

Empowering apartment buyers to avoid building defects by reducing information asymmetries in the apartment development process

Smart and
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Abstract

Purpose – A rapid growth in multi-owned apartment (MOAs) developments around the world has been accompanied by increasing concerns about the high incidence of building defects. Despite the significant economic, psychological and social impacts of defects on MOA building owners and occupiers, research into the organisational and non-technical causes of these defects remains limited and under-theorised. This paper addresses this research gap by reporting the results of a three-year research project in Sydney, Australia which investigated the extent and causes of defects in MOA buildings from an information asymmetry perspective.

Design/methodology/approach – Informed by information asymmetry theory, the research is based on a thematic analysis of semi-structured interviews with 66 experts from across the MOA industry in Sydney, Australia.

Findings – Findings produce a new typology of 16 information asymmetries which can lead to defects over the MOA development process. We find that almost most key actors involved in the MOA development process are incentivised to hide information about potential defects from MOA customers who are the most disempowered and vulnerable parties in the process.

Originality/value – By mobilising information asymmetry theory, this research provides a novel conceptualisation of an important and intransigent problem and new practical insights into how to resolve it. By contributing a new typology of 16 types of information asymmetries in the MOA development process, a series of recommendations are made to ensure that the MOA market has the information to minimise MOA defects and better serve consumers' interest.

Keywords Defects, Quality, Multi-owned apartments, Smart governance, Strata, Condominiums, Information asymmetries, Principal-agent theory

Paper type Research paper

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Introduction

Rapid urbanisation, city densification and population growth are leading to the proliferation of multi-owned apartment (MOAs) developments in many countries ([Levin and Arthurson, 2020](#)). For example, in Australia where this research was undertaken, the combined insured value of MOAs is over \$A1 trillion ([Easthope et al., 2023](#), p. 6). Unfortunately, there is also evidence that the growth in MOAs around the world has been accompanied by significant levels of building defects with sometimes devastating social and economic consequences and which threaten to undermine Sustainable Development Goal 11 (Sustainable cities and communities) agreed as a non-legally binding aim by all United Nations (UN) members in 2015. For example, investigations into the UK's Grenfell Tower fire which killed 72 people have revealed that about 5% of the UK's residential building stock may be unsafe due to inflammable cladding and other defects ([Ford, 2021](#)). In Australia, [CFMEU \(2020\)](#) estimated the costs of rectifying MOA defects over the last decade to be about \$6.2 billion. [Oswald et al. \(2023\)](#) have highlighted the significant economic, psychological and social costs for the people who live in these defective buildings ([Oswald et al., 2023](#)). Similar concerns have been raised about the quality of MOAs in many other countries such as Denmark, New Zealand, Spain, Singapore, Indonesia, Mexico, Hong Kong and Mainland China to name just a few (see [Schultz et al., 2015](#); [Rehm et al., 2020](#)).

Internationally, many explanations have been advanced for this crisis of quality in MOA developments. For example, in the UK, the [Hackitt Report \(2018\)](#) and government inquiry into the Grenfell disaster ([Moore-Bick, 2019](#)) blamed systemic and cultural failures in the construction industry and regulatory systems governing apartment buildings. As the UK Government's response to the Grenfell Tower Inquiry report states, rectifying these failures "will require profound change in culture and behaviour from those who develop, procure, design, build and manage buildings across the built environment, as well as the government, its bodies and wider institutions" ([UK Government, 2025](#)). In the USA, [Blanchard's \(2022\)](#) investigation of the 2021 Surfside Condo Collapse in Miami found that the building was designed, constructed and maintained negligently. In Australia, [Shergold and Weir \(2018\)](#) reported a preponderance of serious compliance failures in recently constructed MOAs including: non-compliant cladding; water ingress leading to mould and structural compromise and poorly constructed fire resisting elements. These reports add to the already large body of international research into the problem of poor construction quality ([Adebisi and Alao, 2018](#); [CIOB, 2019](#)).

MOA developments have special features which exacerbate the risks of defects compared to other forms of development such as commercial buildings ([Easthope and Randolph, 2016](#); [Wilson and Rhodes, 2017](#)). One significant feature of the MOA development process which contributes to defects is its highly fragmented nature that leads to significant differences in information between the many stakeholders involved (MOA developers, building/design/engineering consultants, contractors, certifiers, purchasers, owners' corporations, sellers and regulators). Apartment purchasers, at the end of the information chain, are often in the weakest position. This means that they tend to have little access to information that can assist them in deciding about the quality and value for money of the apartment they are buying. This phenomenon is called 'information asymmetry' and has its roots in principal-agent theory ([Eisenhardt 1989](#)) which posits that all market actors have access to differing amounts, qualities and types of information about the products and services they are buying. The problem with information asymmetries is that they adversely impact efficient market functioning by introducing transaction costs and power differentials into transactional relationships, enabling actors to behave in their own interests and heterogeneous product and service quality to coexist in the marketplace, independent of price ([Akerlof, 1970](#); [Spence, 1973](#)).

Information asymmetries have been identified as problematic in the building development process generally ([Leung et al., 2007](#); [Easthope and Randolph, 2016](#); [Ma et al., 2018](#); [Li and Chau, 2024](#)). However few have explicitly addressed how it can impact building quality. In one

exception, [Lützkendorf and Speer \(2005\)](#) argued that asymmetric information is widespread in property markets, with buyers either not able to access or to interpret relevant information. [Lützkendorf and Speer \(2005\)](#) argue that this gives developers an advantage over consumers which distorts the market in the developer's favour since consumers will tend to favour cheaper lower-quality buildings over good quality buildings. More recently, [Ivić and Cerić's \(2023\)](#) review of research on the risks of information asymmetries in the building procurement process shows that it can often lead to "opportunistic behaviour" which can undermine numerous project outcomes, including low quality.

However, the problem of information asymmetries has not previously been examined in relation to the risk of defects in MOA developments. To address this research gap, this paper reports the results of a three-year research project in Sydney, Australia between 2019 and 2022, which investigated the following research questions:

- (1) What is the extent and causes of information asymmetries within the MOA development process?
- (2) Do any information asymmetries which exist contribute to the high incidence of defects in MOA buildings?

Sydney Australia offers a valuable context to investigate such problems because of the large numbers of MOA developments and longstanding concerns over building quality as documented above. However, this research has much wider international relevance as the world rapidly urbanises and as an increasing amount of global household wealth and debt is invested in MOA buildings ([Liu et al., 2020](#)). Addressing the global defects problem in MOA developments will therefore potentially improve the wealth, health and well-being of many millions of people worldwide ([Crommelin et al., 2021](#)).

Conceptualising MOA defects using information asymmetry theory

This research employed the following definition of a defective building by combining [Watt's \(2007, p. 96\)](#) and [Easthope et al.'s \(2012, p. 65\)](#) definitions:

a building that is not fit for its purpose due to a failing or shortcoming in the function, performance, statutory or user requirements of the building, where the failing or shortcoming has existed since construction or been triggered later by faulty original construction or design.

The value of this definition is that it recognises that defects can be caused by poor design and/or construction and that in addition to statutory standards, the views of building customers and users are also critical. As [Watt \(2007\)](#) indicates, construction that fails after occupation and which does not meet reasonable user requirements may also be considered defective in certain circumstances.

