday 22 October.

We've already booked some top entertainment with a sumptuous three-course dinner, and planning is well advanced to ensure that this event cements itself as the premiere property celebration on the calendar.

We'll be opening registrations soon for this top-class fun evening, and later in the year we'll be calling for nominations for our refreshed New Zealand Property Professional Awards. These awards have not only had a name change, but will also feature a couple of new categories – so watch this space.

We'll be offering plenty of time to think about your entries for these prestigious awards, and we expect these will be hotly contested and sought after. There'll also be a number of sponsorship opportunities and if you're keen to explore these feel free to drop Rebecca van Etten a line (rebecca@property.org.nz).

Of course, none of this will affect our annual Fellowship and Life Member processes which are currently underway. Our branches have been considering potential Fellowship candidates and the recipients will be announced at our online Annual General Meetings on 30 July. We'll then get to celebrate with them personally at the National Property Ball.

In recent years our online AGMs have been very successful, generating more engagement and participation from members who might not be able to attend a face-to-face event.

We understand that time out from your work is precious. It's one of the reasons we've adopted this new programme, so that members still have the opportunity to connect face-to-face with colleagues closer to home, for less cost and greater convenience.

In recent years our online AGMs have been very successful.

Alongside this comprehensive in-person calendar of events, we are also maintaining the momentum with our busy schedule of webinars. There were six in February alone. We get great feedback about our online seminars, which allows equal opportunity of access to all members from the far north to the deep south.

2023 saw the Institute complete its comprehensive rules and by-laws review and a new Constitution to facilitate the PINZ National and Membership Strategies, as well as ensure compliance with the new Incorporated Societies Act 2022.

Work on developing the policies to support the Constitution is underway and we will be coming out to members for feedback on the first of these policies shortly. When the policy work is complete, PINZ will re-register as an Incorporated Society with the New Zealand Companies Office and begin operating under its new suite of governing documents.

Lastly, I want to thank all the members who've been attending our branch AGM season. Our strong branch network is what helps differentiate our organisation from others. They are the driving force behind our programme, giving PINZ and NZIV a unique connection to the grassroot property professionals who are working at the frontline every day.

Our strong branch network is what helps differentiate our organisation from others.

If you think it's time to give something back to your profession, I'd urge you to consider standing for your Branch Committee and having a say in the future.

Member comments and feedback are always appreciated and my door is always open for anyone wishing to raise any issues (v.gurrey@property.org.nz).

Finally, I want to wish all our readers and supporters the absolute best in 2024. We remain committed to our 'members first agenda' and supporting our strategy of constant improvement in everything we do.

Property in 2024 promises to be an exciting and dynamic part of our economy and we are determined to ensure our members have every competitive advantage

Viv Gurrey
Chief Executive Officer
Property Institute of New Zealand

National Property Ball 2024

A brand new event on the property industry calendar, and the Institute's premier social, networking and celebratory event of the year!

Tues 22nd October, Cordis Hotel, Auckland

Enjoy a sumptuous dinner, entertainment, and celebrate the incredible careers of **NZ Property Professional Awards** winners.

Save the date - more infomation, registration and table bookings for this great night out coming soon!

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CLIMATE RISK

WINDS OF CHANGE – REFLECTIONS ON THE IMPACT OF CYCLONE GABRIELLE

PROFESSOR JOHN TOOKEY

Cyclone Gabrielle caused huge damage to the country. In addition to destroyed and disrupted infrastructure it also raised some big questions for the future. How do we future-proof? What do we prioritise? What should our policy be going forward? This article examines the issues and context around climate response and its impact on the property sector in the light of a new government seeking a way ahead.

Multiple impacts

Cyclone Gabrielle caused chaos last year. Repairs and reinstatements have taken substantial time and resources countrywide. Tens of millions of dollars over and above normal expenditures have had to be found. Bridges have needed to be re-built and roads re-laid.

Hawke's Bay, northwest Auckland and the Coromandel all bear scars on the landscape to this day. The good news is that most initial repairs are now fully complete – or as least as far as they can be. The bad news is that the reinstated infrastructure is just as vulnerable post-repair as it was before Gabrielle. As we consider the future of properties at risk, particularly in flood zones, we have to ask the question as to whether reinstating infrastructure 'as good as old' is the best approach for a resilient future.

Gabrielle has been a watershed moment in New Zealand. Simultaneously it demonstrated our utter dependence on horizontal infrastructure (roads, bridges, power grid etc), and how tenuous and potentially damage-prone it is.

Gabrielle also showed our flaws in planning and consenting processes. Especially in Auckland we have a history of developing new housing on flood-prone areas. Our peripheral expansion strategy is very often within areas that are more marginal and potentially in flood zones such as West Auckland.

Indeed, the extreme flooding events had been happening for several years before Gabrielle. A year post-Gabrielle, we need to look to the future of climate risk, policy creation and infrastructural investment. Yet the future direction seems unclear.

The bad news is that the reinstated infrastructure is just as vulnerable post-repair as it was before Gabrielle.

Clear policy directions needed

The general zeitgeist in society is in tune with the green agenda. Similarly, all sides in Parliament are on board with climate action. Both the previous National Government and the departing Labour Government have taken their share of driving national policy in this regard.

Both the previous and incoming governments have stated their concerns over future climate impacts. Yet climate-based risk and related infrastructure investment were comparatively minor themes in the various election debates of 2023.

However, serious long-term questions need to be asked, particularly in the context of how property valuations and pricing are likely to be impacted. More pertinently, how can investments be protected within the context of how infrastructure can be procured? Will it be even possible to insure some properties in the future – and does that matter?

What this comes down to is getting our decision-makers to be a little more upfront with what is at stake. One key question is how frequently are we likely to have to deal with the costs and chaos of another Gabrielle?

The vagaries of climate modelling and the key assumptions adopted have led to debate around this issue by some. The emotions aroused amongst climate activists have led to accusations of 'heresy' by those who question any aspect of it (see www.scientificamerican.com/article/climate-heretic/). The febrile atmosphere around the issue is palpable.

But irrespective of any debate, if we accept climate change is a fact:

- How should we respond to the emergent climate risks?
- What are our priorities?
- How should we sequence our responses?
- How will we ultimately pay for these measures, given that many of the policies likely to be adopted will significantly curtail economic activity?

All liabilities, no commitments

Back in October 2016, then Environment Minister Paula Bennett announced the ratification of the Paris Climate Accord. This set New Zealand on a track to fulfilling our international responsibilities and commitments related to climate change. On the one hand, it was a reasonably pragmatic decision to maintain ongoing trading relations with the wider world. On the other, it committed New Zealand to very wide-ranging cuts in greenhouse gas emissions.

New Zealand suffers from the tyranny of distance. It is a relatively small economy and population spread over a comparatively large area, geographically remote from the rest of the world. Hydrocarbon fuels for domestic and international transportation are disproportionately high compared to our competitors' energy for industrial processing (such as for making milk powder). We also have an ongoing need to reduce methane emissions – who can forget the problem of Kiwi cow burps? Our demands for energy are not quite as clean and green and we think.

All these issues would inevitably create significant disruption to the New Zealand economy. Within the domain of property and construction, new regulations were similarly inevitable. There are increased standards around many aspects, including insulation, the thermal performance of HVAC systems, double and triple glazing and so on. But the property sector, along with its drive for investment, is utterly dependent on the infrastructure put in place by central government and councils.

So where can the property sector ultimately go in this evolving environment? Jacinda Ardern's incoming government subsequently took over at the helm in 2017. In 2020, the Paris Treaty came into effect as legally enforceable in New Zealand. Therefore, fundamentally, the commitment to addressing climate change is a point of agreement across the political spectrum.

Thereafter, the Ardern government produced the *Adapt and Thrive* comprehensive adaptation plan in August 2022. Yet few in the general public are aware of it. The document was under-reported both at the time and since. But *Adapt and Thrive* is highly significant since it is still in effect the 'Big Plan' that New Zealand has in place and defines what will and won't occur as we respond to climate change.

