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Sky-high risk: The impact of high-rise construction in Australia

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Executive summary

Skylines in Australian cities have undergone a rapid evolution in recent years, and it seems that trends affecting high-rise construction have changed as dramatically as the landscape itself.

High-rise building construction appears to be continuing strongly for the time being. At the time of writing, 33 buildings over 150 metres are currently proposed, in planning, approved, or under construction in Australia.

This paper considers how factors such as the COVID-19 pandemic, cladding issues, defective works and the tightening insurance market are impacting developers' and owners' plans.

The risks and insurance challenges specific to, and exacerbated by, high-rise construction in Australia are highlighted. Risks, such as fire and escape of water, and issues, ranging from defective works to the dangers of tower cranes, are considered, as are risk transfer and mitigation strategies. In particular, how trends in the post-Grenfell and Lacrosse landscape could see an evolution away from taller buildings of 50 storeys or higher, to mixed-height developments of under 40 storeys, are noted.

It is recommended that stakeholders in this area of construction continue to focus on mitigating these associated risks that can lead to project delays and significant reinstatement costs, irrespective of the wider macro-social, political and economic factors that are bearing down on the sector. Equally, while the tightening of the construction insurance market is a serious concern for all stakeholders, some cost increases could be mitigated by engaging early with the market and submitting detailed risk management strategy reports.

In conclusion, while planned projects could be affected by many factors, including the COVID-19 pandemic and uncertainty around building regulations, this paper details why the construction of high-rise buildings is expected to continue in the long term in Australia.

Recent trends affecting high-rise construction

High-rise owners and developers are facing a uniquely challenging landscape.

COVID-19 pandemic

The Australian construction industry was caught off guard when the first COVID-19 lockdown came into force in March 2020. Some project starts were delayed, but overall, there were fewer hold-ups than initially feared.

Site shutdowns and pandemic-related delays have been regarded as short-term challenges by developers. According to ABS data*, New South Wales and Victoria are the strongest drivers of high and super high-rise dwellings as well as the two states that have been most affected by lockdowns. Typically, these developments proceed only when forward sales are made and the pandemic has put pressure on inner city apartment sales with the wider adoption of flexible and remote working arrangements making suburban property a more realistic option for many buyers. In the corporate realm, which sees a greater proportion of speculative developments, some companies have re-aligned their approach to echo that of residential developers, and are aiming to have tenants in place before they start a build.

However, the logistics related to mitigating the effects of the pandemic could still affect projects under construction. For example, a super high-rise project might take four years to build instead of three due to the need to keep workers socially distanced. With longer build times increasing construction costs, this could have the potential to put a brake on new projects. However, according to a recent Procore/Property Council of Australia report only 4% of respondents were concerned about shrinking project pipelines (Source: The Data Differentiator – Procore/Property Council of Australia.

Changing customer needs

The pandemic-related shift to remote working looks likely to continue. At the peak of lockdown in April 2020 and again in 2021 during the second wave, which especially impacted Melbourne and Sydney, almost half of the workforce worked from home either exclusively or partially. According to the ABS 80% of businesses offering work-from-home arrangements expected this to continue long term. This development has prompted changes in residential developments, with dedicated home office spaces being introduced into more new builds. Depending on the availability of space, this could be at the expense of bedrooms or ensuite bathrooms.

Businesses are also re-examining their use of office space in a post-pandemic world, where working from home is the norm, rather than the exception. Considerations include the downsizing of premises, and favouring layouts that prioritise meeting areas and hot-desking spaces, over traditional banks of desks.

Environmental, social, and corporate governance (ESG)

ESG is a hot topic in risk and insurance conversations in the construction sector, with the transition to net zero bringing specific challenges and opportunities to owners and developers. The use of non-traditional green building materials could result in higher construction insurance costs, if these materials are classed as “unproven” by underwriters. This continues to be a friction point between an innovative construction industry and a capacity-stricken insurance industry. More work is needed for insurers to accommodate the evolving needs of the industry as it finds ways to lessen the environmental impact of construction and the built environment.

Read more: Building with Cross-Laminated Timber

Cyber risks

As buildings become increasingly connected, they become more vulnerable to attacks by cyber criminals. Awareness of the possibility of digital strikes may have grown, but so has the amount of connectivity within developments.

Vulnerabilities can arise during construction in the computer-based control systems installed in buildings that regulate and monitor its mechanical and electrical equipment, such as ventilation, lighting, power, fire, and security systems. Often, these systems are installed by different contractors who may lack specialist knowledge of their software or computer hardware elements. This means that building management systems and "internet of things" - connected computers - could fall through the gap between an organisation's IT department and the mechanical and electrical contractors who maintain building services.

