A photograph of a building's steel frame under construction. The image shows a grid of vertical and horizontal steel beams, with diagonal bracing visible on the left side. The structure is set against a clear blue sky. A green semi-transparent overlay covers the middle-left portion of the image, containing the title and subtitle text. The ground is a flat, light-colored surface, possibly concrete or dirt.

Steel Framing: The Future of Residential Construction

Why Now is the Perfect Time for Developers and Homebuilders the United States

Success in construction comes when you build more than just structures, you build relationships, trust, and a legacy.



Introduction

Traditional construction methods, such as timber and concrete fall short when it comes to delivering the speed, design flexibility, and building quality required in today's construction industry. An innovative approach to construction is needed, to address this challenge, and cold formed steel (CFS) provides a solution.

Steel framing is rapidly gaining popularity with developers and homebuilders worldwide due to its numerous advantages, including strength, durability, adaptive design, and sustainability. Consequently, the demand for steel framing systems is growing, presenting a significant opportunity for suppliers, manufacturers, and fabricators to enter this thriving market.

In this ebook, we will explore the applications and methodologies of steel framing in the residential sector through practical examples. By understanding how CFS outperforms traditional construction methods, you will learn how it can drive return on investment (ROI) for your business as a project owner, builder, or developer.

CHAPTER 1

Taking Control with Steel Framing

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Future-Proofing Your Business with Diversification and Technology

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The Ideal Choice for All Sectors of Residential Construction

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How to Get Started - Empowering Your Business for Success



A construction worker is shown from the chest up, wearing a plaid shirt, a safety harness, and a red hard hat. They are holding a yellow and black power drill, positioned to work on a horizontal steel beam. The background consists of a complex network of steel beams forming a framework, with a clear blue sky visible in the distance. The entire image is overlaid with a semi-transparent teal filter.

CHAPTER 1

Taking Control with Steel Framing

Better Supply Chain Control

By incorporating CFS into construction projects, the value chain can be enhanced, offering a steady supply, accelerated timelines, and design flexibility. These advantages contribute to a streamlined, efficient, and cost-effective construction process that benefits all stakeholders involved.

Unlike wood, which is subject to variations and availability steel coils don't warp, ensuring consistent uniformity and accessibility. The regulated production of steel enables better supply chain planning and control over material availability, minimizing delays and ensuring that construction projects stay on schedule.

Furthermore, steel's lightweight nature and high strength-to-weight ratio means it can be contained, stored, and transported in a compact coil. This makes it easier to handle and store, requiring significantly less

storage footprint compared to wood. The lighter weight also facilitates more efficient transportation, reducing shipping costs and coordination complexities. Additionally, steel does not require special treatment for moisture, pests, or decay during transit, simplifying the logistics process. With its stable, engineered properties and consistent attributes, CFS ensures a high standard of finish.

Steel offers greater design flexibility than wood, providing versatility, adaptability, and the ability to accommodate design variations. Precise manufacturing techniques enable accurate and custom fabrication of components, reducing waste, optimizing material usage, and enabling faster installation onsite.



Capturing More Margin through Reduced Labor Costs

Although steel may have a higher upfront material cost compared to wood, the process of producing and assembling steel framing off-site is significantly faster and more efficient. This shorter project duration translates into reduced overall construction costs and increased profit margins.

Using steel framing requires fewer workers, as assembly is straightforward with basic training requirements. Consequently, the need for highly skilled labor is reduced, resulting in cost savings.





Increased Speed of Construction for Faster ROI

A faster return on investment (ROI) is a critical aspect of the financial analysis for any property development opportunity. When a property can be acquired and developed within a short period, the ROI is realized faster, and the ability to meet immediate market demand is amplified.

CFS is particularly suitable for offsite construction, allowing simultaneous construction activities, such as site preparation and foundation work, while CFS components are being manufactured in the controlled factory environment. Its lightweight nature

is advantageous onsite, making it easier to handle and reducing the need for heavy equipment. The efficient and precise nature of CFS contributes to faster construction speed both on and offsite. CFS can be quickly installed and connected, enabling rapid progress in construction tasks.



“The reason I think steel frame homes have been slow in evolving is because there has been no process to get them done. With FRAMECAD there’s now a process and I believe steel will overtake wood in the United States in 15 years.”

- Rodger Ford, CEO, Frame Up Now

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CHAPTER 2

Future-Proofing Your Business with Diversification and Technology

By embracing steel framing and cultivating adaptability and change, businesses can position themselves as forward-thinking and future-proof their opportunities in the construction industry. Staying informed about industry trends and emerging technologies is crucial to success.