Adopting the above definition and exploring the above research questions, research shows that the MOA development process and market is undermined by many information asymmetries which could potentially undermine MOA building quality. For example, [Easthope and Randolph \(2016\)](#), [Rosewall and Shoory \(2017\)](#), [CIOB \(2019\)](#), [Riazi et al. \(2020\)](#), [Bahrami and Zeinali \(2022\)](#) and [Perera et al. \(2024\)](#), point to many factors which exacerbate information asymmetries between actors in the MOA development process which can lead to building defects. These include: a relatively high proportion of relatively small and lower skilled builders compared to other sectors such as high rise commercial buildings; a lack of digital maturity in the MOA supply chain to facilitate the effective sharing of information within the supply chain and with end users; relatively high time and cost pressures which cause project actors to cut corners and build with incomplete project documentation; one-sided contracts between project actors which undermine collaboration and information sharing and create "split incentives" (incentives for one party to withhold information from another); the sheer number of actors involved in the MOA development process; increasing MOA building

size and complexity and the highly cyclical MOA market which creates incentives for developers to rush projects to maximise sales and meet strict loan payment deadlines in volatile property markets. [Crommelin et al. \(2021\)](#) also show that MOAs are procured through a highly fragmented organisational process characterised by communication problems, split incentives and a culture which shifts risks to the point of least resistance. These are typically small subcontractors who are ill-equipped to manage them. The unfair financial strain subsequently placed on these small subcontractors which build MOAs encourages covering up of problems and opportunistic cost-cutting behaviour which can also lead to building defects.

A further problem which exacerbates the potential risks of information asymmetries in MOA developments is that, unlike commercial developers, MOA developers are selling to multiple, uncoordinated and uninformed customers who are often pressured to “buy-off-the-plan” before designs are complete ([Easthope and Randolph, 2016](#)). Even when information is available to MOA customers about the build quality, it can be very difficult for them to understand. This prevents customers from differentiating between high and low-quality MOA developments and allows unscrupulous developers to engage in what information asymmetry theory terms “moral hazard” ([Akerlof, 1970](#); [Spence, 1973](#)) by concealing defective or poor-quality work while charging the same as for higher-quality properties. This issue is particularly acute in markets where the price of the product is largely determined by its location rather than any intrinsic quality of the building itself, as it is in MOA.

Eventually, information asymmetry theory predicts that in the absence of price differentiating information, buyers will tend to gravitate towards lower quality and cheaper products (a process referred to as “adverse selection”). This can lead to a downward spiral of building quality which will undermine customer trust and profitability in the entire market ([Akerlof, 1970](#)). Indeed, there is evidence that this has happened in Australia’s MOA market ([Chandler, 2020](#)). Furthermore, as poor-quality and more cheaply produced products force high quality products out of the MOA market, information asymmetry theory predicts negative spill-over effects for other consumers. For example, one of the consequences might be increased building insurance premiums for all buyers – a phenomenon reported by an Australian parliamentary inquiry into building quality, standards and disputes across the state of New South Wales ([Noredington, 2019](#)). This is a specific problem being addressed in Australia by the state of New South Wales (NSW) introducing a market-led quality rating system called iCERT for developers, builders, sub-contractors, certifiers and consultants which is linked to the potential to offer decennial insurance to purchasers of their MOA developments ([NSW Government, 2025](#)).

This downward spiral of quality due to information asymmetries is especially likely in MOA markets because MOA developers who “signal” they are producing higher quality buildings to MOA customers and regulators are not necessarily appropriately rewarded. This is due to the strong influence of location rather than quality on price levels and because MOA customers are not always equipped with the expertise to differentiate between product quality (a process known as “screening”). Although a building inspection report can help a customer differentiate between good and bad MOA developments, many such reports are superficial and the increasing complexity of MOA buildings requires more than just a visual survey of surface defects. In addition, many MOA buildings cannot be inspected easily by regulators as oversight authorities in many countries have been hollowed out by longstanding underinvestment in the public sector ([Easthope and Randolph, 2009](#); [Randolph et al., 2024](#)).

Research in Australia shows that information asymmetries for MOA customers can also be further exacerbated by some owners corporations being unaware of problems in their building or covering-up defects to protect their property values ([Garrone et al., 2013](#)). In information asymmetry theory, this is called the “multiple-agent problem” and is more likely in large MOAs with many owners and poorly managed owners corporations ([Nor, 2015](#)). Information asymmetries are also made more likely by legal loopholes which have allowed unscrupulous developers to create and then bankrupt “sham development companies” on completion of an

MOA development, to avoid responsibility for subsequent defects problems (a practice called “phoenixing”) (CFMEU, 2020).

Finally, while information asymmetries may appear to disadvantage MOA buyers the most, in the long term it is also a problem for sellers, as falling prices and quality undermine the profitability and even viability of MOA markets. Indeed, as consumers become more aware of the risks of purchasing products in asymmetric markets, their confidence may decay to the point of nonexistence, where no goods are traded at any price (Stiglitz, 2000). This has been recognised as a risk for the MOA sector, potentially undermining the entire urban densification development model on which many future cities will be redeveloped and built (Easthope and Randolph, 2016). However, even if the entire market for MOA is not undermined, there is significant potential for the market for individual MOA buildings affected by defects to be undermined causing significant financial and psychological stress to affected owners (Oswald *et al.*, 2023).

The following section describes the methodology and method that we used to investigate the research questions and shed further light on the potential theorised problems identified above.

Methodology and method

Given the relational nature of information asymmetries and the many stakeholders involved in the MOA development process, this research adopted an interpretive methodology which recognised the many different perspectives on this problem. Data were collected over a three-year period using semi-structured interviews by a team of six researchers from a range of disciplinary backgrounds (construction, planning, architecture and sociology). Interviewees were identified using a key informant approach which targeted a representative sample of stakeholders (see Table 1) involved over the life cycle of the MOA development process across Australia. Interview participants had to have significant experience related to MOA development and were identified through searches of publicly available information,

Table 1. Interview sample

Sector	No. of interviewees
Rectification specialists (includes contractors, water-proofers, structural and façade repairs specialists, engineers, expert witnesses)	7
Development industry experts	6
Lawyers	5
Academics	6
Subcontractors (includes plumbers, tilers, carpentry, joinery, interiors, foreman)	6
Alternative development model experts (CHPs, student housing, etc.)	3
Architects and designers	3
Builders and construction companies	4
Government employees (state and local)	6
Engineers	2
Certifiers	2
Insurers	3
Strata media	2
Property marketing and real estate companies	3
Strata managers	2
Suppliers	2
Strata inspectors	2
Experienced strata owners	2
Total	66

Source(s): Table created by authors

recommendations by an expert reference panel of key MOA industry stakeholders, the research team's professional connections and by a snowballing approach based on professional contacts of the initial participant group.

Informed by our research questions and our theoretical framework, the semi-structured interviews were designed to enable interviewees to elaborate on their own personal experiences of information asymmetries during the MOA development process and – where they existed – the role they played in increasing the risk of defects in MOA buildings. Interviews typically lasted between 45 min and 2 h and were conducted by two–three members of the multidisciplinary research team using a combination of face-to-face, telephone and on-line approaches. We continued recruiting respondents until the interviews no longer offered any new insights, reaching a point of “theoretical saturation” (Saunders *et al.*, 2018). This resulted in a total of 57 interviews covering 66 experts (with some interviews involving multiple participants -see Table 1).

