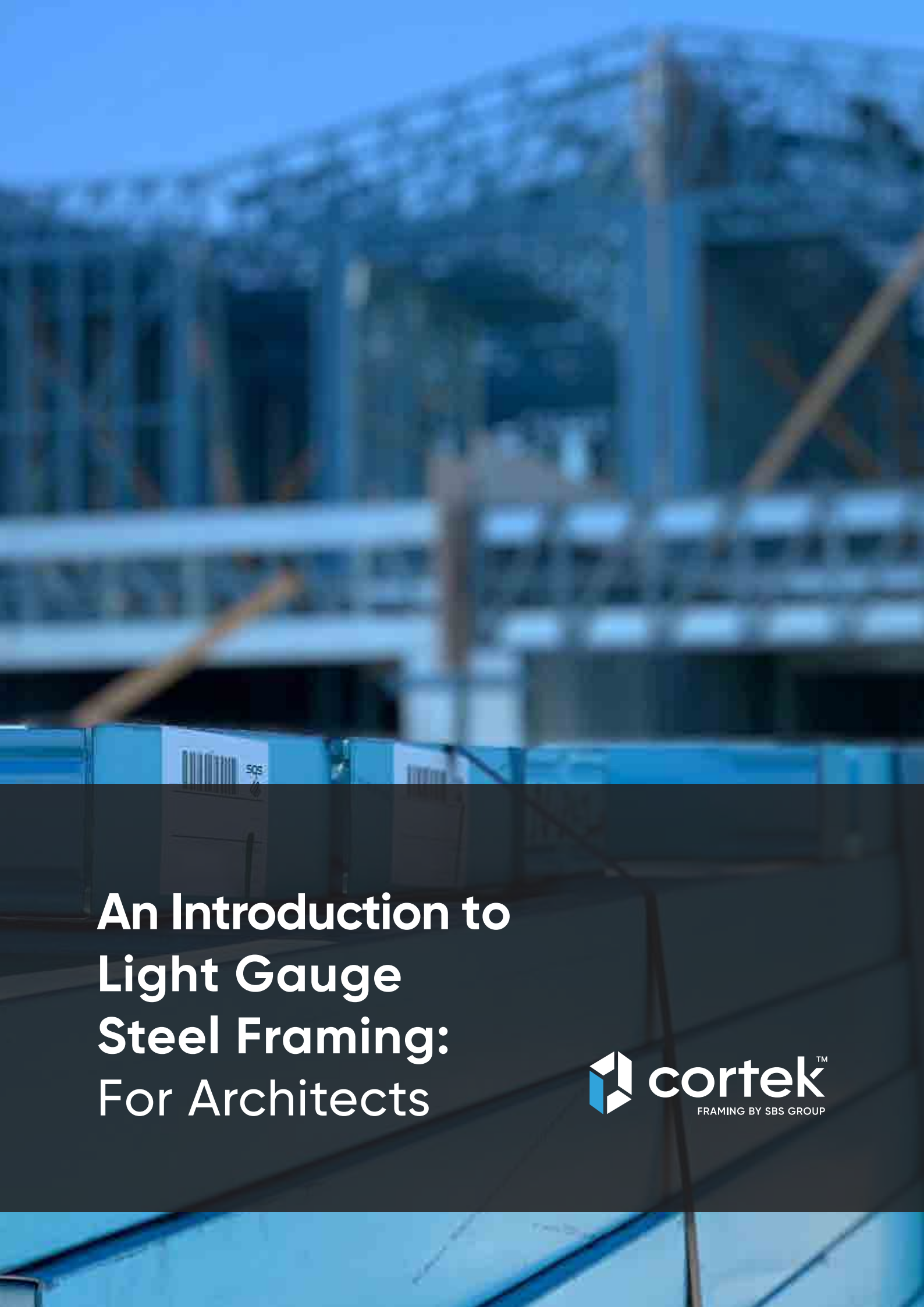

An Introduction to Light Gauge Steel Framing: For Architects

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FRAMING BY SBS GROUP

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Welcome

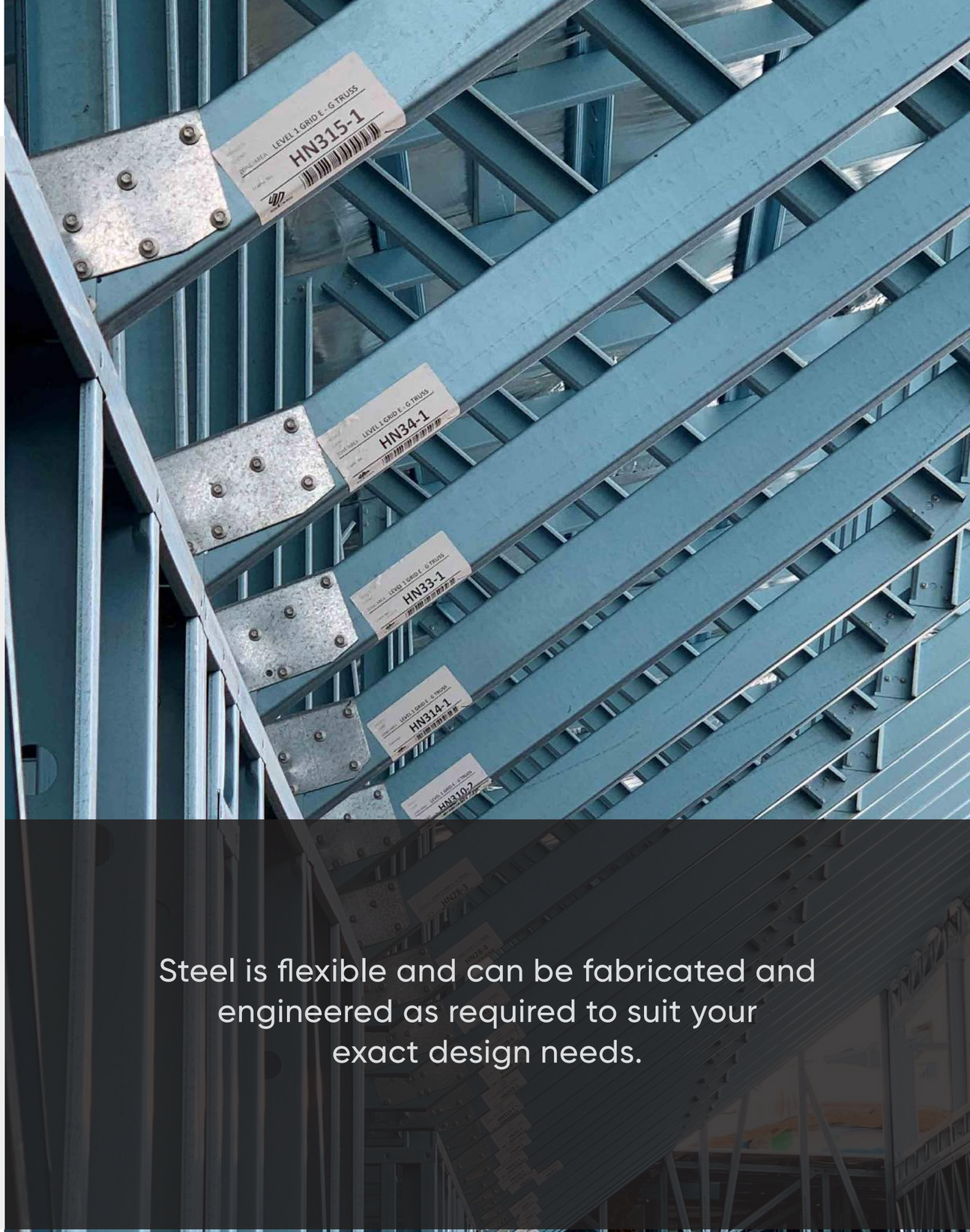
Whether you're working on a single home or multi-residential construction project, your choice of materials has a big impact on the final result. From the scope of the design, to on site installation and longevity, the right material plays a big part. It can also be the difference between your project exceeding expectations, meeting the required codes and standing the test of time – or unfortunately failing to do so.

