

Book Review

Brick a World History

James W P Campbell and Will Pryce, 2003

London, Thames & Hudson

320pp. 600 illust. £39.95

ISBN 0-500-34195-8

The prospect of a book on the most mundane and modular of construction materials, with a global geographical perspective and a chronological span of 12,000 years is daunting. Yet James Campbell (text) and Will Pryce (photographs) have, between them, produced a book that is both meaningful and memorable.

At a fundamental level the meaning is mainly created by the way in which the subject matter has been structured by being carved up into seven chapters with readily recognisable chronological labels. 'Ancient Civilisations 10,000-500BC' provides a spectacular and predictable curtain raiser, highlighting the major monuments of Mesopotamia and ancient Egypt. 'The Classical World 500BC-1000AD, naturally follows with its Mediterranean emphasis. By use of skilful subheadings the text takes the reader through topics such as brick making in the Roman Empire and brick in the engineering of domes, before moving on to Byzantine brick and early examples from China and the world of Islam.

The merit of the global perspective of the book really comes through by chapter 3 – 'The Medieval World 1000-1450'. The euro-centric reader will think in terms of Sienna or Hurstmonceaux Castle. But simultaneously brick buildings were emerging elsewhere in the world as temples in Burma, pagodas in China and mosques and minarets in the Middle East with their perfect patterning.

The multicultural diversity of brick buildings is brought out even further by the book's most memorable quality – its pictures. The visual fireworks start even before the title page with a salvo of four full-page plates of staggering quality. Nowadays, high quality colour printing, certainly from a publisher like Thames & Hudson, is the norm and the 570 colour illustrations in this volume are not an exceptional number. What is unusual is the consistency of the pictures. All but a tiny handful were taken by Will Pryce who agreed with James Campbell that the pair would visit each site together to experience and photograph the buildings. Thus bland agency pictures, hastily assembled by an overstretched picture researcher and given cobbled up captions, have been avoided. Instead, each brick building or its details, shines from the page with purposeful intent, the result of epic expeditions over three years. The book's preface records that the pair set out on their longest trip on September 11, 2001 to visit fourteen countries, three of which bordered Afghanistan! The resulting pictures constantly catch the eye with colour or pattern, but it is perhaps the texture of both individual bricks and whole brick facades, which have been captured with greatest originality.

This is a user-friendly book whose three-column grid of text is constantly varied, not only by colour pictures but by maps illustrating major centres of brick production or use. Effective black and white line illustrations show brick shapes and types and how these can be combined into structural elements such as domes and arches. Techniques such as rubbed or gauged brickwork or terracotta production are illustrated using sequential pictures of modern clay craftsmen at work. A ten-page glossary, illustrated with line drawings, illuminates brickwork features such as rat-trap

bond or the use of vitrified headers. The book has avoided the use of footnotes but instead a bibliographical essay is provided at the end where sources and further reading are discussed in a helpful and practical way with page references to the main text. But one small disappointment of this book is its index. The meagre entries, on two pages well spaced, fail to include, for example, the Byker Wall housing project despite the fact that there are several paragraphs of text and five photographs. The architect, Ralph Erskine, however does get an entry.

It is pleasing to find a book about brick that also celebrates its use for mundane but essential constructional use during the 19th century. Chapter six 'Mechanisation and Industrialisation' puts the brickwork of railway tunnels, sewers and factories on a par with the temples and palaces of previous centuries. Sections on the mechanisation of brick moulding and the development of new types of kilns gives a valuable insight into the materials of this epic period of Victorian construction. All too often, the materials and their mass manufacture are overlooked as architectural historians clamour to discuss the completed building.

Welcome too are the healthy clutch of buildings from the last decade of the twentieth century. These range from the reassuringly homely brick of the new Glyndebourne (Michael and Patty Hopkins 1991-93) through the forceful brickwork of Mario Botta's Evry cathedral south of Paris to the sensitive work of Danish architect Sorensen who has sought to utilise the environmental advantages of brick, including acoustic bricks internally to reduce noise.