A hill to climb

So what has been committed to? *Adapt and Thrive* proposes multiple strategies, including 'Avoid, Protect, Accommodate, Retreat'. The policy documentation has immense implications for planning, legislation and finances.

As far as the world of property is concerned the implications are huge. 'Managed retreat' from flood-prone areas is a central aspect of the policy proposed. The investment in new housing, infrastructure designed to protect at-risk communities, as well as servicing re-sited communities, will be spectacularly expensive.

The report indicates that 300,000 dwellings will be directly affected. A least $100 billion has been flagged as the value of property directly at risk, along with 72,000 New Zealanders in the path of storm surges etc.

Our infrastructural planning, investments and commitments are vague.

Fundamentally, we need to decide to what degree we wish to ameliorate the effects of climate change. Having ratified the Paris Climate Accord, cuts to our emissions are legally enforceable and time-bound. However, our infrastructural planning, investments and commitments are vague.

If this is a national priority, then planning, budgeting and sequencing needs to be committed to. But you can't have it both ways. You can't say climate change is definitely going to happen and present an existential threat to the nation and then not define what you are going to actually do about it.

If as a nation we are to address climate-driven risks in New Zealand, literally hundreds of billions of dollars will need to be committed over an extended, multi-decade, integrated programme of planning, compulsory purchase and infrastructure construction. Even spread out over decades, the expenditure needs budgeting. But is this policy going to be retained as is by the new government?

Adapt and Thrive is positioned in such a way as to make its continuation questionable under the new government. Differential treatment of socio-economic and stakeholder groups around compensation during 'managed retreat' will be particularly problematic.

Adapt and Thrive proposes 100% RV compensation for owner-occupiers, but just 50% compensation for businesses and rental property owners, with zero compensation for bach/second home owners. Reading the document gives the impression of activists writing the policy. It certainly does not reflect reality or political compromise.

Inevitably, re-sited communities' resilience in jobs, economic activity and housing provision will become contentious. Consider from the property perspective the degree of incentive or disincentive likely to be created by a policy of partial or zero compensation for investors. The word 'sub-optimal' doesn't come close.

Inward investment to potentially affected communities will likely collapse, and the outward flow of capital would rapidly become a torrent. Rapid depopulation of affected districts would become a very real possibility – putting further pressure on 'safe' zones.

Adapt and Thrive also proposes limiting of rights of appeal for affected communities. However, the extensive processes involved make it hard to imagine the right to appeal being entirely quashed. Inevitably, the process of planning, financial commitments and appeals will be drawn out. To say that *Adapt and Thrive* will be challenging to operationalise is an understatement.

Making the call

If policy is going to be reconsidered, so be it. Nationally we have pressing infrastructural investment needs to facilitate our continued growth and sustainability. The planning and procurement needed to implement such a policy is time-consuming and costly. Irrespective of one's political perspective there is an absolute need to prioritise infrastructural investments.

Saying what we are not going to invest in is one thing, but what we are going to do is quite another. The property sector will be critically affected and needs to prepare accordingly. Given the huge financial consequences and inevitable trade-offs in social programmes, education, defence budgets and so on, a timeframe for decision-making is essential. Failure to do so will inhibit future investment, growth and housing provision, and impact cost-effectiveness, as well as compromise the sustainability of our current communities.

> **Cyclone Gabrielle has certainly delivered a monumental wake-up call throughout New Zealand.**

Cyclone Gabrielle has certainly delivered a monumental wake-up call throughout New Zealand. New realities are evident. Now new thinking is critically required

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HOW TECHNOLOGY IS AFFECTING THE PROPERTY MARKET

VAUGHAN WILSON

Technology is all around us. It is continuing to evolve and morph into industries that previously were impervious to massive technological changes and only benefited from the advent of computers and the like. Today no industry, including the property industry, is immune from the relentless advance in technology and the significant changes these improvements will make in successive decades.

Pace of change

'My father was born shortly after the Wright Brothers. He could barely believe that I went to the moon. But my son, Tom, was five and he didn't think it was any big deal.'

Charlie Duke, Lunar Module pilot of Apollo 16 in 1972
– from film *In the Shadow of the Moon*

Technological advances in a host of areas are starting to make impacts in the property industry not foreseen a decade ago.

Charles Duke's father witnessed his son walking on the moon and was astounded given he was born in 1904, a year after the Wright Brothers took their inaugural flight. An incredible leap in technology in just under 70 years.

Some mathematical comparisons were carried out for the 50th anniversary of the first landing of the moon in 1969 by Neil Armstrong and Buzz Aldrin. The current Apple iPhone is estimated to be over 100,000 times more powerful than the computers on the Lunar Module craft that landed the two astronauts on the moon's surface, as well as significantly smaller and lighter.

Today most of us have a smart phone, at least one computer, and for many our cars have numerous computers capable of massive levels of computation. Some of us own a fridge that can email the grocery store when the milk is running low, or a lawnmower than mows by itself and returns to its charger when power is running low.

For over 100 years, technology has been a large part of many industries. Think of the improvements in the vehicle and aeroplane industries, pharmacology and many others. But for property, a literal brick and mortar industry, technology has been slower to come to the fore. The tech has been more focused on security, energy management, tenancy management and in the design of building materials and buildings themselves.

But technological advances in a host of areas are starting to make impacts in the property industry not foreseen a decade ago. Technology will affect the design of buildings, the number of buildings required by certain industries, the way infrastructure affects buildings, the environment and staff numbers employed in the industry. Four examples of technologies that will impact the property industry follow.

Artificial intelligence (AI)

AI has been in the media almost continuously since the 2022 launch of ChatGPT, an online AI provider owned by Open AI. ChatGPT is a chatbot tool that uses generative AI (GAI) and reviews various sources of existing online text to produce new content. This has led to the ChatGPT tool and other competitors' tools being used to speed up writing tasks, support brainstorming and improve customer service.

At least one of New Zealand's largest corporates, with over 3,000 property leases, is using AI to review every lease and highlight key tenure points and raise issues.

AI is being used appropriately and inappropriately for a range of uses and the extent of its use is only just beginning. Since its inception, it wasn't long before AI was being used by students to cheat in tests and generate fake photographs. But AI can be used for good as well as evil. At least one of New Zealand's largest corporates, with over 3,000 property leases, is using AI to review every lease and highlight key tenure points and raise issues based on key word identification.

Applying AI in this way will not only minimise human input to review and manage tenure, reducing costs and improving timelines, but it should also improve accuracy. This could have significant cost and efficiency advantages for property managers who are often managing bespoke leasing conditions with a large number of tenants. Think of large shopping malls, corporate property investors, network infrastructure owners (electricity, mobile phone, phone exchanges etc), and Crown property ownership such as the Ministry of Education (there are over 2,500 schools in New Zealand).

Up until now each of these large-scale portfolios was managed in a computer database, largely reliant on human input and a human review of tenure. Now, by using AI, the tenure can not only be reviewed, but it can be automatically populated into the database using the same AI. Genius.

Errors could of course creep in, and the AI may misunderstand text and provide an incorrect outcome. But given the rigid and uniform structure of tenure documents and their nomenclature, there is a good chance that AI can get it right most of the time.

Autonomous vehicles (AV)

Most vehicle manufacturers, such as Hyundai with their subsidiary Motional, are working on AV programmes. Other corporates not usually associated with motor vehicles also have an AV programme, such as Google (using the subsidiary name Waymo), Cruise (owned 80% by GM) and Apple. The development is often in sync with electric vehicle development, as found in Teslas.

There are six levels of AV:

- **Level 0 (No Driving Automation)** – typical vehicle from the last century
- **Level 1 (Driver Assistance)** – minimal assistance from the vehicle, such as cruise control
- **Level 2 (Partial Driving Automation)** – current mainstream modern vehicle, which can autonomously brake or steer if the vehicle detects an accident is imminent
- **Level 3 (Conditional Driving Automation)** – vehicle can perform most driving tasks, but requires some human intervention (e.g. Tesla)
- **Level 4 (High Driving Automation)** – requires geofencing to provide technical connectivity, but vehicle can perform driving duties unassisted and human override is still possible
- **Level 5 (Full Driving Automation)** – vehicle can perform all driving without any human intervention.