Analysis

Interviews were recorded and transcribed and data were analysed using thematic analysis in four stages following Braun and Clarke (2006). Stage one (data immersion) involved the research team repeatedly reading the interview transcripts to gain familiarity with the data. The research team then conducted open (inductive) and directed (deductive) coding using analytical categories derived from information asymmetry theory such as: principal agent problems; split incentives; agency costs; opportunistic behaviour; moral hazard; adverse selection; signalling and screening. This generated an initial list of items/codes (first-order coding) from the data-set which in stage two were arranged as potential causes of building defects over the life-cycle of the MOA development process: planning; design; construction; buying/sales process; building management and defects rectification. In stage three, researchers examined how codes combined to form over-arching themes relating to the research question. Finally, emergent themes were further refined by looking for connections between overlapping themes until theoretical saturation occurred and no further major themes emerged.

The results are presented below following Hennink (2014, p. 133) who recommends “simultaneous analysis and interpretation . . . (to) spur deeper reflection on study findings”. Hennink (2014) argues that combining the results and discussion of results into one section can be good practice in qualitative research because it maximises researcher analytical reflexivity and enables greater transparency in interpretation of results.

Discussion of results

The following results address each research question from the perspectives of the four main groups of stakeholders who have a significant role in MOA delivery pipeline, from planning to design to procurement to construction and subsequent management. These groups were as follows:

- (1) The development team (planners, designers, contractors, engineers, certifiers, defects rectification experts, lawyers and strata managers);
- (2) Governments (local and state);
- (3) Financiers and insurers;
- (4) MOA customers.

The development team

Analysis of data about the role of the development team in creating information asymmetries which can increase the risk of defects in MOA yielded six main themes. These are discussed in detail below.

Theme 1: poor quality design and construction information. Numerous interviewees complained about information asymmetries caused by a lack of completed project documentation in MOA projects.

One of the biggest issues which is lacking is the level of documentation. . . . the builder gets it, and the builder goes, well all I've got to do is just build it as cheaply as I humanly can – Certifier 2

Interviewees argued that tendering with minimum design documentation was very common and led to opportunistic behaviour within MOA development teams, such as contractors making their own design decisions to fill the gaps and pursuing claims at every opportunity for extra costs incurred. Poor design and construction information often continued into the construction stage of MOA developments, where design changes were often not recorded or checked.

I used to enter all of my data into my structural engineering [. . .] system . . . nobody asked for that information anymore. – Engineer 1

The impact of design changes and poor design record keeping on projects has been widely explored in relation to cost, time and safety performance (see [Love et al., 2016](#)). However, these results highlight its additional impact on defects in MOA developments. Importantly, they also reveal that the problem of “down-the-line” information asymmetries between MOA developers and customers, as noted by [Easthope et al. \(2012\)](#), [Easthope and Randolph \(2016\)](#) and [Wilson and Rhodes \(2017\)](#), can be partially explained by this information not existing in the first place.

Theme two: legal and regulatory complexity. Numerous respondents complained that complex and voluminous contracts were often used between clients and principal contractors and subcontractors to shift risk for defects down MOA supply chains.

I sign a contract, 300 pages . . . I have to sign it to get the job–Subcontractor 3

Many argued that this created an “*adversarial environment*” (*Builder 3*) which undermines collaboration and encourages subcontractors to cover-up their mistakes and focus on protecting their own interests rather than working together to find the best solution. It was noted that this was a particular problem for MOA developments because they tend to employ a large proportion of smaller subcontractors which may not have the necessary resources and expertise to manage such risks.

So everybody will blame each other, and everybody will cover their mistakes – Subcontractor 3

While the numerous downsides of this risk transfer culture in the construction industry have been previously noted by researchers such as [Loosemore and Lim \(2018\)](#), the potential implications for MOA defects have not been previously highlighted.

Excessive regulation was also seen as a major problem by our respondents, reflecting concerns raised by [Hackitt \(2018\)](#) in her review of the UK's Grenfell disaster. Respondents stressed that this created a compliance mentality by exerting extra pressure on already stretched project teams, undermining the reliability of quality control processes which were designed to detect and remedy defects. This finding presents a dilemma to governments wanting to use regulation to improve the quality of MOA developments (e.g. [UK Government, 2025](#)) by highlighting the need to ensure imposing more regulations does not have the opposite effect.

There's so much more paperwork and stuff you've got to do. I just wish that all that stuff translated to better quality at the end of the day. – Supplier 2

Theme three: lack of learning. Many respondents also stressed that the pressurised and fragmented nature of the MOA procurement process (which involves multiple parties working sequentially and independently across multiple projects) offered limited learning and feedback opportunities for developers to improve their products from one MOA project to the next.

..you move on to another job before you realize if you've been doing something the wrong way . . . you're not learning, there's no closed loop – Rectification Specialist 2

Concerns were also raised about poor feedback between MOA developers and customers. For example, many expressed concern that several high-quality developers had exited the MOA market because they were not able to “signal” to customers about their higher quality products and charge a correspondingly higher price. As predicted by [Akerlof \(1970\)](#) many respondents complained that this lack of signalling has led to a downward pressure on quality which has undermined consumer trust, business profitability and even viability of the MOA market for all MOA actors.

We started bidding residential work . . . but ultimately we said, ‘well, we’re wasting our time bidding it properly and putting the right quality materials in it . . . Clients [developers] didn’t want that. – Builder/Contractor 1

One potential way to resolve these information asymmetries is to undertake a post-occupancy evaluation to create a feedback loop from customers ([Abisuga, 2020](#)). However, respondents indicate that this is not typically done in the MOA sector and is often actively discouraged by some developers because of the time and costs involved in addressing any defects found.

We finished one last year . . . they’re not interested. . . . you know, this is stuff they don’t want to hear. – Subcontractor 2

Theme four: poor quality culture. Supporting concerns raised by [Hackitt \(2018\)](#) in the UK and [Shergold and Wier \(2018\)](#) in Australia, interviewees also agreed that the construction industry’s culture exacerbated information asymmetries which undermined MOA quality. This culture was described in terms of a lack of care about building quality, a compliance-based approach to quality and a financial model which focusses on short-term cost rather than being of value to MOA customers.

. . . all the decision-making is about the greatest possible revenue and the lowest possible cost, but nothing to do with value – Alternative Development Model Expert 2

Numerous respondents argued that the focus in MOA development was on price rather quality and that constant “value engineering” focussed on cost cutting rather value maximisation was a major potential cause of MOA defects (see also [Kelly et al., 2014](#)).

. . . it’s not really value engineering, you’re just taking the good stuff out and putting inferior stuff in. – Subcontractor 5

Theme five: information is not always accessible. A recurring theme within our data was significant barriers to technical information about building quality. Concerningly, many respondents seemed reluctant to pay for access to Australian building standards which govern the way that buildings should be designed and constructed.

The standards are very expensive to purchase, and they’re not accessible – Rectification Specialist 3

Many respondents also stressed the need for clearer monitoring and reporting of non-conforming products. This reflected concerns raised by [Shergold and Wier \(2018\)](#) and indicates that little has changed since their report in 2018. Respondents believed that government should take more responsibility for managing this problem.