The theft of sensitive business information, eye-watering ransomware demands, hefty financial penalties, and significant reputational damage can all arise from a lack of attention paid to construction cyber risks.

Structural defects

Australia has seen several high-rise buildings with highly publicised identified defects causing much stress to owners, occupiers, contractors, designers, and everyone else involved. While each case includes its own set of circumstances and intricacies, in the current environment we see increasing focus on this area. As each case progresses through the legal system, it is becoming clearer where legal negligence lies. It is an important part of the overall risk profile of a high-rise project and arming yourself with knowledge puts businesses in the best possible position to make educated commercial decisions.

Read more: Structural Defects in High-Rise Construction

Combustible cladding

New laws for buildings with external combustible cladding have been introduced across Australia following the 2019 Victorian Civil and Administrative Tribunal (VCAT) decision on the 2014 Lacrosse apartment fire – where a fire caused by a cigarette spread across 14 floors of the external face of the building in less than 13 minutes resulting in over $13 million in damage – and the Grenfell Tower tragedy in London in 2017.

Each state has managed the issues slightly differently via their individual building codes, but the common theme is a significant audit of existing cladding systems with many rectification projects underway. Further, new projects are under scrutiny to ensure that the cladding systems and materials are compliant with updated standards.

Tightening of the Australian construction insurance market

Background

The Australian construction insurance market has recently gone through a state of transition, from a market that has experienced generally stable or declining pricing for over a decade, to one in which prices are mostly rising. This trend is driven by:

- Changing market appetite towards shorter-term risks
- Reduction in available capacity from specialist construction insurers
- Limited desire to chase market share, despite rising prices
- Series of losses impacting profitability
- Underwriters returning to technical rating models

The construction market started transitioning in late 2018, with 2020 being the second consecutive year of increased terms and conditions. The COVID-19 pandemic and continuing losses have inevitably had an influence on this transitioning, although it is too early to conclude to what extent.

While capacity has been restricted, all but the largest of risks will attract multiple lead quotes. Whereas the terms and conditions would have looked very homogeneous in the softer market, the spread of both pricing and coverage has grown significantly, leading to some large, complex project placements being placed on split differential terms in extreme cases.

Domestic market appetite for annually-renewable construction business remains strong. Increased pricing and more restrictive coverage have been broadly consistent irrespective of whether a client is an owner, developer, or contractor. Greater scrutiny of risks and internal referral processes have also led to increased placement process timescales for clients.

Impact on developers

Within this context, up until early 2018, placing construction insurance for high-rise projects was a fairly straightforward process. Now, it is a great deal more challenging, particularly for complex projects and those involving extensive fit-out works to existing buildings.

Water damage on high-rise construction sites continues to cause significant losses to insurers. This has led to insurers seeking to impose much stricter policy conditions and, in some cases, conditions precedent to policy liability. Escaping water claims dominate loss ratios in the residential sector accounting for 40% of all claims (Source: Chubb Water Leaks Report), and brokers are seeing instances where water damage is being excluded from policies in its entirety or significant deductibles imposed.

Insurers are keen to work with brokers to identify sites that perform poorly from

a claims perspective. We see UK markets encouraging clients to follow the advice in Managing Escape of Water Risk on Construction Sites, the guide issued by the Construction Insurance Risk Engineer Group (CIREG), and endorsed by the UK CAR Underwriters Group (UKCA). For example, one key lead insurer now insists on automatic water shut-off valves as a policy condition. Given the capacity provided by UK markets it is possible that Australia will see the adoption of a similar strategy.

Since the Lacrosse building fire in 2014 and the Grenfell Tower fire in June 2017, underwriters have been extremely cautious where cladding is used. They seek a greater understanding of full construction methods, with focus on the composition and installation of cladding, particularly with projects that are more than 18 metres high. However, insurers are also helping owners and managers control risks, such as deploying 24-hour fire wardens in areas where cladding has been fitted.

Outlook

In general, the outlook for the Australian market is more of the same. It is unlikely that rates will plateau until there is more lead market competition for risks. However, it is likely that there could be a slowing of rate increases in some sectors, as policy changes start to take effect. Underwriters will continue to focus on long-term policy period extensions and reinstatements and Delay in Start Up coverages, specifically in relation to infectious disease and denial of access extensions. There will also be upward pressure on policy excesses and restrictions on design and maintenance coverage, along with the inevitable further influence from COVID-19, as the true economic impact begins to be seen.