The alternative public transport that AVs provide avoids the expensive capital infrastructure projects needed to create networks such as light rail.

There are legal and physical constraints that currently apply to Level 5 and legal cases have been brought against companies like Tesla for accidents leading to death and injury under Level 3. Technical issues still exist, such as AVs identifying different coloured vehicles during periods of sunlight (e.g. white vehicles being overlooked). Other issues include ethics and risk assessment, such as whether the AV should avoid an accident by diverting itself away from another vehicle, but in doing so cause a second accident with a pedestrian on a footpath.

Many of these features benefit the motorist. For instance, in a Tesla a driver can focus on other things like watching TV or reading a book. Once Level 5 vehicles are fully tested and are able to operate on public roads, this technology (along with some clever algorithms) could drastically change public transport across the world.

Recent discussions and studies in Wellington and Auckland called for light rail, which has been now put on hold. Issues with light rail include:

- Significant cost of construction
- Problems with resilience during and after a significant seismic event
- Corridor width in existing roading – this means to retain roading for use by cars and bicycles, as well as installing light rail, would often require significant public works acquisition of properties. This would drastically affect the landscape and reduce the value of large tracts of all types of property (commercial, residential, retail and industrial)
- Light rail can only go from A to B (in other words a main arterial route or routes), and customers would still need to connect to other forms of transport to get from the light rail stations to their final destination and back again.

Mass amounts of Level 5 AVs could operate as a cohesive public transport system, picking up and dropping off people at any location without the need to widen road corridors, expensive construction of infrastructure and concerns about seismic risk. Most (if not all) AVs are expected to be electric, so a more intensive charging network would be required, spread out across the map. Reducing large bus use on routes when only a few passengers require the service would also reduce pollution and road wear.

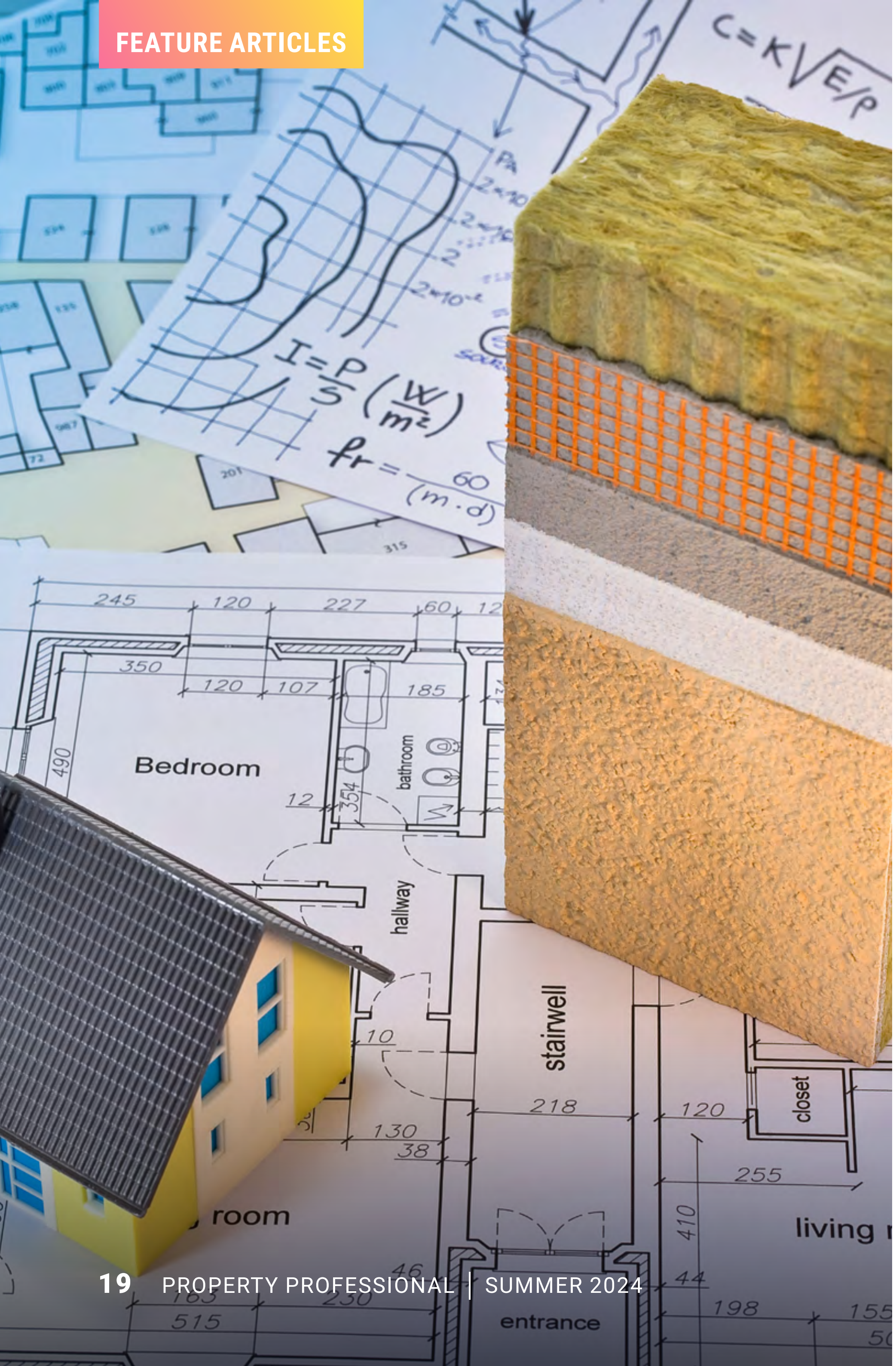
No drivers means no wages, resulting in lower costs. Clever algorithms mean a robotaxi (as they are known in the US) could pick up and drop people off as it moved through its route to a destination, effectively a miniature bus but on a bespoke route. This would result in bus routes that are customised, just like a taxi is today, but endlessly dropping off and picking up customers and tracked in real time. The design of robotaxis will change over time, meaning they will be more bus-like in their seating layout too. Other property needs apart from charging would be layby areas for these robotaxis to park up when not in use to avoid clogging up roads.

Robotaxis are currently being tested in San Francisco, Phoenix and Austin, all tech-savvy cities. It is possible to hail a robotaxi in these three cities. Las Vegas has also done a lot of testing of these vehicles, but with a driver in the front seat in case there are issues. The robotaxi company Cruise is planning to test in 14 new cities across the US.

There are concerns from politicians, city officials and the general public, but the status quo also does not work. In 2022, the road toll in the US was almost 43,000 and for New Zealand 375 (interestingly per head of population our rate is much lower). A robotaxi doesn’t drive drunk, get tired and is programmed to obey the road rules. Could this mean a reduction in road deaths and injuries?

AVs en masse, such as robotaxis, will have impacts on property. Whether it is the reduction in private car ownership changing house designs, or a reduction in conventional public transport allowing for the removal of bus stops, bus terminals, and possibly avoiding traffic congestion with large vehicles.

But it is the changes that will be avoided that are greater. The alternative public transport that AVs provide avoids the expensive capital infrastructure projects needed to create networks such as light rail. This then avoids the needs for authorities to purchase property and convert it to wider road corridors. This avoidance frees up large stretches of land for further and future development, particularly densification and gentrification on major arterial routes.



Passive house technology and non-residential buildings

A year ago, I wrote in this magazine (Summer 2023) about passive houses and how the technology could become more mainstream. Just a year later I have seen a steady expansion in the number of houses built this way, with many more planned, even with the general downturn in the residential market.

Green buildings for commercial use have been around for over 20 years in New Zealand but are typically larger office buildings. Smaller non-residential buildings overseas are starting to be developed that take a green building view of the world but use the cheaper passive house method to attain a stable, warm and cost-effective environment.