There has to be someone governing the process. There has to be someone holding people accountable – Subcontractor 4

Theme six: a lack of supervisory expertise. Many respondents highlighted a lack of supervisory expertise in the industry to detect defects and correct them. It was widely argued that an increase in the number of supervisors with a degree rather than trade qualifications had contributed to this problem. Of concern to educators is that many respondents linked this

problem to an over-emphasis on theory rather than practical experience in the university-based education of MOA supervisors.

The builders coming out of university, for example, a lot of them focus on that, ‘oh, I’ve just got to get these forms done’. People aren’t thinking for themselves, and people aren’t asking the questions along the way. – Engineer 2

This finding supports [CIOB \(2019\)](#) in highlighting the potential tensions between formal building quality assurance processes and the role of skilled judgement in making decisions about quality. As [Hackitt \(2018, p. 26\)](#) warned that in their analysis of the UK’s Grenfell disaster “there is also the risk that practitioners rely too heavily on forms and not enough on their own judgement . . .”.

Governments

Analysis of data about the role of government in creating information asymmetries which can increase the risk of defects in MOA yielded two main themes which are discussed in detail below.

Theme 1: de-regulation. Many respondents agreed that the ethos of building de-regulation which has prevailed in Australia since the 1990s had contributed significantly to information asymmetries and defects in MOAs. De-regulation was seen to have taken several different forms, including: the private certification of building quality, streamlining of development approvals processes and reduced resources for inspecting building sites and enforcing professional standards:

This government are all about cutting red tape. But that’s just used as an excuse in a lot of cases for no responsibility . . . – Strata Manager 2

Concerns about deregulation are not new and have been raised by numerous reports into MOA defects ([Hanmer, 2019](#), NSW Parliament, Legislative Council PAC 2020; [CFMEU, 2020](#)). However, it was clear from our interviews that the argument that the industry could regulate itself, which underpinned such policies, was not evidenced in practice. Interviewees strongly agreed that the deregulation agenda had contributed to conflicts of interests between certifiers and developers, a lack of independence in quality control and the reduction of government capacity to regulate the industry and understand the extent of the defects problem.

. . . the regulation of the market is nowhere near what the government can provide, and the government has basically hollowed itself out – Lawyer 2

Theme two: poor data management. Significantly, our results indicate that even in the unlikely event of governments having collected robust MOA defects data, they have often not made good use of it. For example, many respondents highlighted the challenges in sharing information across internal government “silos”. Many respondents also argued that the private building certification system which exists in Australia (a function of de-regulation) exacerbates MOA defects data management problems because responsibility for managing private certifiers documentation is dispersed between local councils. The recent digitisation of the development process in the Australian state of NSW through a new online portal where all project documentation and compliance information must be lodged before development commences was seen as important in resolving this problem. However, gaps in capturing and sharing the full suite of construction-related documentation remain. For example:

.. it’s only just now that even the Department of Planning, through their planning portals, are talking about them being the repository of all certification documentation. – Certifier 1

However, in contrast to the highly optimistic digitisation debate in government (see [Corydon et al., 2016](#)), respondents cautioned that digitisation does not obviate the need for ensuring that defects data are comprehensive and well-managed. The inconsistency of how such data are

recorded and held and the limited extent to which the data are shared with prospective consumers mean that digitalisation initiatives may do little to improve the information asymmetry problem for MOA customers.

Financiers and insurers

Analysis of data about the role of the financial services and insurance industry in creating information asymmetries which can increase the risk of MOA defects yielded two main themes which are discussed below.

Theme 1: financiers use legal mechanisms to reduce risk of funding risky developers. In an effective MOA market, financiers and insurers link the risk of poor-quality developments to insurance premiums and finance costs and thus discourage developers and builders from producing poor quality buildings. However, because information about risky developers is not readily available, interviewees explained that financiers have developed alternative ways to lend money at minimum risk, without needing to take the risk of defects into account. These lending mechanisms exacerbate information asymmetries and the risk of defects for MOA customers. For example, one mechanism accepted by many financiers is the ring-fencing of individual MOA developments by creating a separate new company or “special purpose vehicle” (SPV) associated with each MOA development.

The only way institutional developers can develop is by setting up a standalone company – Development Industry 2

While this practice was justified by some of our respondents, it has been widely criticised since it led to the use of “phoenixing”, where developers deliberately close down their SPVs on the completion and sale of the scheme to avoid defects liabilities, leaving customers stranded with no right of legal recourse (CFMEU, 2020). Adding to these criticisms, even where phoenixing does not occur, our results show that the use of SPVs makes it more difficult for MOA customers to “screen” developers based on their track record of past defects since the name of the SPV may hold no clues as to the holding company.

Another strategy by which financiers reduce risk is to require MOA developers to secure a high level of pre-sales. This has led to the now ubiquitous “off-the-plan” sales marketing strategy in Australia. This exacerbates information asymmetries because customers buy their apartments before building even starts with no opportunity to view the completed product or assess associated handover documentation, which does not exist at that stage.

The financiers, when they got nervous, just started to increase their pre-sale requirements. . . . All they were doing there was covering their own ass to make sure they got their money back. – Strata Manager 2

Theme two: MOA builders do not need insurance for buildings of four or more storeys. In NSW, MOA builders are scrutinised by the government insurer “icare” before being provided with the capacity to offer Home Building Compensation insurance. This introduces a degree of quality control of the MOA development process.

. . . your finances are audited at least once a year. If you want to grow a bit bigger in one year, then they might put a quarterly review on your finances – Rectification Specialist 2

However, because Home Building Compensation insurance is not required for the construction of MOAs of four or more storeys in NSW, builders in this part of the MOA market are not subject to the same level of scrutiny. This is despite these types of MOA developments being more complex and risky. Encouragingly, an initiative called iCirt in NSW which rates developers based on their riskiness has encouraged insurers to re-enter the market and offer decennial insurance on highly rated MOA developments (Chandler, 2022).

MOA customers

Analysis of data about the role of the customer in the context of information asymmetries which can increase the risk of defects in MOA yielded five main themes which are discussed below.

Theme 1: limited access to building defects data. Our research showed that MOA customers have very limited access to data about MOA building defects in both new and existing buildings. Council records only pick up MOA defects in limited instances and while case law can provide useful insights into low quality MOA developers and developments, this is not always available to customers and they are restricted to the few cases that make it to court. Our results support [Easthope and Randolph \(2016\)](#) who found that MOA customers are left to rely on defects information voluntarily provided by the developer (which is very unlikely) or on privately commissioned building inspection reports of their intended MOA purchase, which are usually based on a superficial visual inspection of surface defects. To address this issue, in 2015 the NSW Strata Building Bond and Inspections Scheme ([NSW Fair Trading, 2023a](#)) was introduced in 2015 for apartment buildings over four stories whereby the developer must lodge a bond equivalent to 2% of the capital value of the scheme to be held for two years to cover any latent defects. However, numerous respondents expressed concern about how this works in practice because the scheme also relies on visual building inspections which means that hidden defects can remain unreported.