Building strong relationships with customers and strategic partners and leveraging their expertise can provide a competitive advantage and foster opportunities for collaboration and innovation.

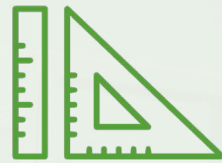
Adopting technologies that enhance operations is key to improving efficiency and delivering better products and services. Businesses can create a buffer against potential disruptions by mitigating risks and diversifying revenue streams. Exploring new markets, targeting different customer segments, and investing in additional talent may be necessary to build a skilled and adaptable workforce capable of executing these business objectives.

Steel framing is not just a passing trend; it is the future of construction.

As the industry continues to evolve, it is only a matter of time before steel framing becomes mainstream in the United States. Here are some key reasons why steel framing is a future-proofed business opportunity:

Learn more about the FRAMECAD System for Residential Construction

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Exact and Straight

Steel framing is precise, resulting in highly accurate and efficient construction. The straightness of the material not only contributes to a strong and reliable structure but also enables rapid and smooth installation, enhancing the overall aesthetics of the finished product. This precise construction process simplifies subsequent jobs, saving time and effort for everyone involved.



No Mold or Rot

Unlike wood, steel is not porous and does not absorb or retain moisture. This inherent quality makes steel framing highly resistant to mold and rot. Even in the presence of moisture, steel does not provide a food source for mold or rot to grow. Additionally, steel framing is resistant to warping, shrinking, or expanding due to changes in moisture levels, eliminating potential gaps or spaces where moisture can accumulate and cause problems.



Climate Adaptability and Resistance

Steel framing offers greater structural integrity and resistance to natural disasters such as earthquakes, hurricanes, flooding, and fires compared to wood. It also mitigates the risk of termite infestation, which is becoming a growing threat globally in timber construction. With steel framing, you can be confident in the durability and resilience of your structures, providing peace of mind in diverse climatic conditions.



Sustainability and Circular Economy

As the world focuses on sustainability and energy efficiency, steel framing aligns perfectly with this. Steel is infinitely recyclable and using CFS framing systems contributes to green building practices and certifications. Additionally, steel framing enables the integration of insulation and energy-efficient systems, reducing energy consumption in residential buildings and creating healthier homes. Compared to traditional methods, CFS construction produces significantly less waste, with material wastage reduced to less than 1%.



Design Versatility

The strength and flexibility of CFS make it an ideal building material for a wide range of construction types and forms. CFS offers larger span lengths, thanks to its lighter weight and increased space utilization, enabling the creation of architectural designs that may not be feasible with traditional methods. With one of the highest strength-to-weight ratios among construction materials, CFS allows for wide, open spaces and innovative building shapes, as well as non-conventional roof lines. Architects and engineers can explore endless design possibilities with CFS construction, offering both structural flexibility and aesthetic appeal.



Easy Installation

CFS construction is renowned for its ease of installation, often involving prefabricated components. The lightweight nature of steel framing makes it effortless to handle and maneuver during the installation process, reducing the physical effort required and making it more manageable for a smaller construction workforce. The precision and accuracy of CFS element production result in consistent dimensions and straightforward onsite assembly, further streamlining the setup process. These factors contribute to reduced labor costs, improved project efficiency, and faster construction timelines.

By embracing steel framing, you are not just adapting to current trends but positioning yourself at the forefront of the construction industry's future. With its undeniable advantages and the growing demand for sustainable and efficient construction, now is the perfect time to invest in steel framing and to future-proof your business for the years to come.



"The benefits of the modular and prefabricated wall and truss system is you've got a cleaner and safer site. It's also quicker because we do 65% of the erection of the framing here in the facility, so there's a lot less to do onsite."
- Ken Flynn, Owner, Framecor



The Ideal Choice for All Sectors of Residential Construction

Steel framing is proven to be the ideal option for a wide range of residential building projects. Whether it's single-level homes, mid-rise and multi-story apartment developments, accessory dwelling units (ADUs), or tiny homes, steel framing offers numerous advantages. Its lightweight construction system minimizes loads on foundations, enabling savings on sub-structure costs. It is, therefore, the ideal building system for all types of residential construction.

By adopting modern construction techniques like CFS framing, overall residential project costs can be significantly reduced. Not only does it lower the total building expenses, but it also speeds up the construction process.

Single Dwellings

The versatility of CFS makes it a perfect choice for constructing single dwellings of both simple and complex designs. CFS framing allows for narrower walls compared to traditional materials, resulting in more internal space within the same footprint. This is particularly advantageous in meeting the demands of urban density. Additionally, CFS's lightweight nature and ease of handling make it an excellent solution for sloping or difficult sites, where extensive foundation work or onsite logistics would otherwise be required.