Around the world, passive house design and principles have been adopted for industrial-type designs, where the vehicle movement section of the building is typically not passive but the administrative section is. Some of these include fire stations, such as the large station in Germany in Heidelberg and Wolfurt and in Vancouver in Canada.

Retail operators are also adopting passive house principles. The first passive supermarket was opened in Ireland in 2008 called a Tesco Eco-Store. Supermarkets traditionally have a high energy use due to the HVAC of large, high stud buildings and the refrigeration of foodstuffs. Since then, numerous passive house designed supermarkets have been developed, mostly in Germany and Austria, with more on the way.

Other non-residential uses for passive house design include office buildings, schools, universities, day care centres, medical centres,

The advancement of passive house principles and design in non-residential property types provides organisations with the opportunity to use these environmentally-friendly options.

churches, factories, swimming pools, libraries and museums. Locations include Austria, Germany, Denmark, China, France, Japan and Spain. Most are new buildings, but retrofitting has occurred with all the building types listed above.

This adoption of passive house principles can, of course, make the initial cost of construction higher. But the ongoing operational expenses, such as lower energy costs over time, should achieve a modest payback on the additional initial investment.

Government organisations and private industry are also aware of the advantages of passive house environments benefiting staff and visitors to passive buildings. These organisations can, of course, boast about their green credentials when occupying passive-type buildings, furthering their Environmental, Social and Governance (ESG) principles and practices.

The advancement of passive house principles and design in non-residential property types provides organisations with the opportunity to use these environmentally-friendly options in their corporate property strategy.

Pushing the envelope

Technology never rests, it is never dormant, and there are always people and organisations who relish new opportunities to improve and push the envelope. Some of these require central or local government support to implement, some happen by the sheer weight of public demand and private capital, and some happen organically over time. New technology that will change the face of commercial property is on the horizon in levels we have not seen since the re-discovery of concrete as a building material in 1414

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UNLEASHING THE POTENTIAL OF ChatGPT IN PROPERTY VALUATION REPORTS

Red Book compliance Chain-of-Thought (CoT) prompt engineering

WILLIAM CHEUNG

This article explores the transformative capabilities of Large Language Models (LLMs) like ChatGPT within the property valuation industry.

Revolutionary potential

The Royal Institution of Chartered Surveyors (RICS) Valuation – Global Standards, known as the RICS Red Book Global Standards, underline the pivotal role of 'consistency, objectivity and transparency' in cultivating public confidence and trust in property valuation.

This article explores the revolutionary potential of generative artificial intelligence (GAI), particularly ChatGPT, in helping valuers generate valuation reports in compliance with globally acclaimed standards, while delivering clear and decisive value assessments to stakeholders. The advent of GAI technology has enabled transformative shifts across diverse sectors, including property valuation and related research.

ChatGPT, a cutting-edge LLM capable of producing human-like responses, has gained significant traction as a valuable tool for businesses pursuing efficient and cost-effective solutions. It is possible to envisage a future where intricate tasks (such as drafting conveyancing contracts, formulating valuation reports, developing property listings and offering investment advice) would integrate seamlessly into a streamlined automated process.

Until now, the high costs associated with training the LLM (the underpinning foundation of ChatGPT) have posed a considerable obstacle for many researchers looking to adopt this technology. Fortunately, the emergence of ChatGPT has overcome these hurdles, making LLMs more affordable and accessible. With the cost barrier surmounted, the focus can be shifted to a crucial element of employing this groundbreaking technology – prompt engineering steered by a Red Book inspired framework in harmony with Global Standards.

> **ChatGPT has gained significant traction as a valuable tool for businesses pursuing efficient and cost-effective solutions.**

There is an extraordinary potential for ChatGPT to unveil novel opportunities for property valuation, equipping valuers to develop consistent, objective and transparent reports adhering to the highest professional standards. By strategically leveraging ChatGPT's capabilities through meticulous prompt engineering, valuers can amplify their power to refine the valuation process and reinvent industry practices.

What follows is an examination of the core principles of prompt engineering, illustrating its alignment with the Red Book Global Standards in tandem with the appropriate national supplement (if any) to demonstrate practical applications that underscore the considerable potential of ChatGPT in property valuation. With this groundbreaking exploration, my objective is to enrich the scholarly discussion on applying advanced GAI technologies in property valuation, enabling professionals to navigate the ever-changing landscape, which enhances confidence and trust among valuation users.

Prompt engineering

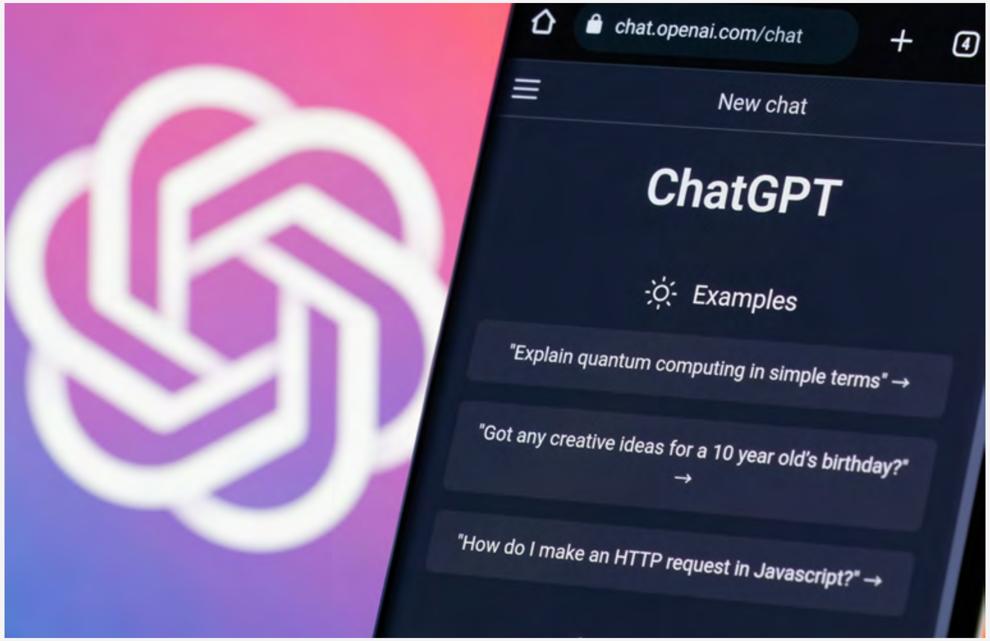
At its core prompt engineering is the practice of designing or fine-tuning prompts to elicit desired outputs or behaviours from LLM. This involves crafting concise instructions, queries or input formats that stimulate meaningful responses from the GAI model. This methodology is critical, as language models necessitate clear instructions to generate accurate, relevant and contextually appropriate outputs. Prompt engineering not only steers the model's behaviour, but also enhances response quality and heightens the probability of achieving the intended results.

An interesting parallel can be drawn between prompt engineering and the guidelines put forth in the RICS Red Book. The Red Book furnishes a standardised framework for property valuation, ensuring valuers adhere to uniform methodologies, principles and reporting standards that foster reliability and uphold ethical practices. Prompt engineering also provides a structured blueprint for language models, establishing guidelines and techniques for crafting prompts that yield the desired outputs.

By wielding the power of ChatGPT or other GAI models with a CoT prompting strategy, property valuers can expedite their workflows while adhering to the Red Book's esteemed three pillars of consistency, objectivity and transparency.

Consistency

Consistency is a key tenet in property valuation, as it engenders uniformity and comparability across different valuations. The RICS Red Book Global Standards endorse the use of uniform



methodologies, procedures and reporting formats to instil faith and confidence in the valuation process. In the era of GAI models, valuers have a unique opportunity to assume the mantle of 'prompt engineers', steering GAI models to yield valuation outputs that are not only consistent but also dependable. By meticulously formulating precise prompts that encapsulate each valuation's specific context and requirements, valuers can contribute to the overall uniformity and interpretability of AI-generated reports.

