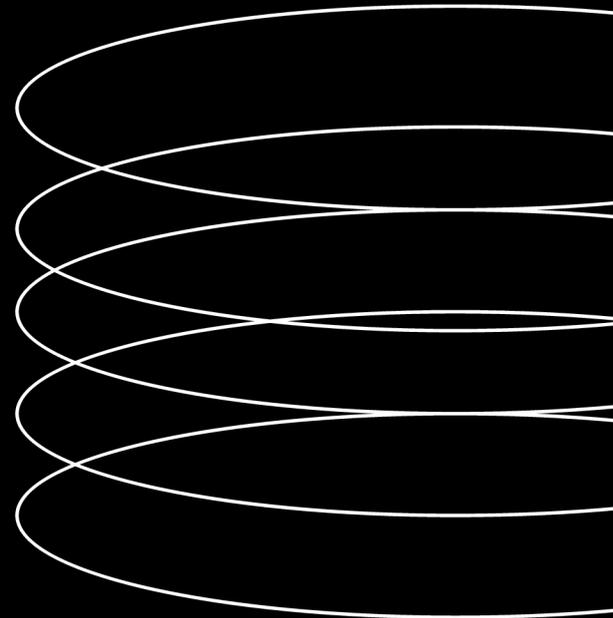
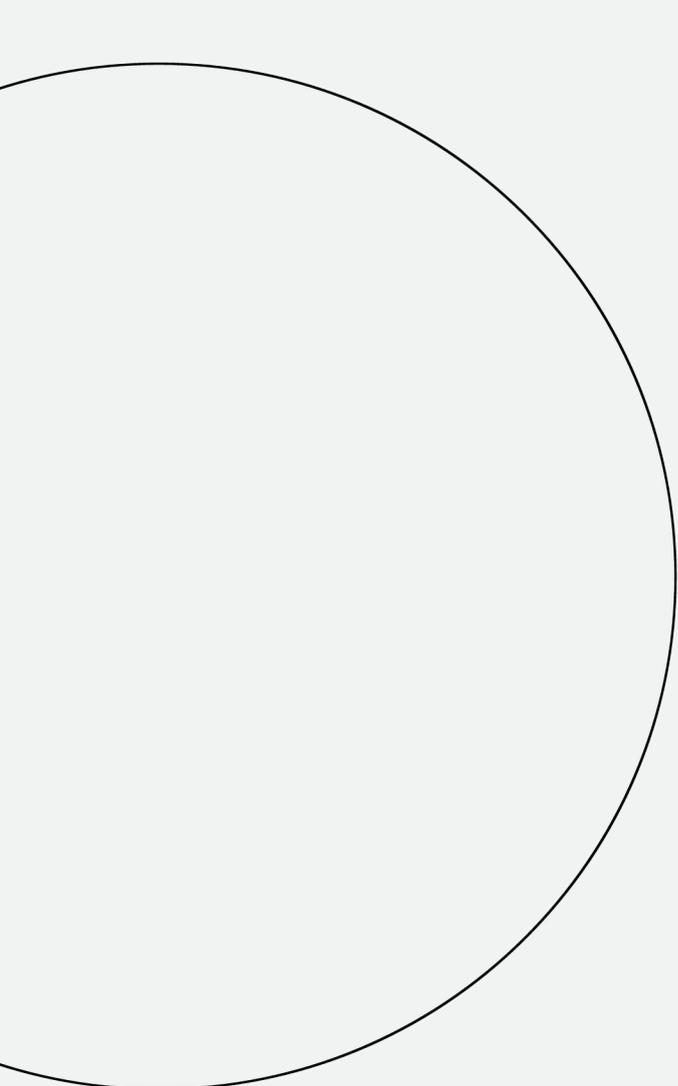