How to navigate a challenging construction insurance market

In a contracting market, it is never too early to start offering a project to insurers. Owners and developers who leave their insurance to the last minute may well have to weather the worst of the premium increases and diminished coverage that characterise a transitioning market. However, by working closely with a broker and putting in time before going to market, construction professionals can minimise rate increases and restrictions in coverage.

Compiling presentations for insurers has become more important and more time consuming. Underwriters are looking for increasingly detailed information from construction firms regarding their business operations, supply chain processes, and project risk management.

Nonetheless, by allowing plenty of time to secure insurance, construction companies can make best use of their brokers' technical expertise and market relationships, enabling them to differentiate their projects from those of their competitors.

Hitting the heights

The graph below shows the number of buildings over 150 metres in Australia. Of these projects, 46 are proposed or under construction, indicating how Australia's city skylines are set to be transformed over the next decade.

The height of Australia's city skylines remained largely unchanged during the 1980s and 1990s, with only four projects — Rialto Towers, 101 Collins Street, 120 Collins Street and Central Park Tower — being completed at a height of more than 250 meters.

By contrast, since 2000, high-rise construction has steadily increased. Currently, the Q1 Tower on the Gold Coast is Australia's tallest completed building, standing at approximately 322.5 metres or 78 storeys. The proposed Southbank by Beulah Tower 1 project, estimated to be completed in 2027, is set to take the record, reaching 366 metres or 102 floors.

Australian city skylines lags those of global cities like New York, Dubai, and Hong Kong. This is due to several factors including its historic landscape, the protection of landmarks, and regulations related to building height. However, opportunities are becoming available to build skyscrapers higher than ever, putting greater focus on the need to mitigate the associated risks.

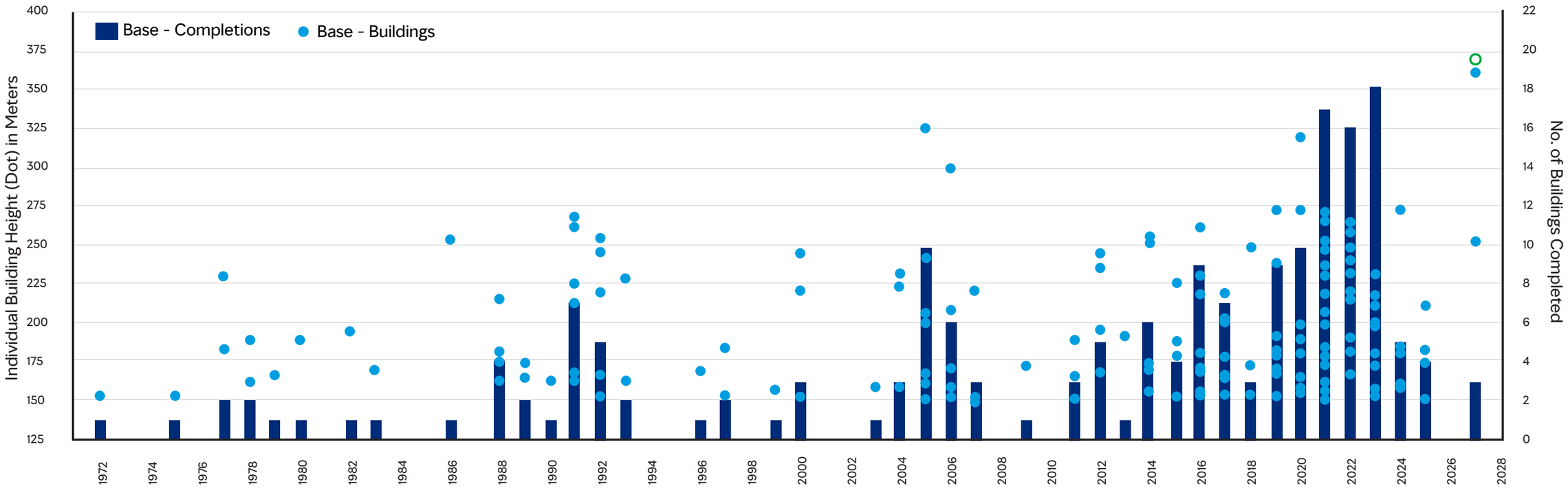
Read more:

Managing costs - Discover how Principal Controlled Insurance Programs are helping owners and developers manage their construction insurance costs.

Tall Buildings and Urban Habitat - Learn about the latest tall buildings being planned and constructed globally and how they are affecting the urban built environment.