In traditional property valuation approaches valuers largely depended on their expertise and professional judgement, often leading to valuation outcome variations. However, the advent of

GAI technology allows valuers to standardise the valuation process by providing detailed prompts that encompass standardised measurements, reasonable assumptions and alignment with the valuation's intended purpose. For instance, GAI models can ensure the integration of international property measurement standards, facilitating consistent comparisons across valuations conducted in different countries or cities.

To underscore the importance of consistency, it is worth noting the divergences often found in the application of valuation models by external and internal valuers. These discrepancies frequently arise from inconsistencies in assumptions regarding critical input variables (such as net yield, discount rate and gross exit yield). Such inconsistencies underline the urgent need for enhanced valuation regulations and the uniform discounted cash flow (DCF) model application.

By integrating prescribed elements valuers can establish a more standardised approach to property valuation.

By integrating prescribed elements (such as detailed explanations of assumptions within GAI prompts, stipulated risk-free rates, flexible inflation scenarios and transparent methodologies for discounting cash flows and determining the end value) valuers can establish a more standardised approach to property valuation.

Objectivity

A bedrock of the valuation process, objectivity is underscored by the RICS Red Book Global Standards. These standards espouse the need for valuers to approach their tasks with unfaltering impartiality, free from bias or conflicts of interest. The Red Book emphasises that judgements and conclusions should be rooted in reliable evidence and objective criteria, which safeguards the fairness and integrity of valuation practices.

Valuers are tasked with exercising professional judgement and adhering to recognised valuation methodologies, which uphold objectivity throughout the process. To further bolster this principle of objectivity, the field of GAI technology (with its potential for prompt engineering) presents a transformative tool.

Objectivity is most explicitly demonstrated in the selection of direct comparables, a pivotal aspect of property valuation. Traditionally, valuers have depended on their expertise and professional judgement to select comparables based on objective criteria (such as location, size, type and condition). By integrating prompt engineering in GAI technology, valuers can deliver precise instructions to GAI models, ensuring the selection of comparables strictly adheres to these objective criteria.

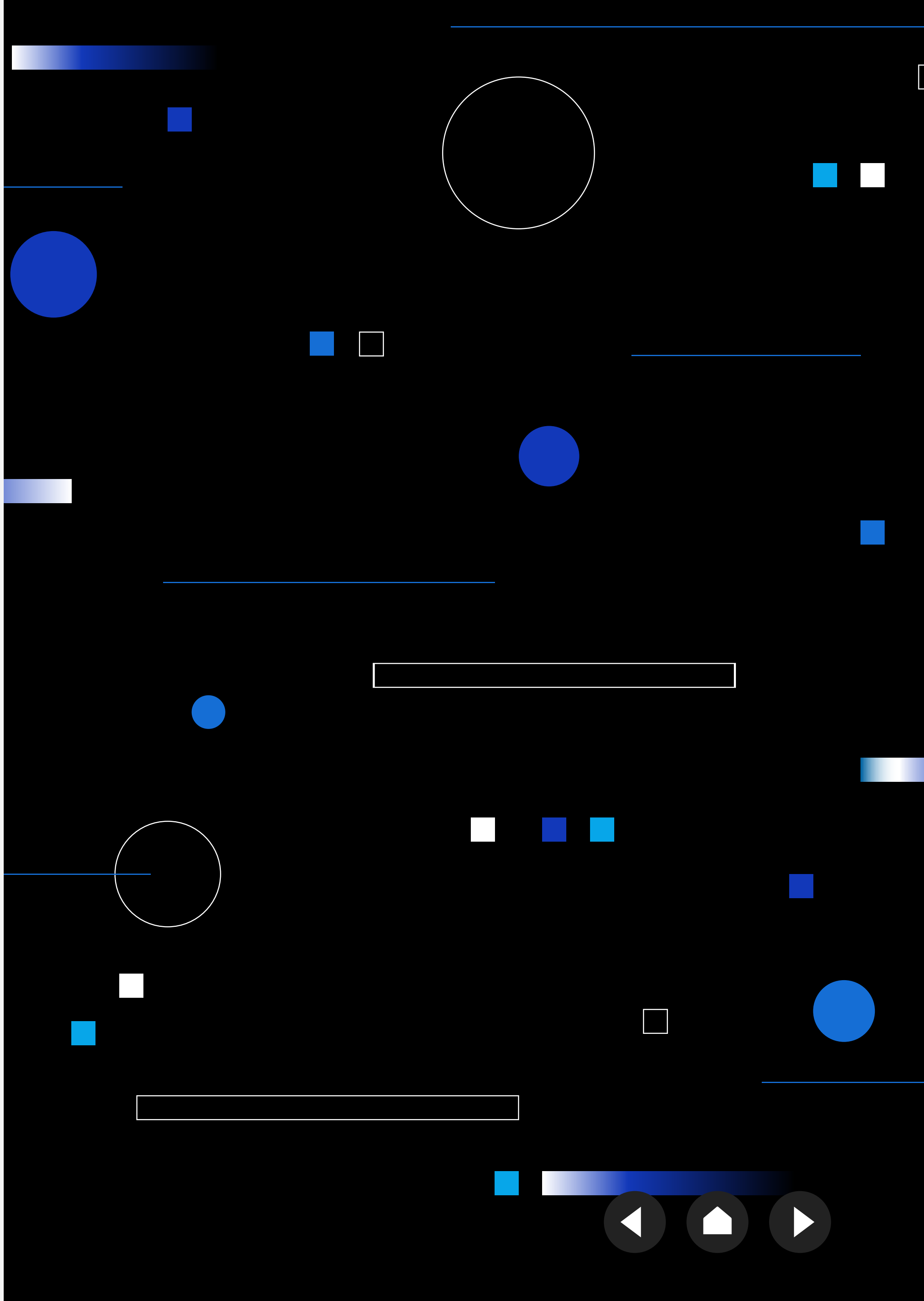
The amalgamation of prompt engineering and GAI is in harmony with the principles of objectivity championed by the Red Book Global Standards. It promotes consistency and unbiased comparisons, which contributes to the credibility and reliability of property valuation by instituting a structured approach. This enables valuers to generate valuation reports anchored in objective criteria. By harnessing prompt engineering, valuers can mitigate the influence of personal and organisational factors, which safeguards the integrity of the valuation process.

Transparency

Transparency is vital in promoting accountability and public trust within the property valuation industry. The Red Book Global Standards underscore the importance of transparent valuation processes and reporting. Valuers are expected to effectively communicate the scope, objectives and findings of their valuation reports, ensuring that stakeholders are privy to essential information.

Transparent reporting enables informed decision-making and promotes effective oversight and scrutiny of public resources. In the context of GAI models, valuers can employ a programmable CoT prompt with version control specified in each valuation prompt, which enhances transparency. This practice ensures the reproducibility of CoT prompts and valuation reports.

By clearly stating the LLM employed (for instance, 'text-davinci-003' in the case of the free OpenAI ChatGPT LLM model), and the parameter settings for each valuation, alignment between



GAI models and professional standards in the property valuation industry is maintained.

Moreover, the incorporation of blockchain technology can significantly bolster transparency. Owing to its decentralised and immutable characteristics, blockchain offers a secure platform for documenting various valuation processes in ChatGPT, encompassing the CoT prompting steps and their respective outputs. The current iteration of ChatGPT, which is freely available, features a function for exporting conversations as records. Logging these conversations on a blockchain will establish a transparent, traceable archive accessible to clients, which fosters accountability and instils trust in AI-generated valuation reports.