Structural Steel in Residential Construction: A Developer's Practical Guide



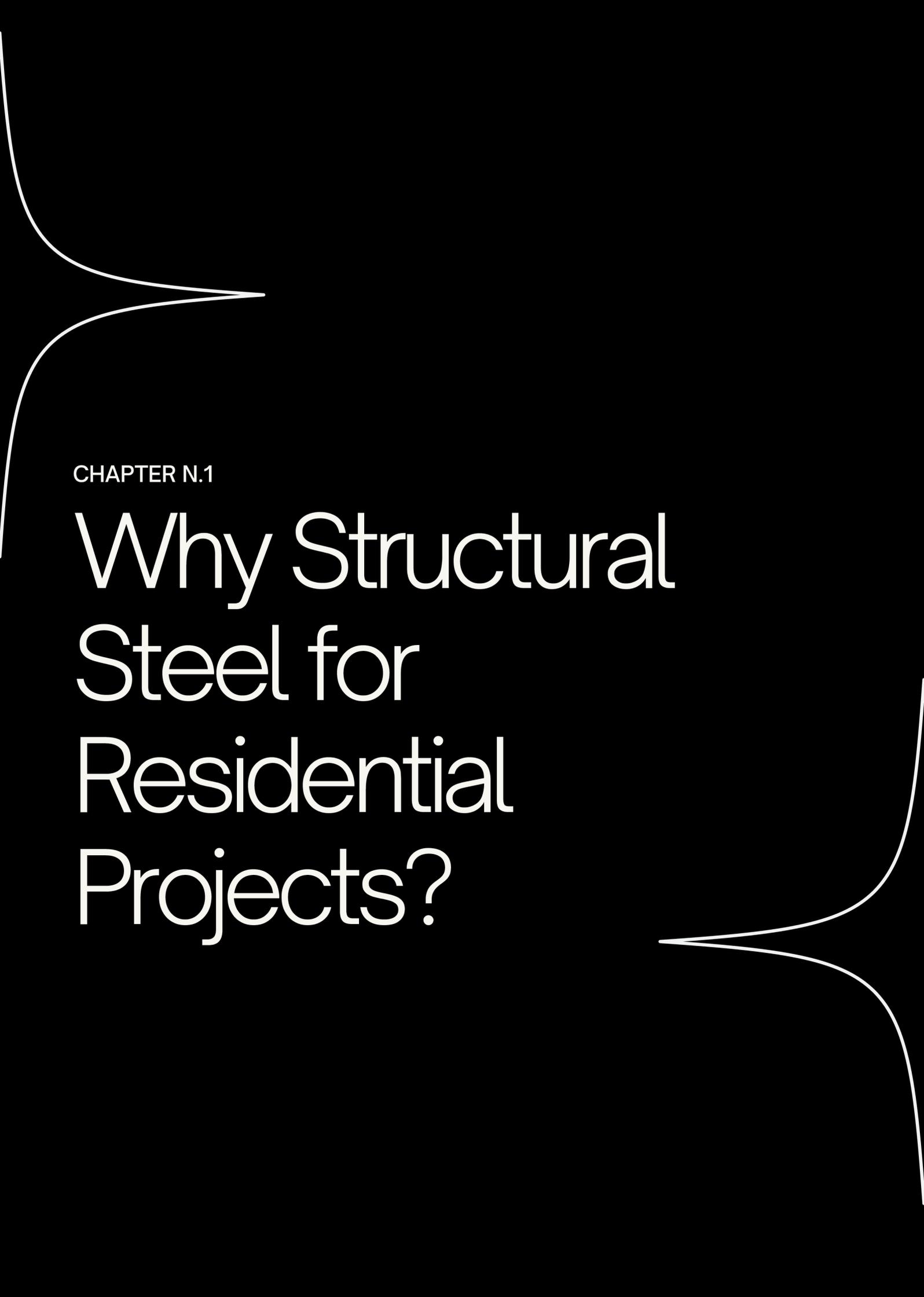


Structural Steel in Residential Construction:

A Developer's Practical Guide

AT JAS WELDING SERVICES LTD,

your family-run specialists in certified structural steel fabrication, installation, metal repairs, gates, railings, spiral stairs, and on-site welding—we hold BS EN 1090 EXC2 certification with UKCA marking. We deliver reliable, compliant structural steel solutions for residential projects across Norfolk, Suffolk, London, and beyond. Housing developers face tight timelines, rising costs, strict regulations (including the Building Safety Act 2022), and the need for quality that stands up to building control scrutiny. This guide explains how structural steel fits into modern residential construction—new builds, extensions, multi-unit developments, loft/basement conversions, and more. It highlights key benefits, practical applications, compliance essentials, and why partnering with a certified fabricator like JAS reduces your risks and speeds up delivery. Download this as a branded PDF from our website (with your logo, contact details, and a simple quote request form). Share it with your team, architects, or main contractors to showcase why certified steel is a smart choice for residential schemes.



CHAPTER N.1

Why Structural Steel for Residential Projects?

Why Structural Steel for Residential Projects?

STRUCTURAL STEEL REMAINS A BACKBONE OF UK CONSTRUCTION

Structural steel remains a backbone of UK construction, offering advantages over traditional masonry, timber, or concrete in many residential scenarios.

KEY BENEFITS FOR DEVELOPERS:

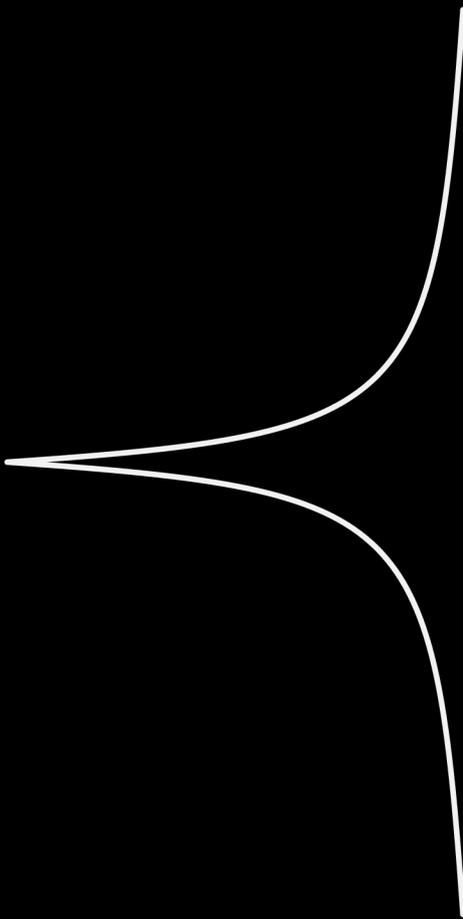
- **Faster Construction & Programme Savings** — Off-site fabrication and quick on-site erection reduce build times significantly. Steel frames can be assembled rapidly, minimizing weather delays and enabling earlier handover/sales.
- **Strength-to-Weight Ratio** — Steel provides exceptional load-bearing capacity with less material weight (often 30–50% lighter than equivalent concrete or masonry), allowing leaner foundations, reduced sub-structure costs (especially on brownfield or challenging sites), and larger open-plan spaces without intermediate supports.
- **Design Flexibility** — Long spans enable open layouts, large glazing, mezzanines, or hybrid systems (e.g., steel + timber). Ideal for modern homes, extensions, or multi-storey apartments.
- **Durability & Low Maintenance** — Resistant to rot, pests, fire (with proper protection), and weather—leading to longer lifespan and lower long-term costs.
- **Sustainability** — High recycled content, fully recyclable at end-of-life, lower embodied carbon in many cases, and lighter structures reduce foundation impacts—aligning with net-zero goals and planning requirements.
- **Cost Efficiency** — Predictable pricing, reduced site labor, and potential savings on foundations (up to 30% load reduction) make steel competitive, especially for speed-to-market projects.

Compared to traditional masonry: Steel often wins on speed, weight savings, and flexibility; masonry may edge out on thermal mass or perceived solidity, but steel excels in modern, efficient builds



Common
Applications in
Residential
Development

Compliance
Essentials: BS EN
1090, UKCA, and
Building Safety Act



Common Applications in Residential Development

Structural steel suits a wide range of housing projects under EXC2 (covering most residential buildings up to ~15 storeys):

- Home Extensions & Open-Plan Conversions — RSJ/UB beams for removed load-bearing walls, goalpost frames, or cantilever supports—creating spacious kitchen-diners or garden rooms.
- Loft & Basement Conversions — Additional beams/columns to support new floors without overloading existing structures.
- New Builds & Multi-Unit Developments — Full steel frames for apartments, townhouses, or mixed-use podiums; lightweight systems for faster erection.
- Mezzanines & Internal Features — Upper-level platforms in high-ceiling homes or commercial-residential hybrids.
- Hybrid Builds — Steel skeleton with brick/block cladding or timber infill for aesthetics and compliance.

Our in-house fabrication ensures precise components, with on-site welding/install for seamless integration.

Compliance Essentials: BS EN 1090, UKCA, and Building Safety Act

Under the Construction Products Regulation and Building Safety Act 2022, structural steel must comply to avoid delays, non-conformance penalties, or insurance issues.

- BS EN 1090 sets standards for fabrication/assembly of steel structures. EXC2 (our certification) covers typical residential work—ensuring quality, traceability, and performance.
- UKCA Marking (post-Brexit replacement for CE) is mandatory for GB market structural products—proving compliance via audited processes, Declaration of Performance, and approved body oversight.
- Building Safety Act emphasizes accountability, risk assessment, and "golden thread" of information—certified steel supports this with documented welds, materials, and testing.

Non-compliance risks project rejection by building control or higher-risk building scrutiny. Our in-house Responsible Welding Coordinator (RWC) oversees procedures, welder qualifications, inspections, and records—delivering full traceability and UKCA-marked components every time.



Cost Factors &
Savings for
Developers

Cost Factors & Savings for Developers

UK averages (2025–2026 estimates; supply + install, excl. VAT; vary by project):

- Steel Beams/RSJs (e.g., for extensions): £500–£2,000 each (installed; £225–£570 per metre for common applications).
- Full Steel Frame Elements (residential): £250–£350 per m² for frame + basic cladding; structural supports often 8–9% of extension build costs.
- Extensions (single-storey): £2,200–£3,300 per m² total (steel contributes significantly to structural portion).
- Savings Opportunities: Lighter foundations (1.5–3% overall cost reduction), faster programmes (earlier revenue), reduced maintenance.

Early collaboration with JAS minimizes redesigns and ensures compliant specs from the start.

Next Steps: Developer Checklist Use this quick checklist when selecting a steel fabricator:

- Holds current BS EN 1090 EXC2 certification?
- Provides UKCA marking and Declaration of Performance?
- Has in-house RWC for weld oversight?
- Offers full traceability/documentation?
- Experienced in residential (extensions, new builds)?
- Provides site surveys/quotes quickly?

Yes to all? You're in safe hands. Ready to discuss your next residential project? Contact us for a free site survey, quote, or compliance consultation. Call, email, or message us on X

WHY CHOOSE JAS WELDING SERVICES LTD?

- LCertified & Local — BS EN 1090 EXC2 / UKCA, in-house RWC—no subcontracting risks.
- Bespoke & Reliable — Full fabrication + install package; on-site expertise for residential sites.
- Developer-Focused — We understand timelines, regs, and cost control—delivering safe, high-quality steel that passes inspections first time.