Theme two: optimism bias. Our results also highlighted the risk of “optimism bias” in MOA customer confidence about the likelihood of defects in their MOA developments. Interviewees suggested that many MOA customers wrongly assume that the government is monitoring and checking the risks of defects in MOA buildings, that the MOA industry is managing these risks, that MOA developers would not knowingly sell a defective apartment and that adequate consumer protections exist. This discourages them to screen for defects information.

These observations reflect those of [Forcada et al. \(2013\)](#) in the Spanish MOA market and support [Lambert’s \(2015, p. 3\)](#) findings in Australia nearly a decade ago that “in the residential area, [there is] a major gap in understanding and knowledge (information asymmetry) between the builder and the consumer”. As one respondent commented:

A lot of people, particularly first home buyers and even investors, they just don’t spend too much time thinking about it. [. . .] they make these assumptions that because it’s new it should be good – Property Marketing and Real Estate 1

Theme three: MOA marketing strategies. Our research also provided new insights into the power of MOA marketing strategies to discourage MOA customers from “screening” MOA developers for defects-related information. Many respondents noted that the MOA industry is geared towards glossy marketing and that many MOA developers “signal” to consumers using arbitrary awards for luxury and quality which hold little legitimacy.

people are blindsided . . . all the brochures are beautiful and the apartment that you look at all looks fine until – not even six to eight months later things are falling off, water is coming in, the car park is flooding. – Strata Manager 1

Our data indicated that information asymmetries are made worse when customers are pressurised by marketing strategies to buy an apartment quickly “off the plan” before it is built. High pressure sales “launch” events are a common marketing technique which create “fear of missing out” amongst prospective purchasers with the explicit intention of securing as many early sales as possible to secure necessary finance. This practice creates particular risks in booming property markets where higher MOA prices can also mean that customers have less money to invest in private building inspections before they buy.

I’ve got clients who are buying \$2 million homes, and they haven’t done a building and pest inspection on them because they’ve been looking six months and they’ve done three or four of them and they’re like, we can’t afford to pay \$600 – Property Marketing and Real Estate 1

Additionally, respondents noted that there was a high level of cognitive dissonance operating in MOA purchasing behaviour (see also [Festinger, 1957](#)). So even when purchasers do invest in inspections of their MOA spend, they tend to play-down the risks of defects being present.

someone just rang me earlier and said, 'oh but I love this property' [...] I said I wouldn't buy it . . . He said to me, 'oh, but I really like it.' – Strata Manager 1

Theme four: poor completion handover processes. There is very little research on construction project handovers from building developers to customers ([Schneider et al., 2016](#)). However, our findings indicate that there are many problems in this process in MOA developments which can create information asymmetries which increase the risks of defects as owners are not being given the information they need to identify and manage any issues effectively. As respondents noted:

The NSW EP&A Act [1] [...] states, 'thou shalt have a building manual to hand over to occupiers.' [...] Unfortunately, the regulations were never created to bring it into force.– Academic 4

No one is checking the veracity or the accuracy of it – Strata Manager 2

Our findings therefore support calls by [Lambert \(2015\)](#) a decade ago for developers to provide more effective user and maintenance manuals for MOA customers on handover.

Theme five: low customer technical expertise. One of the unique aspects of the MOA market (compared to other markets such as commercial buildings) is the vulnerability of customers. As one respondent noted:

.. you hand over to a whole bunch of people who are just average Joes, who don't understand, and wouldn't be able to know what was going on. – Supplier 1

While MOA customers can hire expert building inspectors, it can be difficult for them to assess the quality of advice provided and the ability of inspectors to detect defects visually post construction is limited.

Conclusion

Set within a crisis of confidence in the quality of MOA developments worldwide, this research aimed to add to the limited empirical research and theoretical conceptualisation of this emerging problem by exploring two key questions:

- (1) What is the extent and causes of information asymmetries within the MOA development process?
- (2) Do any information asymmetries which exist contribute to the high incidence of defects in MOA buildings?

By mobilising information asymmetry theory and through semi-structured interviews with 66 stakeholders our findings make several important theoretical and practical contributions to research and practice in this critically important area.

First, the findings show extensive evidence of information asymmetries through all stages of the MOA development process. It seems that there are a multitude of incentives for stakeholders in the MOA development process to hide information from each other and that consumers (apartment owners) are the most disempowered and vulnerable parties in this process. From a theoretical perspective, the findings contribute a new typology of 16 types of information asymmetries which can work to the detriment of consumers in causing and obscuring the risks of defects in MOA apartments. These are summarised in [Table 2](#), from the perspectives of four key stakeholder groups in the MOA development process.

From a practical perspective, the results have numerous implications for policymakers who wish to improve the quality of MOA developments. First, it is critical to ensure that MOA projects start with full design documentation, that compliance information is easy to access and

Table 2. A multi-stakeholder typology of information asymmetries in the MOA development process

Type of information asymmetry	Main stakeholders affected
<i>Development Team</i>	
Poor quality design and construction information	Development team <> development team
Legalistic processes and box ticking	Government <> development team
Poor feedback loops	Customer <> development team
Poor quality culture	Development team <> development team
Information is not always accessible	Government <> development team
A lack of supervisory construction expertise	Development team <> development team
Poor value engineering	Development team <> development team
<i>Governments</i>	
De-regulation	Government <> development team
Poor data management	Government <> government government <> development team
<i>Financiers and Insurers</i>	
Financiers use of legal mechanisms to reduce risk of funding risky developers	Financiers/insurers <> development team
Builders are not required to have insurance for buildings over three storeys	Financiers/insurers <> development team
<i>Moa Customers</i>	
Limited access to building defects data	Customers <> development team
Optimism bias	Customers <> development team
MOA marketing strategies	Customers <> development team
Poor completion handover processes	Customers <> development team
Low customer technical expertise	Customers <> development team
Source(s): Table created by authors	

that any new regulations do not simply burden the industry with further red tape but lead to improved MOA quality. In Australia, recent regulatory reforms in the state of NSW, such as the *NSW Design and Building Practitioners Act, 2020* (NSW) and the *Residential Apartment Buildings (Compliance and Enforcement Powers) Act 2020* (NSW) are designed to address this problem. Similar regulatory reforms could be considered in other jurisdictions, although there is as yet no independent empirical evidence as to whether they are working to reduce information asymmetries in the MOA development process. Further research is therefore needed in this area.

Our results also indicate that better feedback systems are needed to ensure that all stakeholders in the MOA development process can effectively share information, identify and track defects and learn from their mistakes to improve their products and services. There is great potential for digital technologies to assist in this process at both a governmental and industry level. To some extent this is already being done in NSW Australia via the NSW Building Commission’s work in the use of AI and Digital tools in the iCIRT auditing and rating system to help reputable developers signal to considers about the high quality of their buildings and a register of building work orders and through an upgraded government NSW Planning Portal where developers must upload their design and other project documentation. However, there is further scope to develop other tools such as a digital handover platform for handing over operational and maintenance information to building owners corporations. Furthermore, given the low digital maturity of the construction supply chain there is also significant scope to upgrade the digital capability of the workforce a predominantly ad-hoc “on-the-job” type training, with no specific structured training programmes.

Developers also play a critical role in promoting quality in their MOS buildings by the way they manage and distribute risk and set project parameters (cost and time) on their projects. Developers that prioritise low price and fast programs over anything else are sowing the seeds of low quality by creating a project culture which undermines it. Currently, the financial

rewards for fast and low cost projects outweigh the penalties for poor quality. This suggests that MOA development reforms should also seek to drive a shift in culture to support a stronger focus on promoting and rewarding high quality over and above costs and time.