Construction of single dwellings often faces time constraints and must adhere to code compliance requirements. Traditional construction methods are typically slow and require highly skilled onsite labor to ensure compliance. CFS construction offers a solution to address these challenges with engineering compliance during the design process. With CFS construction, builders have the flexibility to create low-rise residential buildings that are not only quickly built but also stylish and comfortable to live in.



Multi-family Dwellings

Multi-family housing is designed to accommodate multiple families in separate housing units, ranging from affordable apartment complexes to luxury condominiums. Apartment buildings, duplexes, quadruplexes, and townhouses are among the common types of multi-family housing, and their popularity and demand continue to grow worldwide. The repetitive nature of multi-family construction makes it an ideal fit for CFS construction. With similar floor layouts, common framing assemblies, and wall panelizations, CFS offers efficiency and consistency.

Multi-family builders face challenges such as fixed budgets, tight project schedules, limited onsite access, and restricted storage. CFS methods provide safe and efficient structural solutions, enabling project owners to achieve a superior return on investment within a shorter time frame compared to other construction methods. By leveraging CFS technologies, project owners can control expenses, ensure profitability, and offer affordable multi-family units across various market price points.

Tiny and Transportable Homes

Tiny homes are compact dwellings that are often designed to be transportable, offering standalone and self-contained living spaces. They typically range from 100 to 400 square feet in size and can serve as primary residences, vacation homes, or guest houses. Tiny homes can be situated on various properties, including private land, or dedicated tiny home communities. Their efficient design maximizes space utilization, making them highly suitable for offsite modular construction methods.

Transportable homes, on the other hand, are designed to be transported from one location to another. They are usually larger than tiny homes and can range from small modular units to larger prefabricated structures.

Both tiny and transportable homes are well-suited for CFS framing and are typically constructed using modular or prefabrication methods. This allows for easier transportation and assembly, as the prefabricated modules can be transported to the construction site and quickly assembled. As a result, construction timelines are accelerated, and onsite labor is reduced.



ADUs

Accessory dwelling units, or ADUs, are secondary housing units located on the same property as the primary residence. They are increasingly popular for addressing housing shortages and providing additional living space for family members, renters, or as separate units for homeowners.

ADUs are well-suited for CFS framing due to the cost-effectiveness and rapid construction speed, minimizing disruption to the primary residence and reducing overall construction time.



"I think the United States is ripe for the picking for moving ahead with technological advancements and metal framing. In the commercial sector it is used a lot, but in residential I think it is really going to start to pick up."

- Brad Cooper, Co-Owner, Frame Up Now

[WATCH CASE STUDIES](#)





CHAPTER 4

Steel Framing - A Win-Win for the Construction Industry and Homeowners

Developers, general contractors, fabricators, architects, and detailers have all recognized the numerous benefits of steel framing in residential construction. Now, it's time to explore how homeowners can reap the rewards of this innovative approach.



Strength and Durability for Lasting Homes

Homeowners can take comfort in the knowledge that their investment in advanced steel framing translates into a solid and durable home. The inherent strength of steel ensures the long-term integrity of the structure, providing peace of mind against environmental challenges and the test of time.

Design Flexibility for Personalized Living Spaces

With advanced steel framing, homeowners can create truly customized living spaces. The design flexibility of steel framing allows for a wide range of architectural choices, from open floor plans to unique features that reflect individual preferences and lifestyles. Each home reflects its owner's vision, providing a personalized living experience.

Learn more about
the FRAMECAD
System for Residential
Construction

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Energy Efficiency for Lower Utility Bills

Advanced steel framing contributes to improved energy efficiency. Precision engineering and tight construction tolerance minimize air leakage and thermal bridging, resulting in better insulation. This translates into reduced energy consumption and lower

utility bills for homeowners. By embracing steel framing, homeowners not only save money but also contribute to a more sustainable and environmentally friendly lifestyle by reducing carbon emissions.



Low-Maintenance Living for Enhanced Enjoyment

Compared to traditional construction materials, steel framing requires minimal maintenance. Its resistance to pests, rot, and decay eliminates the need for frequent repairs or replacements. Homeowners can spend more time enjoying their homes and less time dealing with maintenance issues. The durability and longevity of steel framing provide a hassle-free living experience, allowing homeowners to focus on creating lasting memories in their homes.