Light gauge steel framing is rapidly gaining momentum as the material of choice for a growing number of architects and designers alike. Working with light gauge steel (LGS) framing for structural walls, floor joists and roof trusses offers a host of non-combustible benefits during both the design and construction phase. Maybe you've heard about LGS framing but haven't explored it further? Or perhaps you have some understanding of the benefits but are not sure whether it's worth making the change from traditional timber alternatives? Either way, if you're an architect looking for new ways to drive innovation and efficiency with non-combustible materials, read on to discover how LGS framing can give your projects the edge.

What is Light Gauge Steel Framing?

At Cortek, we use light gauge steel as it has a far superior corrosion resistance than many other commonly used materials. Steel is non-combustible and is suitable for use on residential and commercial projects of all relevant applications.

Importantly, it is also flexible and can be fabricated and engineered as required to suit your exact design needs. This opens the door for increased design possibilities and smarter efficiencies across the entire project.



Steel is flexible and can be fabricated and engineered as required to suit your exact design needs.

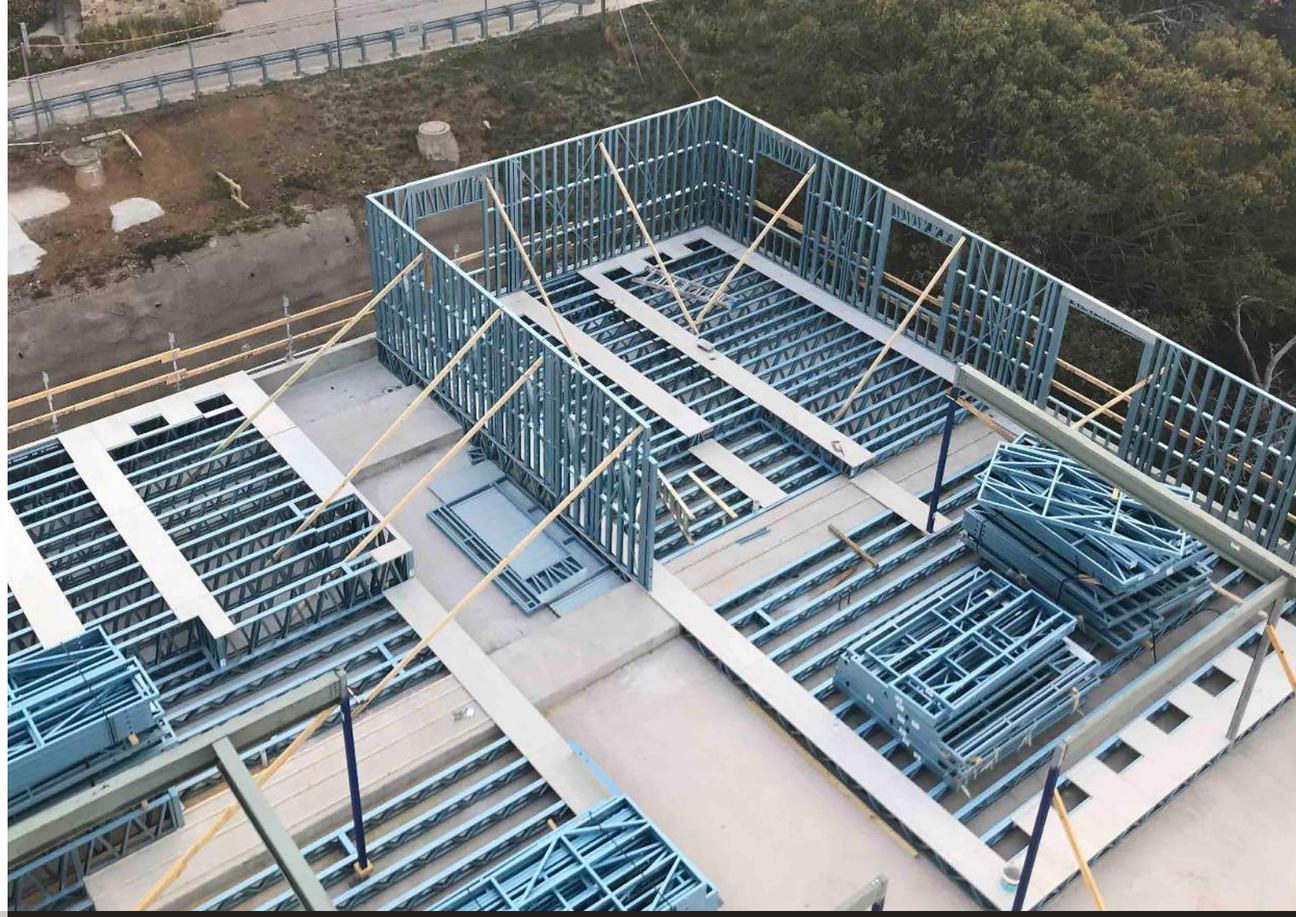
Benefits for the Architect

Working with non-combustible LGS framing allows for design flexibility that is not possible with traditional timber framing solutions. The high strength-to-weight ratio reduces the need for intermediate columns and load-bearing walls. This gives the ability to utilise long spans and allows you to incorporate services within the floor.

The bonus of greater open spaces is a feature of many of the most impressive modern buildings of today.

Blue steel framing can also help you tick many of the boxes when it comes to quality, longevity and compliance. It is straight and true, termite proof and provides enhanced corrosion resistance, which gives developers and homeowners complete confidence that it will perform and stand the test of time. It is also non-combustible (which can enable your design to meet the requirements of building in high bushfire risk areas) and is rigorously tested to ensure compliance with Australian Standards.