Our findings also indicate that a lack of government capacity to regulate the construction industry and a pervasive de-regulation ethos has enabled information asymmetry failures across the construction industry to flourish. However, while our findings indicate that more regulation relating to quality management is needed to protect MOA consumers, it must not be overly complex so that it is understandable by the multitude of small contractors that operate in the MOA sector. In this context, initiatives such as the creation of the Building Commission in NSW will help to reverse the “hollowing out” of government regulatory capacity. However, our results indicate that without addressing the under-resourcing of other branches of government with responsibility for construction and planning oversight, any reforms to the MOA development process will be constrained.

Furthermore, our results indicate that even where governments have collected industry information through regulatory processes, they have not always made good use of this data and there have been issues with sharing it across internal “silos” and with MOA customers. It is therefore difficult at the moment for customers and other MOA market stakeholders to identify the riskiest developers. This is another area where greater engagement in digital technologies and information and communication technologies such as AI could be a potentially powerful tool to improve MOA quality.

Finally, our results also indicate that third-party industry oversight is critically important in improving quality outcomes for MOA customers through greater involvement of insurers and financiers in building quality control. While findings indicate that financiers and insurers have not done this effectively, recent NSW initiatives such as the provision of ten-year decennial insurance for some apartment buildings based on a newly introduced developer and contractor rating system called iCIRT which uses AI to rank the trustworthiness of developers are important and encouraging.

In conclusion, given the many information asymmetries identified in our results, it is not surprising that MOA customers have poor visibility of defects risks. Markets work best when data on the product and its quality is readily available to consumers who can then make informed choices. This is clearly not happening in the MOA market we studied.

In building on the above conclusions, we recommend that further research be undertaken into how the information asymmetries we have identified in [Table 2](#) can be reduced. Our findings suggest that this could significantly reduce the risk of defects in MOA developments. Such research will raise further questions. For example, in countering the negative effects of de-regulation, researchers would need to understand what form re-regulation could take to avoid the risk of further burdening the industry with red tape which is also a cause of information asymmetries. In other words, the solution to one problem could exacerbate others. The new typology presented in [Table 2](#) appears linear and we suspect that there are clearly interdependencies which also need to be explored to elaborate the typology further. In this context, [Table 2](#) is presented as a basis for further research rather than a definitive model.

We finish this paper by acknowledging the limitations of our research which are set by the specific jurisdictional context of NSW Australia in which our data was collected. We acknowledge that the regulatory context in which MOA supply chains operate and that the causes and potential impacts of information asymmetries are likely to vary between countries and jurisdictions within countries. Rapid urbanisation and high demand for housing in some developing countries such as China and India can lead to rushed construction and cost-cutting measures, increasing the likelihood of defects. Weak building codes, inadequate inspections or ineffective enforcement can allow builders to cut corners and avoid accountability. Differing levels of transparency and difficulties for buyers to access information about the quality and history of a building can make it hard for them to assess the risks. And economic downturns can lead to builders taking shortcuts or abandoning projects, leaving behind a legacy of defective buildings. More international research is therefore needed to test and refine the

typology we have presented in this paper. Nevertheless, the issues considered here will be relevant in many comparable jurisdictions. There is evidence that potentially damaging information asymmetries exist in the MOA development process in many countries indicating the need for wider reform to ensure the MOA market has the information to work in the consumers' interest.

Notes

1. Environmental Planning and Assessment Act 1979 (NSW). This act is the primary planning legislation in NSW.

References

- Abisuga, O. (2020), "Integrated collaborative facilities management framework for post-occupancy evaluation of higher education facilities", Unpublished PhD Thesis, University of New South Wales, Sydney, Australia.
- Adebisi, E.O., Ojo, S.O. and Alao, O.O. (2018), "Assessment of factors influencing the failure and abandonment of multi-storey building projects in Nigeria", *International Journal of Building Pathology and Adaptation*, Vol. 36 No. 2, pp. 210-231, doi: [10.1108/IJBPA-10-2017-0048](https://doi.org/10.1108/IJBPA-10-2017-0048).
- Akerlof, G.A. (1970), "The market for 'lemons': quality uncertainty and the market mechanism", *Quarterly Journal of Economics*, Vol. 84 No. 3, pp. 488-500, doi: [10.1016/B978-0-12-214850-7.50022-X](https://doi.org/10.1016/B978-0-12-214850-7.50022-X).
- Bahrami, S. and Zeinali, D. (2022), "The sustainability challenge of product information quality in the design and construction of facades: lessons from the Grenfell Tower fire", *Smart and Sustainable Built Environment*, Vol. 12 No. 3, pp. 488-506, doi: [10.1108/SASBE-06-2021-0100](https://doi.org/10.1108/SASBE-06-2021-0100).
- Blanchard, R.L. (2022), *An Investigation and Analysis of the 2021 Surfside Condo Collapse (2022)*, University of New Orleans Theses and Dissertations. 2957, University of New Orleans, USA.
- Braun, V. and Clarke, V. (2006), "Using thematic analysis in psychology", *Qualitative Research in Psychology*, Vol. 3 No. 2, pp. 77-101, doi: [10.1191/1478088706qp063oa](https://doi.org/10.1191/1478088706qp063oa).
- CFMEU (2020), *Shaky Foundations: The National Crisis in Construction, Construction, Forestry, Mining and Energy Union*, Sydney, Australia.
- Chandler, D. (2020), "New NSW building legislation: here's the start of a new deal", *The Fifth Estate*, 30th October 2019, available at: <https://www.thefifthestate.com.au/columns/spinifex/new-nsw-building-legislation/> (accessed 9 August 2024)
- Chandler, D. (2022), "NSW Building Reforms have involved industry facing its Demons", available at: https://www.linkedin.com/posts/david-chandler-oam-875bb1b5_demons-icirt-developers-activity-6992366751258726400-2WYn/?utm_source=shareandutm_medium=member_desktop (accessed 10 February 2024)
- CIOB (2019), *Code of Quality Management*, Chartered Institute of Building, London, UK.
- Crommelin, L., Thompson, S., Easthope, H., Loosemore, M., Yang, H., Buckle, C. and Randolph, B. (2021), *Cracks in the Compact City*, City Futures Research Centre, UNSW, Sydney, Australia.
- Design and Building Practitioners Act (2020), "Design and building practitioners act 2020 No 7", available at: <https://legislation.nsw.gov.au/view/html/inforce/current/act-2020-007> (accessed 14 November 2023)
- Easthope, H. and Randolph, B. (2009), "Governing the compact city: the challenges of apartment living in Sydney, Australia", *Housing Studies*, Vol. 24 No. 2, pp. 243-259, doi: [10.1080/02673030802705433](https://doi.org/10.1080/02673030802705433).
- Easthope, H. and Randolph, B. (2016), "Principal-agent problems in multi-unit developments: the impact of developer actions on the on-going management of strata titled properties", *Environment and Planning*, Vol. 48 No. 9, pp. 1829-1847, doi: [10.1177/0308518X16650894](https://doi.org/10.1177/0308518X16650894).
- Easthope, H., Randolph, B. and Judd, S. (2012), *Governing the Compact City: The Role and Effectiveness of Strata Management* City Futures Research Centre, UNSW, Sydney, Australia.