Factors influencing prompt design

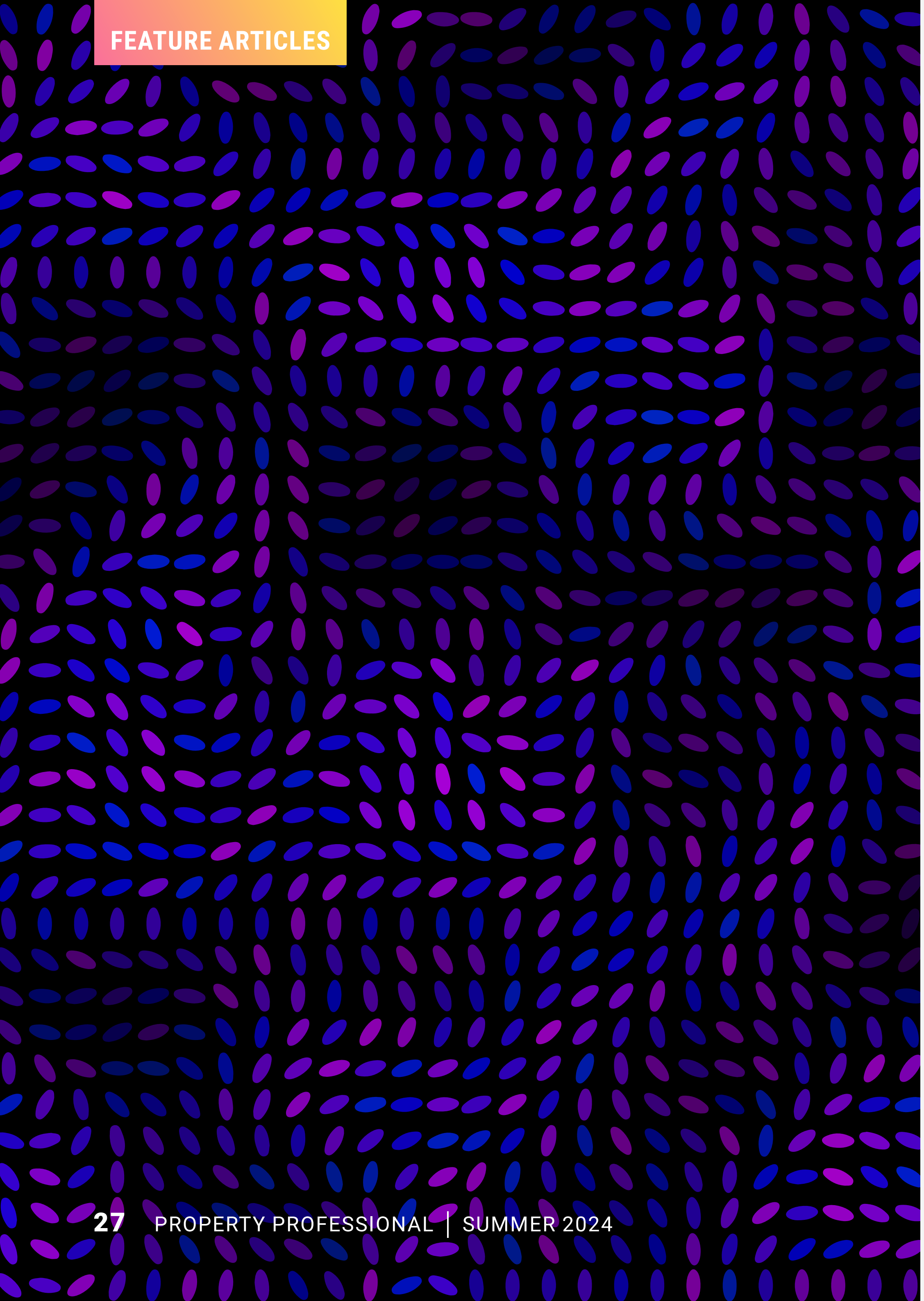
The selection of an appropriate prompt within the valuation process is influenced by several variables, each of which contributes to the overall efficacy of the generated output. First, a comprehensive understanding of the client's objectives and desired output is indispensable. Valuers can ensure that the AI-generated valuation report aligns with the client's specific goals by crafting the prompt to reflect these expectations, while concurrently adhering to Red Book standards. The intended purpose of the interaction, be it information retrieval, content generation or problem-solving, should be factored into the design of the prompt.

Second, valuers must understand the capabilities and limitations of GAI models (such as ChatGPT). Being cognisant of the model's strengths and weaknesses permits valuers to leverage its capabilities while effectively mitigating potential shortcomings. Acknowledging that even advanced models like ChatGPT may face difficulties with certain tasks or occasionally generate inaccurate information is crucial. Thus, valuers effectively act as auditors for ChatGPT, playing a pivotal role in ensuring the accuracy and reliability of the generated outputs.

The importance of domain-specific vocabulary and context in prompt design cannot be overstated within specialised domains (such as property valuation). By integrating these elements, valuers can guide the GAI model towards delivering more precise and contextually relevant responses.

It is worth mentioning that CoT prompts could potentially be patented or copyrighted by valuation firms in the future, implying that accessing signed valuation reports may necessitate a subscription or fee. To guarantee clarity and precision in prompt design, prompts

Valuers can ensure that the AI-generated valuation report aligns with the client's specific goals by crafting the prompt to reflect these expectations.



must be formulated clearly and specifically. Any ambiguity can result in sub-optimal responses. Clear instructions, exact questions and adequate context are instrumental in minimising ambiguity. Adopting a standardised set of questions akin to those prescribed by the International Valuation Standards (IVS) and specifically designed for prompt engineering can further enhance clarity and precision in prompt design.

When considering constraints, it is necessary to determine if any limitations (such as response length or format) need to be imposed to achieve the desired output. Clearly delineating such constraints assists the model in generating responses that meet specific criteria, like character limits or structured formats. Nevertheless, it is noteworthy that advancements in GAI models, exemplified by Anthropic's Claude AI, offer larger context windows that may alleviate concerns related to constraints. Emerging developments in the market may yield additional solutions to surmount these limitations.

The horizon ahead for GAI-enabled valuation

As we venture into the future of property valuation, integrating LLMs is poised to catalyse a transformative revolution within the industry. In tandem with LLMs, valuers stand ready to refine their prompt engineering techniques, harnessing their industry expertise to extract precise and contextually relevant information.

The prospect of valuers training their unique GAI models, tailored to their individual writing styles and presentation formats, provides a potent tool for improving the accuracy and efficiency

The symbiotic partnership between valuers and GAI should be steered by a steadfast commitment to professional integrity.

of property valuations. By leveraging machine learning techniques, valuers can enable their GAI counterparts to learn from their distinct expertise and decision-making processes.

This personalised approach encapsulates the intricacies of individual valuers' professional judgement, ensuring that AI-generated valuation reports closely mirror their preferred methodologies and uphold industry standards. Fine-tuning these models with domain-specific data, market trends, property characteristics and regional considerations allows for producing customised and relevant valuation reports.

Nonetheless, it is vital to acknowledge that this transformative journey necessitates thoughtful consideration of ethical guidelines and professional standards. As valuers harness the power of GAI, maintaining accountability and strict adherence to industry regulations remains paramount. The symbiotic partnership between valuers and GAI should be steered by a steadfast commitment to professional integrity, ensuring that GAI models are deployed to supplement valuers' expertise rather than supplant human judgement.

The future of GAI-empowered valuation resides in the harmonious synergy between valuers and LLMs. It is a future of collaboration, customisation and mindful consideration of ethical standards – a future where valuers take the helm in tailoring GAI technology to augment their expertise and produce more consistent, objective and transparent valuation reports

Note: This article is a revised version of a July 2023 article written by William Cheung for the *Journal of Property Investment & Finance* (see https://doi.org/10.1108/JPIF-06-2023-0053).