1. High strength-to-weight ratio
2. Long spans for greater open spaces
3. Termite proof and resistant to corrosion
4. Incorporation of services
5. Non-combustible
6. Straight and true



Working with Steel on Site

On site, the benefits are clear too. Steel framing is pre-fabricated in our controlled factory environment, with precision and accuracy, then passed through our QA check and delivered to site ready to be installed. Many builders find our lightweight frames are faster and easier to handle and fit than traditional framing choices such as timber and or complex heavy structural steel.

The speed of installation and reduction in labour can result in substantial time and cost savings on larger projects.

In tight spaces or difficult sites, the streamlined installation process of the lightweight framing also makes a big difference. And because pre-fabricated framing is straight, accurate and true, the time spent on adjustments is minimal and material wastage significantly reduced.

FAQs About Steel Framing

If you're like most architects, you've likely got a few questions about the suitability of light gauge steel for your next project. Here are some of the more common questions we get asked.

1 Is light gauge steel framing strong enough for structural walls and multi-level buildings?

Yes. Steel is strong by nature and we use steel which is manufactured to meet Australian Standards. Our framing systems are engineered to meet the relevant structural requirements of the National Construction Code and are regularly used for wall and roof framing across a vast array of single-storey and multi-level developments as applicable.

2 How much design flexibility will I have if I choose to work with blue steel framing?

A lot! Pre-fabricated LGS frames can be manufactured to the exact design specifications of almost any residential and commercial building project you can think of. The high strength-to-weight ratio and flexibility also allows for wide spans, open spaces and architectural rooflines which may not be otherwise possible when traditional timber or structural steel is used.