At just over 2kg this book is about the same weight as a brick. For centuries the brick has represented the convenient unit of construction which can be handled by a single person. Likewise this book is a convenient and manageable unit of knowledge. In its introduction the book laments the fact that brick is the most ubiquitous and the least regarded of materials, all too familiar yet strangely neglected. This book could do much to change all that.

Tony Herbert,
The Ironbridge Institute

Robert Stephenson - The Eminent Engineer

M.R.Bailey ed.,

Aldershot: Ashgate, the Institute of Civil and Mechanical Engineers and the Newcomen Society
446 pp., 21 colour plates and 121 b&w illustrations, £55
ISBN 0 756 9679 8

The last major appraisal of the career of Robert Stephenson appeared over forty years ago in L. T. C. Rolt's classic account of the achievements of the two Stephensons and it is twenty years since the publication of Derrick Beckett's survey of their contributions to engineering. Meanwhile, I.K.Brunel with two more recent and excellent biographies stands pre-eminent amongst Victorian engineers in current popular esteem. The bi-centenary of Robert Stephenson's birth is therefore an appropriate moment for a reassessment of his career and this volume, the result of the combined efforts of the libraries and staffs of the Institutions of Civil and Mechanical Engineers and members of the Newcomen Society, is an outstanding reply to the challenge. Its ten chapters are divided into two broad themes: *Influence and achievement* and *Innovation and technique* and in general the division works well but readers should be aware that aspects of the same subject, e.g., the London & Birmingham Railway, can appear in both parts.

Michael Bailey, the leading contributor amongst seven authors, in Chapter 1 takes Robert's story from early work for his father to the success of the second London & Birmingham Railway Bill in 1833. These years included his extraordinary appointment at the age of nineteen as the chief manager of the Forth Street locomotive works, Newcastle, and his prompt and reprehensible departure for Colombia leaving the railmaker, Michael Longridge, to struggle on producing inferior locomotives. Although Stephenson redeemed himself following his return with a series of improvements to raise their thermal efficiency, notably through the tubular boiler, his reputation as a national figure was not assured until the building of the London & Birmingham.

Mike Chrimes and Robert Thomas in chapters 2, 8 and 9 examine his contributions during the construction of his line to surveying, the establishment of the duties of engineers and their assistants and the appointment of contractors. In this he set a masterly example of detailed supervision although it has to be said that his specifications for the guidance of contractors were not more detailed than those of Joseph Locke on the contemporary Grand Junction Railway; nor did any other chief engineer, to the knowledge and regret of this writer, require his engineers to supply such comprehensive information on the labour being employed by contractors.

Success with Birmingham line brought a flood of requests for his professional assistance as a chief or, more frequently, consulting engineer. These reached a peak in the Railway Mania of the 1840's and the only answer was the delegation of responsibility to the talented young engineers in his practice in Great George Street, Westminster. Bailey compares the arrangements there to a barristers' chambers with Stephenson as the 'senior' who retained overall supervision and the ultimate responsibility and left its 'junior' members, such as G.P.Bidder, free to earn their own fees. With the exception of William Fairbairn's contribution to the Britannia Bridge, he did not fail to show generosity of spirit towards those with whom he worked. The legacy of delegation was a body of engineers capable of major achievement, as they showed in India. Altogether, his behaviour towards assistants was less peremptory and overbearing than was that of Brunel.

Prompted by revulsion at the excesses of the Mania, Stephenson in 1848 retreated from railway work as a chief engineer and concentrated on consultancy appointments, including many abroad, especially in Europe and Canada with Victoria Bridge, Montreal. Bailey's survey in *Wider Horizons* (Chapter 5) of his contributions to railways in Belgium, Norway, Egypt, etc., is accompanied by useful maps which are situated on the relevant pages in the text and not accumulated inaccessibly at the end of the work. The extent of his overseas commitments are what

distinguish his career most decisively from that of Brunel and, to a more limited extent, that of Locke.