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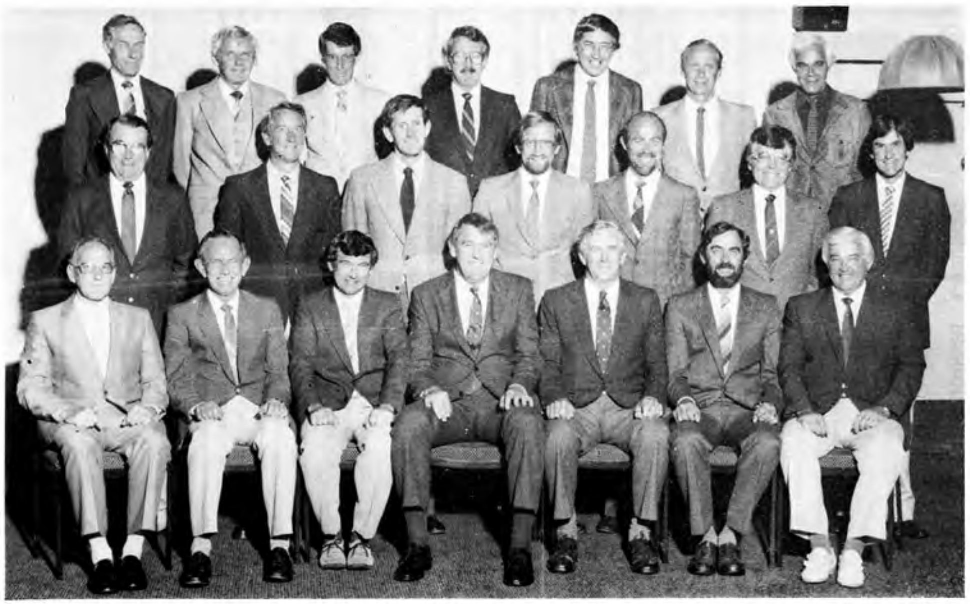
FROM THE PAST

From the past is a series of valuer-related clippings and images from the Institute's library curated by former NZIV Councillor Peter Ward. This section aims to demonstrate the long rich history of NZIV and help inform members about how the Institute became what it is today.



COUNCILLORS PHOTOGRAPH 1985 — PALMERSTON NORTH

I. W. Lyall, G. T. Foster, M. E. Gamby, A. P. Laing, K. E. Parker, A. G. Johnson, J. W. Briscoe, A. L. McAlister, J. N. B. Wall, R. V. Hargreaves, D. B. Lugton, W. A. F. Burgess, K. J. Cooper, G. Kirkcaldie, R. L. Jefferies (Junior Vice-President), R. M. McGough, K. M. Allan, G. J. Horsley (President), R. M. Donaldson, R. E. Hallinan (Senior Vice-President), W. A. Cleghorn. Absent: R. J. Maclachlan.

Editorial Comment

THOU SHALT NOT ADVERTISE

The Eleventh Commandment of Professional Organisations

The Institute ethics clearly state at Clause 23:

"The solicitation of professional work by such means as personal canvass, circular, advertising in directories, year books, or the public press (except by means of a professional card) or by use of radio or television or the exhibition of unduly large name-plates or painted or illuminated signs, is forbidden".

Government action in the recent past has forced all professional groups to examine their restrictive trade practice in this regard. All have opted for Society or Institute advertising if for no other reason than; "If we don't do it then our members will demand the right to do it themselves."

The Publicity and Public Relations Committee (see open letter in this issue) has your Institute's approval to spend $50,000 between June and December this year on what can best be described as "identity advertising". This action will have its critics, but in truth the amount is very small in advertising terms, possibly insignificant as a promotional exercise, is long overdue, and does no more than scratch the surface of this important issue.

Many of our members provide the minimum of professional service in the belief that they have found their professional niche, protected by legislation and Institute restrictive practices. It is these very members who cry wolf when any attack on their territory is mounted by another professional or non-professional organisation. Although the parallel may be unpalatable; war is not willingly waged against a strong adversary.

Your Institute and its members do not require and should no longer court the protection offered by legislation. Our educational qualifications are very high by world standards, and your Institute is sufficiently strong to satisfy the most searching enquiry as to professional ability both internally and internationally. We must learn to go it alone; face competition and as our appointed advertising agent recommends, convince the public that we are "The Valuers".

Some members would like to advertise on their own behalf now. Should they not be entitled to promote their abilities? The relative ease with which the hallowed fee scale was demolished should at least in part convince us all that many of our entrenched attitudes are just that, "entrenched attitudes".

Advertising! Who among us does not advertise? All public valuers advertise. Some by the quality of their report, others by client contact, some by reputation, others by speed of service. Valuers now appreciate that advertising is necessary for their continued survival, not only in competition with one another but against others who would break into what to outsiders is now seen as a lucrative field. Valuers must have the right to compete against these outsiders. Some members will form organisations permitting them to compete on an equal footing. These will be the firms who have grasped the nettle and will move forward to meet the demands of a changing society.

Thou shalt advertise — to survive — but in accordance with the tests of good taste, dignity, and restraint.

PRIVATE DRAINS WITHOUT EASEMENTS

WILL BARNES & NATALIE WILSON

This article highlights the surprisingly common yet sometimes misunderstood issue of undocumented, but legally protected, private drains and how they can cause snags in development plans.

What drain?

You've checked the title, the survey plan, the Land Information Memorandum (LIM) and property file – the property seems free of easements and is ready for development right? Not necessarily – or perhaps, but with more difficulty.

Private drains not protected by registered easements are relatively common in New Zealand, mainly in older suburbs. However:

- Existing private drains are not always shown or correctly labelled on publicly available (or any) plans and information; and
- The rights that attach to them are often poorly understood (or unknown) to those involved, advisors included.

The fact is that these drains are often used daily and enjoy protection similar to that given by an easement. The lack of awareness of private drains can lead to frustration, disputes and delays in work once uncovered.

Owners can often be unaware of any rights or obligations they may have in relation to any private drain network.

Importantly, private drains that are caught by local government legislation are effectively a 'carve out' to the legal principle of 'indefeasibility of title'. The existence of a private drain (laid with consent by affected owners) is sufficient for rights to attach to the property that benefits from the drain. This is regardless of whether the existence of the private drain is noted on the title of the burdened property or even on Council records.

What are private drains?

For the purposes of the Local Government Act 1974 (LGA 74), privately-owned drains are wastewater or stormwater pipes or drain lines that pass through another party's property to connect benefiting properties to the public network.

Usually, private drains for stormwater and wastewater are protected by registered easement, with easement planning and registration a key part of the subdivision of property in New Zealand. However, the LGA 74 provides protection, regardless of the grant of easements (or a lack of grant), for private drains constructed with the consent of the owners of all properties affected by it.

Further, while there is a mechanism to note a private drain's existence on the title of either the benefiting or burdened property, the rights are effective regardless. There is no requirement for a local authority to document the private drain in publicly available GIS systems (commonly used to identify the utilities that serve a property) or note it in a LIM.

The consequence of this is property owners can often be unaware of any rights or obligations they may have in relation to any private drain network.

Rights and obligations imposed by private drains

Section 461 of the LGA 74 provides that where any private drain (constructed with the consent of the owners of all the properties affected) passes through or serves separately-owned property, the following rights attach to all properties served by that drain (Qualifying Factors):

- A right to the free and uninterrupted use of that private drain; and
- A right for the occupiers or any of them to enter upon all properties served by that drain, or through which it passes, for the purpose of relaying or effecting necessary repairs to the drain; and
- A right to contribution from the owners or occupiers of other properties so served by that drain towards the cost of executing, providing, and doing all or any of the things required in respect of the drain by the relevant part of the LGA 74 or any bylaw; and
- A right to contribution from the owners or occupiers of those other properties towards the cost of all necessary relaying of or repairs to the drain; and
- A right to the recovery from the owners or occupiers of other properties through which that drain passes, but which are not served by the drain, of the cost of any repairs to the drain necessitated by any wilful or negligent act of those owners or occupiers.

Notably, the LGA 74 does not anticipate removal or realignment of a private drain, complicating the obligations that come with owning property that a private drain passes through.

The decision in *Archer v Robertson and Others* (1964) 11 MCD 209 determined rights attach as soon as the Qualifying Factors exist. This is without the need for any notation on the title, despite there being a mechanism to record the existence of the drain.

On a related point, local authorities (under section 460 of the LGA 74) can mandate private drains to be constructed over private property where they consider the only practical drainage route is through that private property, but that owner will not consent to the drain's construction. Section 461 of the LGA 764 will also apply to those drains.