3 Can light gauge steel framing be used in areas with a high bushfire risk?

Yes. Steel framing can help you achieve compliance when building in high-BAL areas or even flame zone areas. And importantly, a steel frame is non-combustible, which means if a fire does occur in the building it will not contribute to the spread of the flames or smoke.

4 How durable is light gauge steel framing?

Very. By protecting against corrosion, steel framing has a long and almost maintenance-free lifespan.

5 Is blue steel framing termite resistant?

Yes. Fabricated steel frames are by nature termite, borer and fungus proof and do not need to be treated with insecticides. Steel frames satisfy the requirements of the National Construction Code for termite resistant materials.

As per the building code and applicable areas, other additional termite barriers may need to be installed to protect other building materials on the project.

6 How can I be sure of the quality of pre-fabricated light gauge steel framing?

Our pre-fabricated frames are detailed and engineered precisely to the relevant AS codes and accurately utilising the latest design software. Framing is manufactured by our experienced team to ensure quality control.

We only use steel that complies with the applicable construction codes and with all Australian Standards. Steel is straight and true and will not shrink or warp in the future.

7 Will a building experience much movement when steel framing is used?

Blue steel frames will not shrink or swell when installed as they do not go through a process of absorbing moisture and drying out. In the longer term, buildings constructed with steel framing are less likely to experience windows and doors that stick and jam as the light gauge steel will not twist, shrink or warp. Steel framing does contract and expand in response to temperature changes, but it does so at a rate like other materials commonly used in buildings and is unlikely to cause any cornice cracking or noise.

8 Is light gauge steel framing faster to install?

This is project dependent, but the speed and ease of installation is one of the key benefits often highlighted by project managers who use blue steel frames. Installation can be completed faster than traditional stick build methods because the steel framing does not require any further straightening or packing out once installed. The lighter weight of blue steel framing makes it easy to handle, which can bring further time savings.

9

Can pre-fabricated steel frames be used in designs where thermal efficiency is required?

Yes. Through insulation, lining and appropriate cladding, steel framing can be installed to deliver varying levels of thermal efficiency.

10

Does pre-fabricated steel framing cost more than other materials?

Every project is unique, and when comparing prices, it's important to look at the overall cost of the project. While steel framing may appear to cost more than timber, the cost savings due to faster installation, reduced labour and structural steel and installation costs make overall construction cheaper. Long-term durability and non-combustibility also play an important factor in providing excellent value.

Relevant Building Codes and Standards

Our pre-fabricated steel framing complies with all the relevant building codes and Australian Standards including:

National Construction Code (NCC):

- Volume One – Class 2 – 9 Buildings
- Volume Two - Class 1 and Class 10a Buildings