- Easthope, H., Hynes, D., Lu, Y. and Wade, R. (2023), *Australasian Strata Insights 2022*, Sydney City Futures Research Centre, available at: https://cityfutures.adu.unsw.edu.au/documents/717/2022_Australasian_Strata_Insights_Report.pdf (accessed 4 March 2024).
- Eisenhardt, K.M. (1989), "Agency theory: an assessment and review", *Academy of Management Review*, Vol. 14 No. 1, pp. 57-74, doi: [10.5465/amr.1989.4279003](https://doi.org/10.5465/amr.1989.4279003).
- Festinger, L. (1957), *A Theory of Cognitive Dissonance California*, Stanford University Press, Stanford, USA, ISBN-13. 978-0804701310.
- Forcada, N., Macarulla, M. and Love, P.E.D. (2013), "Assessment of residential defects at post-handover", *Journal of Construction Engineering and Management*, Vol. 139 No. 4, pp. 372-378, doi: [10.1061/\(ASCE\)CO.1943-7862.0000603](https://doi.org/10.1061/(ASCE)CO.1943-7862.0000603).
- Ford, J. (2021), *After the Grenfell Fire: Who Should Pay the UK's Housing Repair Bill?*, Financial Times, March 30, available at: <https://www.ft.com/content/ff6bef28-ae58-48d5-b916-d27374fddf53> (accessed 14 May 2024).
- Garrone, P., Grilli, L. and Rousseau, X. (2013), "Management discretion and political interference in municipal enterprises - evidence from Italian utilities", *Local Government Studies*, Vol. 39 No. 4, pp. 514-540, doi: [10.1080/03003930.2012.726198](https://doi.org/10.1080/03003930.2012.726198).
- Hackitt, J. (2018), "Building a safer future independent review of building regulations and fire safety" *Final Report Presented to Parliament by the Secretary of State for Housing, Communities and Local Government by Command of Her Majesty May 2018 Cm 9607* UK Government, London, UK
- Hanmer, G. (2019), "Australia's high-rise apartments face crisis of our own making", *Financial Review*, July 25th, available at: <https://www.afr.com/property/residential/australia-s-high-rise-apartments-face-crisis-of-our-own-making-20190724-p52a8g>
- Hennink, M.M. (2014), "Focus group discussions", in Leavy, P. (Ed.), *Series in Understanding Qualitative Research*, Oxford University Press, London UK, ISBN-13. 978-0199811755.
- Ivić, I. and Cerić, A. (2023), "Risks caused by information asymmetry in construction projects: a systematic literature review", *Sustainability*, Vol. 15 No. 13, p. 9979, doi: [10.3390/su15139979](https://doi.org/10.3390/su15139979).
- Kelly, J., Male, S. and Graham, D. (2014), *Value Management of Construction Projects*, John Wiley and Sons, London, UK, ISBN-10. 1118351231.
- Lambert, M. (2015), *Independent Review of the Building Professionals Act 2005*, NSW Government, Sydney, NSW, Australia.
- Leung, B.Y., Hui, E.C. and Seabrooke, B. (2007), "Asymmetric information in the Hong Kong forward property market", *International Journal of Strategic Property Management*, Vol. 11 No. 2, pp. 91-106, doi: [10.1080/1648715X.2007.9637563](https://doi.org/10.1080/1648715X.2007.9637563).
- Levin, I. and Arthurson, K. (2020), "Living closely: residents' health and wellbeing in small multi-owned residential buildings", *Property Management*, Vol. 38 No. 3, pp. 345-363, doi: [10.1108/PM-03-2019-0013](https://doi.org/10.1108/PM-03-2019-0013).
- Li, L. and Chau, K.W. (2024), "Information asymmetry with heterogeneous buyers and sellers in the housing market", *The Journal of Real Estate Finance and Economics*, Vol. 68 No. 1, pp. 138-159, doi: [10.1007/s11146-023-09939-y](https://doi.org/10.1007/s11146-023-09939-y).
- Liu, Z., Zhong, X., Zhang, T. and Li, W. (2020), "Household debt and happiness: evidence from the China household finance survey", *Applied Economics Letters*, Vol. 27 No. 3, pp. 199-205, doi: [10.1080/13504851.2019.1610706](https://doi.org/10.1080/13504851.2019.1610706).
- Loosemore, M. and Lim, B. (2018), "Mapping corporate social responsibility strategies in the construction and engineering industry", *Construction Management and Economics*, Vol. 36 No. 2, pp. 67-82, doi: [10.1080/01446193.2017.1326616](https://doi.org/10.1080/01446193.2017.1326616).
- Love, P.E., Teo, P., Morrison, J. and Grove, M. (2016), "Quality and safety in construction: creating a no-harm environment", *Journal of Construction Engineering and Management*, Vol. 142 No. 8, 05016006, doi: [10.1061/\(ASCE\)CO.1943-7862.0001133](https://doi.org/10.1061/(ASCE)CO.1943-7862.0001133).
- Lützkendorf, T. and Speer, T.M. (2005), "Alleviating asymmetric information in property markets: building performance and product quality as signals for consumers", *Building Research and Information*, Vol. 33 No. 2, pp. 182-195, doi: [10.1080/0961321042000323815](https://doi.org/10.1080/0961321042000323815).