Sustainable Choices for a Greener Future

By choosing advanced steel framing, homeowners actively participate in sustainable and eco-friendly construction practices. Steel is a highly recyclable material, and its use in residential construction reduces the demand for primary resources. Homeowners can take pride in their choice, knowing they are contributing to a greener future and leaving a smaller carbon footprint.

In conclusion, homeowners benefit immensely from the utilization of advanced steel framing in residential construction. They gain peace of mind with a durable structure, enjoy design flexibility for personalized living spaces, save on energy costs, experience low-maintenance living, and contribute to a sustainable future.

As the construction industry embraces this transformative approach, homeowners can look forward to homes that embody strength, efficiency, customization, and environmental responsibility.



“Speed in construction is critically important, because it’s always measured on your timeline. Everybody knows that if you can control the framing and make it accurate and on time, the rest of the project will generally fall into place.”

- Joe Trednic, Owner, Framecor

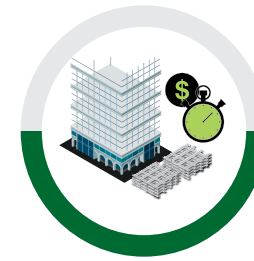
 **WATCH CASE STUDIES**

CHAPTER 5

Why choose the FRAMECAD Building System

The FRAMECAD System is the world-leader in CFS construction, offering a level of superiority that sets it apart from other systems in the industry. With its unique combination of engineering and design software, it stands as the ultimate choice for efficient and premium construction projects worldwide.

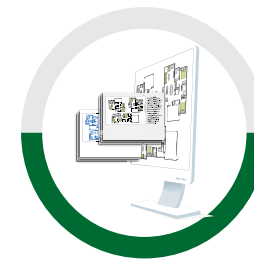
FRAMECAD®
F325iT



Efficiency in Design and Cost Savings

Unlike other systems, the FRAMECAD software seamlessly integrates engineering and design, enabling fast and efficient design processes. This streamlined approach translates into substantial cost savings by eliminating the need for additional compliance work or expensive rework.

In contrast, many other CFS software packages lack engineering capability, requiring additional analysis and input from engineers. FRAMECAD empowers designers to create fully engineered designs, ensuring optimized structures and substantial cost reductions.



Global Compliance and Leading Calculation Techniques

FRAMECAD software provides designers with the confidence that their designs meet local building codes and adhere to the industry's leading CFS calculation techniques. With integrated major CFS building codes from around the world, designers can create designs that meet specific regional requirements.

Learn more about the FRAMECAD System for Residential Construction

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Versatile Applications: Walls, Roofs, and Floors

The FRAMECAD System excels in a wide range of applications within residential construction, showcasing its exceptional strength and versatility.

Walls

For walls, steel framing is employed for both exterior and interior walls, as well as prefabricated wall panels and internal partition walls. These CFS frames provide a robust and reliable framework for attaching finishes, insulation, and other essential building components. With FRAMECAD, designers can create walls that offer exceptional stability, longevity, and architectural freedom.



Roofs

When it comes to roofs, CFS trusses and joists fabricated using the FRAMECAD system deliver outstanding structural support. These custom-designed elements span long distances, eliminating the need for excessive load-bearing walls and creating open and flexible interior spaces. With FRAMECAD, roof systems become more efficient and aesthetically appealing.



Floors

In residential floor systems, CFS joists and joist systems engineered with FRAMECAD offer unparalleled adaptability. Designed to accommodate various floor spans and loads, these lightweight yet robust components enable efficient installation and seamless integration with other building systems, such as plumbing and electrical. FRAMECAD's floor systems are the epitome of durability, efficiency, and precision.



The FRAMECAD System represents the pinnacle of advanced steel framing, offering unmatched strength, efficiency, and versatility. Its integrated engineering and design software, global compliance, and leading calculation techniques establish it as the premier choice for visionary construction projects. Whether it's wall framing, roofs, or floors, FRAMECAD exceeds expectations, delivering structures that are not only robust but also cost-effective and compliant with international standards.





CHAPTER 6

How to Get Started - Empowering Your Business for Success

At FRAMECAD, we provide unparalleled support to our customers, ensuring your success at every stage of your steel framing business journey. Whether you're just starting out or have an established operation, our goal is to set you up for success as your trusted partner.



Equipment:

Reliable Machinery for Efficient Production

FRAMECAD's roll-forming systems leverage the world's most advanced design and manufacturing technology for CFS. Our machinery is meticulously engineered to deliver increased production speed, enhanced flexibility, and unparalleled reliability. With our systems, you can expect optimal performance and seamless integration, enabling you to streamline your production processes.