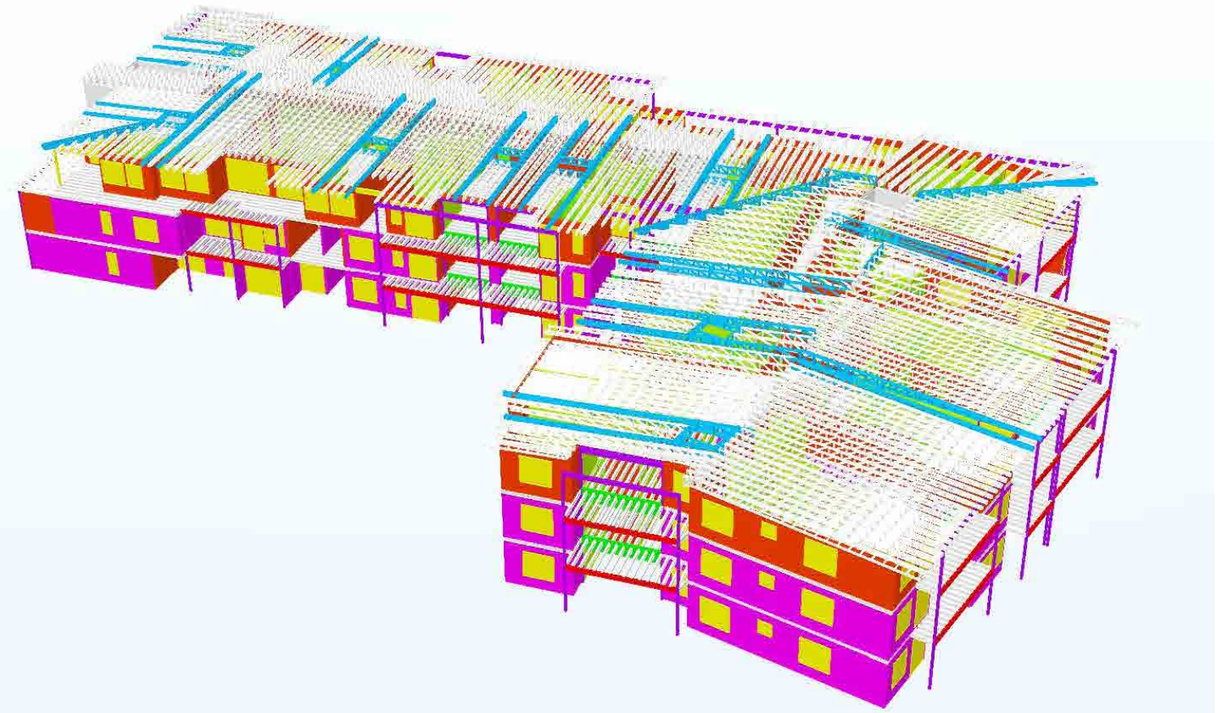
AS/ NZS 1170 series – Minimum design loads on structures

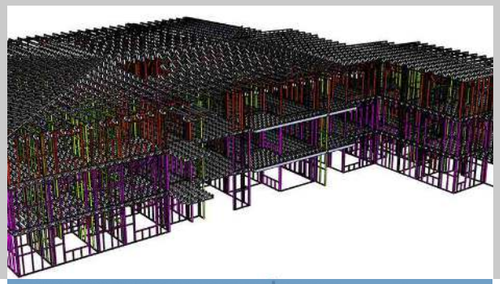
- AS 1397 - Continuous hot-dipped metallic coated steel sheet and strip 0 Coatings of zinc alloyed with aluminium and magnesium
- AS 3660 – Termite management
- AS 3700 – Masonry code
- AS 4055 – Wind loads for housing
- AS/NZS 4600 – Cold-formed steel structures

Simple Process from Design to Delivery

At Cortek, we've been designing and building with LGS framing since 2003. Working closely with developers, architects and builders for a long period of time, we understand the unique challenges and project requirements that are required to be overcome. Our smarter building solutions have resulted in time, cost and labour savings right across multi-level townhouses, top level structures, aged care, educational projects and other commercial developments.

We understand how important the structure is to a building - with over 3000 successfully completed projects, we have the experience to solve engineered viable alternatives.
We strive for complete client satisfaction from the initial project handover to completion. We work closely with all stakeholders including the architect, builder, installer and contractors as required to achieve these outcomes.

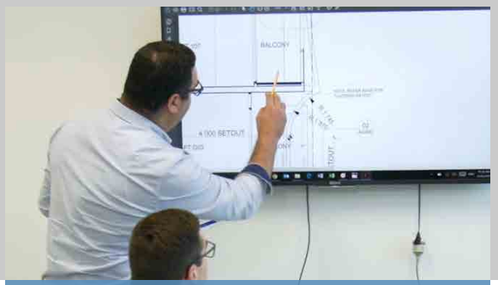




Design

Through our value engineering process and internal design knowledge, each project is analysed according to the AS codes to reduce as much structural steel as possible. This results in smarter solutions, benefits and savings for every build.