Building Completions Timeline

Source: https://www.skyscrapercenter.com/country/Australia



High-rise buildings: Specific risks

Constructing upwards involves considerable risk. Building a high rise is complex, increases the potential severity of many traditional construction risks, and presents other hazards that are unique to these projects. Property developers need to be aware of the dangers linked to high-risk construction and take steps to mitigate losses that could occur.

The rise in the number of high-rise projects has increased the instances of certain perils before, during, and after construction. There are several risks that developers and contractors need to consider transferring via insurance to remove it from their balance sheets.

Escaping water and fire risks

The escape of water is responsible for some of the largest construction claims, and the possibility of fire and escaping of water both represent significant risk to a project's practical completion date. Either one of these events has the potential to cause severe damage to the work and significant delays. This risk is multiplied in a high-rise building, due to the high concentration of value in a single structure.

Escaping water is an issue particularly during the installation and testing phase of bathrooms, washrooms, and sprinkler systems. Water damage can cause substantial claims if leaks go undetected, as it can impact several floors of a building and has the potential to damage equipment, such as generators and cables, located in basements. In the UK, the Construction Insurance Risk Engineers Group (CIREG) in conjunction with the Construction All Risks Underwriters Group has produced a best-practice guide that provides valuable insight advice on avoiding water damage claims. While the equivalent has not been developed yet in Australia, we have seen local insurers referencing this guide.

With projects and buildings being more sparsely occupied during the COVID-19 pandemic, escaping water risks could increase due to reduced numbers of personnel working on a project. With fewer workers on hand to spot escaping water incidents, developers need to consider alternative systems for detecting leaks.

Terrorism

Construction sites can be targeted by terrorists to cause disruption and threaten economic growth. Tall buildings carry a concentration risk, as they are typically located in urban areas, meaning there is a greater risk of damage to property and injury to people due to falling debris. Developers need to consider protecting their assets with adequate site safety and security.

Post-construction, tall towers have proved to be targets for attacks in the past, such as the World Trade Center on 11 September 2001. The safety of workers is also of paramount importance. Contractors will likely have many workers on site at any one time and need to think carefully about adequate safety measures and what to do in response to terrorist threats. Furthermore, they should strongly consider terrorism insurance to reinstate construction works in the event of an attack.

Proximity to third parties

In addition to risks within a site, property developers are exposed to several third-party risks during high-rise construction. These projects generally involve working within constrained building sites in densely populated urban areas and are in close vicinity to third parties, heightening risks to people, neighbouring properties, and businesses. Therefore, consideration needs to be given to third-party liability limits of indemnity, considering the factors mentioned above.

A significant event, such as a tower crane collapsing, could cause enormous third-party property damage, injury, and death. Several factors need to be kept in mind with regards to third-party risk, including:

- Litigation costs are increasing and need to be considered in the limits of insurance purchased
- Any claim that settles above the limit purchased becomes a balance sheet risk for the developer or contractor
- Developers should also pay attention to the surrounding public realm and infrastructure, such as walkways, landscape gardens, play areas, and statues. Possible damage to this third-party property should be considered
- The delivery of materials to a site carries risks to cyclists, pedestrians, and other vehicles

Rail

Projects may be adjacent to existing rail and underground lines or rail assets may need to be relocated. Debris or materials falling on tracks can cause significant delays for rail operators, meaning developers could be liable for high costs, including travel disruption and damage to infrastructure.

For works or temporary works that are within the Rail Corridor, developers may need to agree contractually under an asset protection agreement (APA) to indemnify rail operators for risks, such as damage to property, injury, and disruption to the railways.

There is usually a requirement for developers to purchase a minimum level of liability cover, typically at a limit of $250 million. Other operators may not suggest a limit or cap to the developer's liability, meaning even higher limits should be considered. Developers also need to consider instances where a non-damage event causes a temporarily closure of a train line, meaning the developer can be liable for costs to train operators. In this non-damage scenario, a standard third-party liability insurance policy is highly unlikely to respond, and other steps, including specialist insurance coverage, should be taken to mitigate these risks.

Environmental liability

This can also arise from environmental damage. Undertaking construction works in an urban area can give rise to several significant environmental risks, especially as developments are often near waterways, such as major rivers or bays. Ground vibration from the works can trigger pollution liabilities, arising both from so-called “sudden and accidental” events, and from gradual pollution events.

In Australia, environmental protection authorities in each state and territory can mandate on-site and off-site statutory clean-up and remediation and that of third-party and non-owned property and natural resources. These costs can be significant. To mitigate this, contractors’ pollution liability policies are a solution. These are designed to cover the liabilities arising from new pollution conditions, caused by the project development works, and liabilities arising from the inadvertent mobilisation or exacerbation of any known or unknown historic contamination associated with the site.

