

Review

Angus Macdonald's latest book provides 21st century context to modern architecture, covering the steel framework of the Crystal Palace through to the high-tech buildings vying for attention today, writes **Dr Jonathan Clarke**.

Steel architecture: The designed landscape of modernity

Author: Angus J. Macdonald
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THIS IS A FASCINATING and valuable book. My initial impression was that it covers well-worn territory previously examined in the historiography of modern architecture, and architectural steel construction. Indeed, many examples of steel architecture will be familiar, but what sets this apart from previous works is its impressive contextual breadth and dispassionate, sober perspective.

Whereas monographs such as John Bancroft's *Structural steel classics 1906–1986* (1986) and Blanc, McEvoy and Plank's (eds.) *Architecture and construction in steel* (1993) provide scholarly, detailed overviews, they were perhaps too caught up in the celebratory technological zeitgeist of their era to offer more rounded assessments of their subjects, including their shortcomings. Macdonald, from the vantage point of the 21st century, does not shy away from the flaws and failures of steel construction, offering a refreshing corrective to the standard narratives of modern architecture.

The first chapter, 'Steel Architecture in Context', sets the scene for the book's focus on steel rather than concrete ('because it was the technology of steel that produced the modern world of cities, industry and mass transport', p.9), casting a long view over its technical preconditions and development including ferrous metals in ancient civilisations, iron and steelmaking from the 18th century, and its attendant use in buildings.

Chapter two delves more deeply into the structural use of iron and steel in the 18th and 19th centuries, with a particularly interesting discussion of wrought-iron ties and cramps in enabling an unprecedentedly monumental scale to neoclassical buildings in Paris, besides well-trodden ground such as railway sheds, domes, glasshouses, and the Crystal Palace (although long-span iron ship-building sheds, and the fully framed, multistorey Sheerness Boat Store, are sadly overlooked).

The third chapter focuses on commercial buildings of the late 19th and early 20th centuries, namely the skyscraper in North America – a

new type of building enabled by steel that soon demanded a new type of architectural expression. Macdonald's lengthy evaluation of Louis Sullivan's principles for their architectural treatment is particularly cogent and, as he notes, 'seem... to have been almost wilfully misunderstood by subsequent architects' – a token 'of the nature of the fractious and ill-tempered discourse that was to become a feature of the coming age of modern architecture, in which individual architect 'superheroes' vied with each other for the position of its leader, frequently by attempting to belittle the achievements of their perceived rivals' (p.41).

And it is in the arena of modern architecture that this study steps up in gear, offering the reader layered critical insights and commentary. Chapters four to six examine how steel framing was fundamental to the visual vocabulary and image of the emergent International Style, explored through a select number of celebrated, largely domestic, set pieces in Europe and North America by such household names as Mies van der Rohe, Richard Neutra, Philip Johnson, Charles and Ray Eames.

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Neil Jackson's *The Modern Steel House* (1996), this section is interesting not only because it shows how such houses variously expressed and enabled aspirant modern lifestyles, but how, in privileging appearance above all else, significant compromises were made.

The final chapters consider high-tech and recent steel architecture, as well as revisiting the skyscraper – charting, *inter alia*, its structural development through the 20th century and globalised, increasingly garish presence in this century (such that 'the skylines of the world's most prominent cities [now feature] serried ranks of oddly shaped towers, each vying with its neighbours – shouting for attention like toddlers in a nursery class' (p.112). High tech is and was somewhat of a misnomer and Frank Gehry's influential Guggenheim Museum, Bilbao (1997) 'was actually more deserving of the accolade 'high tech' than the stylistically high-tech buildings of Foster or Rogers' (p.138).

The book concludes with many pithy observations, not least that the visual aspects of steel architecture have been routinely emphasised 'over technical and functional performance criteria encouraged by the discourse that has prevailed in the supportive and largely uncritical architectural media' (p.149). Macdonald ends with a number of changes architects might effect in the realisation of a more environmentally and ecologically responsible built environment.

Steel Architecture: The Designed Landscape of Modernity represents an important contribution to the historiography of modern architecture, and is written in an engaging, authoritative yet accessible style. The visual nature of its subject matter is perhaps let down by the variable quality and size of the illustrations – mostly open source – and indeed this would make for a large, lavishly illustrated book.

The only other real criticism that can be levelled at it is one of focus: its virtual disregard of reinforced concrete. But then again, that material's relation with modern architecture and modernity has perhaps received more than its share of inquiry. This work helps redress the imbalance – and admirably so.

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