For years, we've challenged the traditional mindset of building by focusing on smarter engineered and more flexible systems for top level structures, aged care, educational projects and other commercial developments.



Estimating

Each project is unique in design, scope and detail. Therefore, communication in estimating is critical to guarantee the right engineered design scope has been thoroughly detailed for a successful outcome.

Our quotation submissions are subjected to strict software analysis, detailing the design of the proposed project, engineering requirements and marked up plans.

Detailing & Engineering

We use the latest software to shop detail framing in-house to meet the relevant codes and project specifications which are 3D modelled, coordinated and signed off with the client.

Our combined framing systems are calculated and certified by our in-house registered structural engineers.

Fabrication

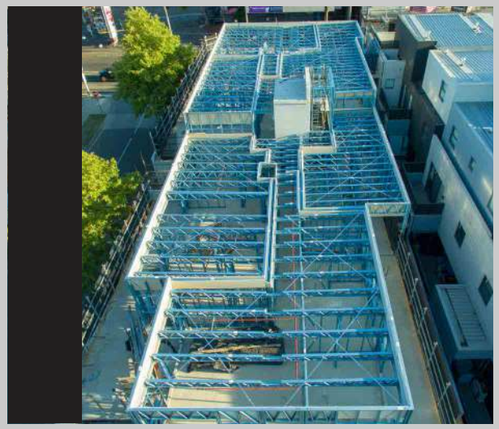
Framing is approved and checked prior to manufacturing before being pre-fabricated in our factory using state-of-the-art machinery. Framing is integrated directly with the CAD software for precise and accurate results, every time.

LGS framing is then QA checked before delivery and transported to site, ready to be installed.

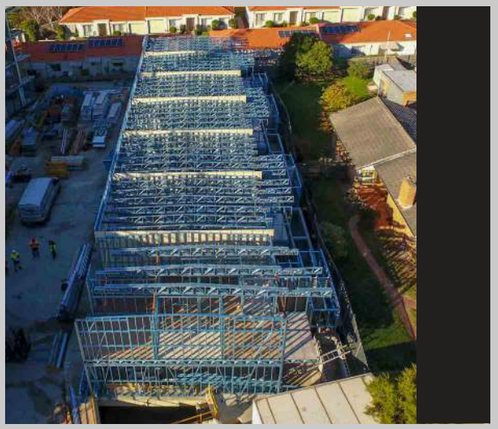
Project Management

Throughout the process, we have dedicated on site support to coordinate with the client and the installation teams to ensure everything is being delivered on schedule and according to the design shop drawings.

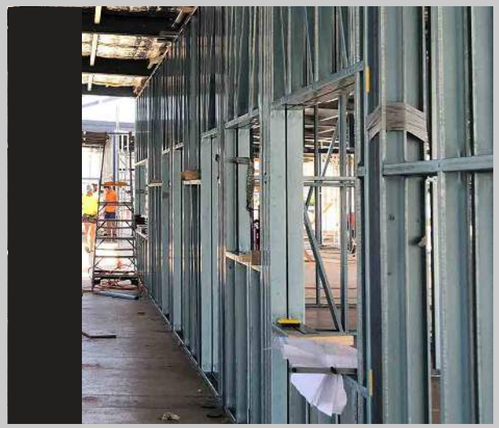
Project Applications



Top Level Structures



Townhouses & Apartments



Childcare & Education

Health & Aged Care

How Cortek Can Help

It's always a big decision to switch from the old tried and true methods to something new. But the truth is, in today's ever-changing market, finding new and innovative ways to push the boundaries and find cost and on site time and labour efficiencies is key.

So, whether you're in the early stages of the design process, or already have the plans drawn up, we're happy to offer advice about how choosing light gauge steel framing can benefit your project.

Since the early 2000's, we've assisted many architects, developers and builders to discover the possibilities of steel framing - we have the expertise and knowledge to achieve the best outcomes.

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For more information, get in touch with our team.

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