Examples of such mobilisation include piling, which can create a pathway for the migration of pollution to groundwater, and the taller the building, the deeper the pilings will need to be. It also includes windblown contamination arising from demolition, ground, and enabling works.

Delay

Whether a development project will be finished on time is often questioned throughout the construction phase. The financial consequence for a delay in completion can be colossal. It can result in loss of revenue, continuing debt service payments, and, in some cases, the cost of alternative accommodation. Consideration of Delay in Start-Up (DSU) insurance to provide consequential financial loss cover in the event of a delay taking place is recommended.

Contractor insolvency also carries a delay risk due to the additional time and costs involved in securing a replacement contractor. While the exposed contract works will often be covered under a project insurance policy, the increased costs and resulting time delays can be uninsurable.

Read more:

Delay in Start-Up Insurance

Other risks to consider

In addition to the property damage and liability risks discussed, the cost and complexity of high-rise buildings calls for increased attention to the following:

Latent and inherent defects

These are defects discovered after the completion of the project, once the building is operational. There can be significant balance sheet exposure if these defects manifest themselves. Developers have become increasingly concerned about inherent defect risks, especially regarding curtain wall facades, cladding, and double glazing. These made-to-measure units are assembled on site but might be manufactured overseas. Once the building is complete and operational, if these critical items fail, the developer could incur enormous unforeseen costs to repair the damage, especially if there is no recourse against the manufacturer. Even if there is recourse, these claims could be tied up in court for years, and, furthermore, suing overseas companies in certain territories can be difficult.

In the event of these failures and others, inherent defects insurance provides long-term balance sheet protection. The policy will protect the developer, cover repair of the issue, and then the holder will try to subrogate from the relevant contractors, subcontractors, manufacturers, and consultants.

Professional indemnity

Following the Lacrosse Fire in Melbourne and Grenfell Tower fire in the UK, the professional indemnity (PI) insurance market has seen an increase in cladding-related claims. This has resulted in restrictions on limits or cover being applied to many consultants' and contractors' PI policies. As PI is underwritten annually on a claims-made basis, this will apply to any new claim or potential claim circumstance advised and reduces the likelihood of a claim being fully, or even partially, paid. The exclusions being included on many policies extend far greater than cladding, but to all non-compliant materials.

Mitigating and transferring high-rise construction risks

The risks associated with high-rise construction are often greater than those connected with other projects due to the complexities around working at height, the concentration of high-value assets, and the location of many of the projects. While mitigation measures should be established before and during the project to reduce the chance it will fall foul of the risks discussed, insurance solutions are also available to cover many of these eventualities.

Transferring the risks and removing them from the balance sheet is an efficient use of capital and a sound risk management strategy. However, it is important to ensure the insurance strategy reflects the requirements of the building contracts and sub-contracts. As discussed, types of insurance coverage that may be considered for the risks associated with high-rise construction project s, include:

- Contract Works
- Third-party liability
- Delay in start-up
- Terrorism
- Professional Indemnity
- Environmental liability
- Latent/inherent defects cover
- Industrial Special Risks

Conclusion

The shortage of land available for building close to Australian capital cities, combined with the demand for homes and office space, makes high-rise construction an interesting prospect for owners and developers.

In recent years, traditional challenges, such as logistical issues in terms of getting materials to site, and the difficulties around building in confined areas, have been compounded by a new generation of risks. These include the COVID-19 pandemic, changes to building regulations, workforce challenges, materials shortages, and the tightening of the construction insurance market.

In some cases, the risks associated with constructing high-rises are not considered sufficiently until it is too late. Owners, developers, and contractors should give considerable attention to this specialised area of risk because if something does go wrong during the construction phase, it has the potential to be catastrophic, from a damage, liability, and delivery perspective.

It is therefore critical at the outset of a construction project that the correct insurance advice is sought and a sound risk management strategy is adopted.

HOW CAN WE HELP?

Marsh Specialty supports Australian construction companies to better understand and transfer risks while reducing volatility. Our team of industry specialists take a consultative approach, working with our clients to deliver risk and insurance solutions tailored to the industry's unique and evolving risk exposures.

To ensure the best representation of your business to the insurance market, our Marsh Specialty model provides a dedicated account management team with on-demand availability and access to risk specialists from various Marsh divisions, based on your project requirements and business needs.

For more information on any of the topics in this report please contact your Marsh insurance advisor.

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