Software:

Comprehensive Design and Engineering Solutions

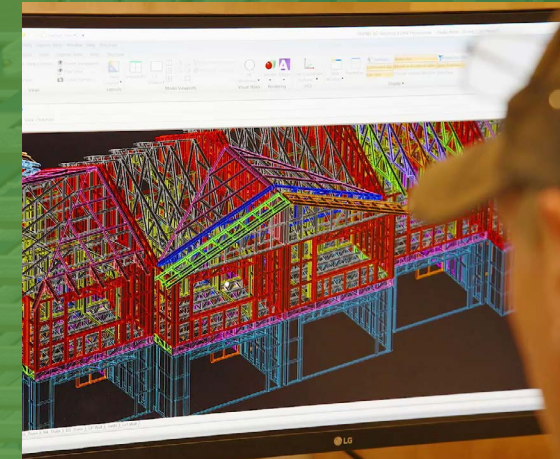
The FRAMECAD CFS design software encompasses all elements necessary for efficient planning and construction. From load-bearing walls to curtain walls and shear walls, each component can be effortlessly created using dedicated modules within the program. Construction engineers and architects can utilize these modules individually or collectively to bring their most intricate designs to life. By embracing the FRAMECAD CFS software, you benefit from a design-led process that reduces costs, including engineering and skilled labor expenses, while boosting productivity and delivering a greater return on investment.



Training:

Unlocking the Full Potential

FRAMECAD is committed to ensuring that you extract the maximum value from your system. We stand by our software and equipment, providing comprehensive training, knowledge, and support to empower our customers to excel with their FRAMECAD System. Our worldwide expertise allows us to deliver training, customer care, commissioning, and scheduled servicing programs that get your business up and running, maintain productivity, and optimize your return on investment.



Design and Engineering Training: Mastery in Factory Operations and Design

With unparalleled experience and expertise, FRAMECAD offers intensive, world-class training for engineers, designers, factory teams, and onsite staff. Our training programs cover software-aided design, construction machinery operation, and the premium FRAMECAD design-led process. Whether you choose to attend training at one of our regional facilities or prefer customized onsite sessions, our programs ensure that your team achieves mastery in factory operations, design, framing, and overall productivity.



All Under One Roof:

Technology, Methodology, Proven Track Record

With a rich history as a global leader, FRAMECAD has the largest footprint worldwide. Our dedicated team operates from eight strategically located offices, ensuring a strong presence in over 120 countries. This extensive global footprint allows us to deeply understand and cater to the specific needs of each region we operate in.

Learn more about the
FRAMECAD System for
Residential Construction

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Summary

With decades of experience, FRAMECAD has continuously evolved, embracing cutting-edge technology, innovative methodologies, and industry-leading practices. Our comprehensive suite of solutions covers the entire steel framing process, offering a seamless and integrated experience for our customers.

From advanced design and engineering software to state-of-the-art roll-forming systems, we provide a holistic approach that ensures efficiency, accuracy, and exceptional outcomes.

Our extensive global presence has provided us with invaluable insights into diverse markets and construction practices worldwide.

We understand the unique challenges and requirements of each region, allowing us to tailor our solutions effectively. This localized approach, combined with our global expertise, positions us as a trusted partner in the construction industry.

FRAMECAD has built a solid reputation for delivering exceptional results across the globe. Our end-to-end system has been successfully implemented in numerous projects, consistently demonstrating its efficiency, reliability, and performance. The FRAMECAD approach is synonymous with efficient designs and faster construction timelines, providing tangible benefits to our customers.

An illustration showing two people in separate video call windows. On the left, a man with a beard and dark hair is wearing a blue suit. On the right, a woman with short red hair is wearing a pink top and waving her hand. Both windows have standard video call icons (microphone, camera) at the bottom. The background of the call area is a light green circle.

Ready to take the next step? Book a consultation with one of our experts to learn more about the future of residential construction.

BOOK A CONSULTATION



At FRAMECAD, we are committed to maximizing the efficient use of resources, both human and material, through the innovative application of technology and methodology. Our approach not only enhances productivity but also ensures a better return on investment for our customers.

Looking towards the future, FRAMECAD remains dedicated to pushing boundaries, fostering innovation, and leading the industry by design. With our unparalleled expertise, global reach, and proven track record, we are the preferred choice for steel framing solutions. By partnering with FRAMECAD, you gain the support of an industry leader committed to empowering your success and delivering exceptional results, all under one roof.

Follow Us



residential.framecad.com

Please note that the information provided in this guide is of a general nature and should not be construed, or relied on as suitable for your specific situation.

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