- Ma, S.Y.T., Edwin, H.W., Chan, A. and Lennon, H.T.C. (2018), "Evolving institutions to tackle asymmetrical information problems in the housing market: a case study on 'shrinkage' of flat sizes in Hong Kong", *Habitat International*, Vol. 75 No. 1, pp. 154-160, doi: [10.1016/j.habitatint.2018.03.009](https://doi.org/10.1016/j.habitatint.2018.03.009).
- Moore-Bick, M. (2019), *Grenfell Tower Inquiry: Phase 1 Report, Presented to Parliament Pursuant to Section 26 of the Inquiries Act 2005*, UK Parliament, London, UK.
- Nor, M. (2015), "An exploratory study of strata residential properties problems in peninsular Malaysia and how they are resolved", *Journal of the Korean Housing Association*, Vol. 26 No. 1, pp. 53-60, doi: [10.6107/JKHA.2015.26.6.053](https://doi.org/10.6107/JKHA.2015.26.6.053).
- Noredington, B. (2019), *No Australian Insurer Will Touch Cracked Apartments, Inquiry Told*, 12th August, The Australian, available at: <https://www.theaustralian.com.au/nation/when-can-i-go-home-mascot-towers-breaks-down/news-story/7487c7733eb5f8233c46a65a97a25848> (accessed 23 April 24).
- NSW Fair Trading (2023), *Strata Building Bond and Inspection Scheme*, New South Wales Government, Sydney, New South Wales, Australia, available at: <https://www.fairtrading.nsw.gov.au/housing-and-property/strata-building-bond-and-inspections-scheme> (accessed 15 November 2023).
- NSW Government (2025), "Restoring confidence in the construction industry using iCIRT to rate building professionals", available at: <https://www.nsw.gov.au/departments-and-agencies/building-commission/icirt> (accessed 5 March 2025).
- Oswald, D., Moore, T. and Lockrey, S. (2023), "Flammable cladding and the effects on homeowner well-being", *Housing Studies*, Vol. 38 No. 3, pp. 403-422, doi: [10.1080/02673037.2021.1887458](https://doi.org/10.1080/02673037.2021.1887458).
- Perera, S., Jin, X., Gunasekara, K. and Samaratunga, M. (2024), "Impact of digitalisation in construction on Australian designers and builders: a cross-analysis based on the size of organisations", *Buildings*, Vol. 14 No. 11, pp. 3607-3621, doi: [10.3390/buildings14113607](https://doi.org/10.3390/buildings14113607).
- Randolph, B., Crommelin, L., Loosemore, M. and Easthope, H. (2024), "Regulation, deregulation and reregulation: the apartment quality crisis in Sydney", in Toner, P. and Rafferty, M. (Eds), *Captured! the Political Economy of Australian Neoliberal Public Policy*, Sydney University Press, Sydney, pp. 130-143, ISBN: 9781743329801.
- Rehm, M., Cheung, K.S., Filippova, O. and Patel, D. (2020), "Stigma, risk perception and the remediation of leaky homes in New Zealand", *New Zealand Economic Papers*, Vol. 54 No. 1, pp. 89-105, doi: [10.1080/00779954.2019.1631878](https://doi.org/10.1080/00779954.2019.1631878).
- Riazi, S., Zainuddin, M., Nawi, M., Musa, S. and Lee, A. (2020), "A critical review of fragmentation issues in the construction industry", *Talent Development and Excellence*, Vol. 12 No. 2, pp. 1510-1521, ISSN 1869-2885.
- Rosewall, T. and Shoory, M. (2017), *Housing and Apartments in Australia*, Reserve Bank of Australia Bulletin, June quarter, Reserve Bank of Australia, Sydney, Australia.
- Saunders, B., Sim, J., Kingstone, T., Baker, S., Waverfield, J., Bartlam, B., Burroughs, H. and Jinks, C. (2018), "Saturation in qualitative research: exploring its conceptualization and operationalization", *Quality and Quantity*, Vol. 52 No. 4, pp. 1893-1907, doi: [10.1007/s11135-017-0574-8](https://doi.org/10.1007/s11135-017-0574-8).
- Schneider, K., Laedre, O. and Lohne, J. (2016), "Challenges found in the handover of commercial buildings", *Social and Behavioural Sciences*, Vol. 226 No. 2, pp. 310-317, doi: [10.1016/j.sbspro.2016.06.193](https://doi.org/10.1016/j.sbspro.2016.06.193)
- Schultz, C.S., Jørgensen, K., Bonke, S. and Rasmussen, G.M.G. (2015), "Building defects in Danish construction: project characteristics influencing the occurrence of defects at handover", *Architectural Engineering and Design Management*, Vol. 11 No. 6, pp. 423-439, doi: [10.1080/17452007.2014.990352](https://doi.org/10.1080/17452007.2014.990352).
- Shergold, P. and Weir, B. (2018), *Building Confidence: Improving the Effectiveness of Compliance and Enforcement Systems for the Building and Construction Industry across Australia Report to the Building Ministers*, Forum, Sydney, Australia.

- Spence, M. (1973), "Job market signalling", *Quarterly Journal of Economics*, Vol. 87 No. 3, pp. 355-374, doi: [10.2307/1882010](https://www.jstor.org/stable/1882010), available at: <https://www.jstor.org/stable/1882010>
- Stiglitz, J.E. (2000), "The contributions of the economics of information to the twentieth century economics", *Quarterly Journal of Economics*, Vol. 115 No. 4, pp. 1441-1478, doi: [10.1162/003355300555015](https://doi.org/10.1162/003355300555015).
- UK Government (2025), "Policy paper: Grenfell tower inquiry phase 2 report: government response", *Ministry of Housing, Communities & Local Government*, UK Government, London, UK.
- Watt, D.S. (2007), *Building Pathology: Principles and Practice*, 2nd ed., Blackwell Publishing, Oxford, UK, ISBN: 978-1-444-31403-8.
- Wilson, W. and Rhodes, C. (2017), *New-build Housing: Construction Defects - Issues and Solutions (England)*, House of Commons Library Briefing Paper No. 07665, London UK.

Further reading

- Ceric, A. (2013), "Application of the principal-agent theory to construction management: literature review", Smith, S.D. and Ahiaga-Dagbui, D.D. (Eds), *Proceedings 29th Annual ARCOM Conference*, Association of Researchers in Construction Management, Reading, UK, 2-4 September 2013, pp. 1071-1081.
- Easthope, H. (2019), *The Politics and Practices of Apartment Living*, Edward Elgar Publishing, London UK, ISBN: 978 1 78643 807 2.
- Easthope, H., Randolph, B. and Judd, S. (2009), *Managing Major Repairs in Residential Strata Developments in New South Wales*, City Futures Research Centres, UNSW, Sydney, Australia.
- Ford, M. (2016), *Lidcombe Unit Owners Face \$2.6m Storm Damage Bill after AIG Insurance Rejects Claims*. ABC News, 8 April, available at: <https://www.abc.net.au/news/2016-04-08/lidcombe-unit-owners-face-storm-damage-bill,-insurance-bid-fails/7312578> (accessed 24 April 2024).
- Guilding, C., Warnken, J., Ardill, A. and Fredline, L. (2005), "An agency theory perspective on the owner/manager relationship in tourism-based condominiums", *Tourism Management*, Vol. 26 No. 3, pp. 409-420, doi: [10.1016/j.tourman.2003.11.021](https://doi.org/10.1016/j.tourman.2003.11.021).
- Johnston, N. and Reid, S. (2019), *An Examination of Building Defects in Residential Multi-Owned Properties*, Deakin University, Melbourne, Australia.
- Mills, A., Love, P.E.D. and Williams, P. (2009), "Defect costs in residential construction", *Journal of Construction Engineering and Management*, Vol. 135 No. 1, pp. 12-16, doi: [10.1061/ASCE0733-9364](https://doi.org/10.1061/ASCE0733-9364).
- Neubauer, B.E., Witkop, C.T. and Varpio, L. (2019), "How phenomenology can help us learn from the experiences of others", *Perspectives in Medical Education*, Vol. 8 No. 2, pp. 90-97, doi: [10.1007/S40037-019-0509-2](https://doi.org/10.1007/S40037-019-0509-2).
- New South Wales Government (2021), *Construct NSW Improving Consumer Confidence: Research Report on Serious Defects in Recently Completed Strata Buildings across New South Wales*, New South Wales Government and Strata Community Association NSW, Sydney, Australia.
- Randolph, B. and Easthope, H. (2014), "The Rise of Micro-Government: strata title, reluctant democrats and the new urban vertical policy", in Gleeson and Band Beza, B. (Eds), *The Public City: Essays in Honour of Paul Mees*, Melbourne University Press, Melbourne, pp. 210-224, ISBN 9780522867305.
- Richardson, B.A. (2002), *Defects and Deterioration in Buildings: A Practical Guide to the Science and Technology of Material Failure*, Routledge, London, doi: [10.4324/9780203042748](https://doi.org/10.4324/9780203042748).
- Shoory, M. (2016), *The Growth of Apartment Construction in Australia*, Reserve Bank of Australia, Sydney, Australia.

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