When private drains block plans

The following are scenarios where the presence of private drains can cause issues:

- **Sale and purchase of a property:** A property that relies on a private drain (or is burdened by one) is transferred, but it was not identified during due diligence (due to a lack of records, as described above), and only becomes apparent after settlement (e.g. when someone requests access to carry out works). Similarly, a vendor may only learn that their property is within a private drain network while preparing to sell, if at all. Finally, even if a private drain is identified, it will often be difficult to establish whether the surrounding properties are aware of the drains and whether they have been appropriately maintained.
- **Re-development of a property:** Property owners may only learn of the existence of a private drain during planning or construction, causing development plans to change due to the discovery of an undocumented private drain. Without a clear process for realignment or removal in the LGA 74, delays or restrictions on development may result.
- **Failure to maintain:** Finally, a lack of awareness of any private drain inevitably leads to a failure to maintain it, increasing the risk over time of drain networks failing and leading to flooding and potential health implications where sewage is involved. Often the relevant drains are aged and made of clay, so damage and degradation becomes more likely over time.

Property owners may only learn of the existence of a private drain during planning or construction.

Mitigation

Because of the lack of records, it can be very difficult to identify all undocumented private drains that benefit or burden a property. The best means of mitigating the impacts of a private drain is through thorough due diligence prior to purchase (or before an agreement is unconditional), or at least undertaking due diligence prior to carrying out extensive work on a property.

A solicitor can review a LIM, Council property file, and has access to records and services that may help identify any private drains that are relevant to a property. However, as discussed, without records it may not be possible to identify them.

Short of carrying out extensive subsoil surveys, some tips for picking up undocumented drains are:

- Checking the titles to adjacent properties for pipeline routes;
- Considering the gradient of the property in terms of natural gravity drainage;

- Using drainage CCTV to confirm the actual routes of all pipe connections; and
- Establishing where all stormwater and wastewater connections from the property reach the public system (and how they get there) – for all adjacent properties and the subject property.

That level of due diligence may not be feasible for many property purchases, and often an agreement will only reach the solicitor when it is signed and unconditional. Problematically, not all solicitors will be alert to the issues surrounding private drains.

At the very least, however, property advisors and solicitors should flag to prospective property owners or developers that they will need to satisfy themselves as to the existence of all underground drains. They also need to flag that it is possible for the property to be burdened by private drain obligations that are not noted on the title or Council records.

Once an undocumented private drain is identified, steps should be taken to formally document it.

Updating records

Once an undocumented private drain is identified, steps should be taken to formally document it. This can done by noting it on the property's title, supplying plans to be incorporated into the property's property file with the local authority, or granting legal rights over the private drain though a registered easement.

- **Notation on title through the LGA 74:** A benefiting property owner can request their local authority to issue a certificate under section 461(2) of the LGA 74 that the relevant property is actually served by that private drain. What a local authority would require in order to issue the certificate would likely depend on the age of the pipe, or the extent to which the affected properties have been transferred. For a new private drain, most have a form for the consent to be signed by a neighbour. Where a drain has been in a place for a long time, the local authority may need to be satisfied that the Qualifying Factors apply to the drain, which may depend on what plans or documents you can find. It is unclear whether evidence of consent to the installation of the drain would be required. Once the local authority has issued the certificate and a survey plan has been prepared as required by Land Information New Zealand (LINZ), LINZ must register the certificate.
- **Creating an easement:** Formally recognising a private drain by means of an easement is the most comprehensive method to document a private drain, with the easement clearly registered on the affected properties' titles, recording the rights and obligations that are to accompany the drain. However, negotiating, preparing

and registering an easement is typically the most costly means to document a private drain. It also assumes a burdened property owner is agreeable to registration of an easement, so may not always be the most pragmatic approach, particularly given the protection already afforded by the LGA 74.

Conclusions

While the continued use of private drains remains necessary, we encourage property owners and advisors to be alert to the possibility that any property may rely on or serve a private drain network that is not recorded on a property's title or documented in its property file/LIM.

For property advisors, pointing out the risk of undocumented drains should be part of your standard practice where you are advising clients on title risks. Understanding private drains and mitigating the associated risks, where possible, is key to preventing proposed works or dealings with a property from being washed down the drain

For property advisors, pointing out the risk of undocumented drains should be part of your standard practice where you are advising clients on title risks.

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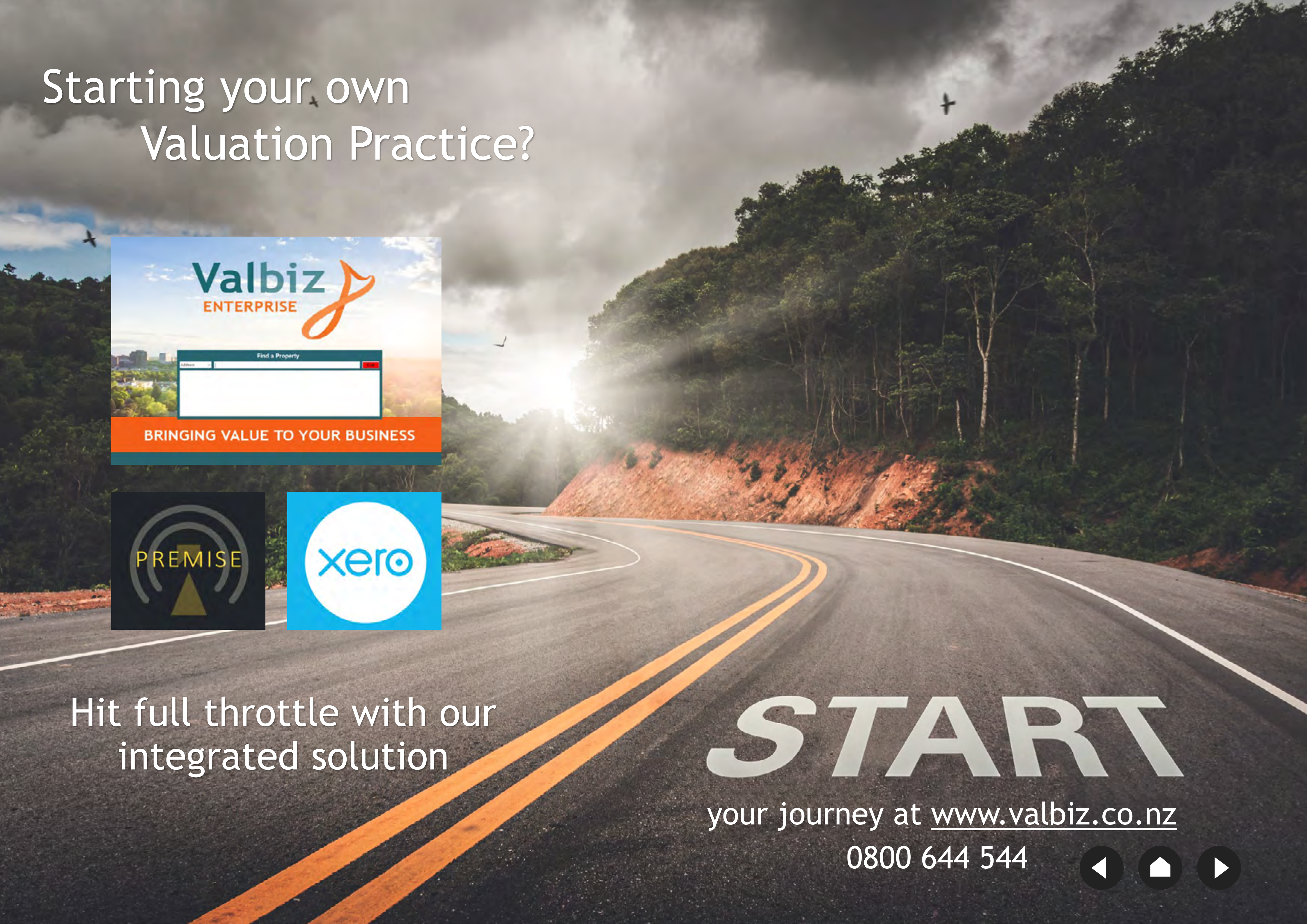
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