Julia Elton in *Robert Stephenson in society* (Chapter 7) moves discussion away from the engineering scene to a broader view of his life, although there appears to be little to say about his marriage and domestic circumstances. With the assistance of George Hudson, with whom Stephenson (driven by different motives) agreed on the question of railway consolidation, he was elected M.P. for Whitby in 1847 and re-elected in a rowdy poll in 1852. His Parliamentary career was the least impressive feature of his public life since he rarely spoke in or even attended the House; his performance, it has to be added, was no worse than that of many other M.P.s, including those representing the railway interest. This chapter closes with a relaxed Stephenson out on his yacht *Titania*, which was the first British challenger in the *America's Cup* races.

In the final three chapters, James Sutherland, Ted Ruddock with Denis Smith have produced admirably concise analyses of his contributions to professional knowledge in the fields of iron railway bridges, masonry structures and water engineering. For some readers these surveys will be the most original material in the entire book and this applies especially to water engineering which is, as Smith says, an overlooked part of his activities and has not a single mention even in his obituary in the *Proceedings* of the I.C.E. Nevertheless, Smith has managed to find a commendable number of occasions on which Stephenson gave advice on schemes for reservoirs, drains and water works and even concerning the early work on London's drainage through the Metropolitan Board of Sewers. As might be anticipated, amongst the leading features of Sutherland's chapter on iron railway bridges (which will appeal to many for its theoretical content) are the tubular structures at Conway and across the Menai Strait and the St Lawrence. He also examines the fundamental weaknesses of the design which combined cast and wrought iron and were behind the failure of the Dee Bridge at Chester. Ted Ruddock looks at the special measures taken to reinforce the lining of Primrose Hill Tunnel and the sides of Blisworth Cutting on the London & Birmingham, and examines crucial design features in the masonry of the Menai, Newcastle High Level and the Royal Border crossings. Altogether there was less innovation in his masonry than in his iron bridges.

For this writer the leading attraction of this closely written and superbly illustrated account, with its plenary footnotes and bibliography, is the breadth of the aspects of his life chosen for expert discussion. Both the publishers and authors deserve congratulation and one can only regret that its price will be a deterrent to a wider readership.

David Brooke

**Der Civil-Ingenieur Franz Jakob Kreuter.
Tradition und Moderne 1813-1889**

Christoph Hölz, 2003.

Munich and Berlin : Deutscher Kunstverlag

480 pp, c. 290 illustrations. 68.00 Euro

ISBN 3-422-06425-7.

Architecture in the early nineteenth century appeared to be dominated by an astonishingly small number of names. Nowhere was this more evident than in the German states. Even the outright specialist would be hard put to cite another name, apart from Schinkel, for the whole of Prussia. In that context it is not at all surprising that the Munich practitioner Franz Jacob Kreuter has so far remained virtually unknown, but it is quite probably also due to the way in which Kreuter himself 'structured' his career from the very start, stepping deliberately outside the confines of architecture as 'art', towards engineering.

Kreuter's most prominent, as well as the best preserved buildings, from the early 1840s onwards, are a number of large country villas and suburban dwellings in Bavaria. In the second part of his career, from the 1850s to 1880s, he made his mark in Vienna with innovative designs for the new Ringstrasse. In Munich, Kreuter prominently practised Gärtner's method of avoiding plasterwork on the facades and operating instead with variously coloured brick, that is, with what the English were soon to call 'constructional polychromy'. All this is excellently documented in this volume. However, these kinds of designs would not, by themselves, justify the rank and interest that Kreuter should, and no doubt will, from now on, command. Kreuter's contribution lay more in the much wider fields of industrial building and industrial organisation and entrepreneurship. Furthermore, it was his very insistence on these branches being a legitimate concern for the architect which gives special interest to his career.

To begin with, England played a crucial role, in fact it appears to have provided the trigger for Kreuter's major decisions. The 25 year old Kreuter spent several months in England during 1838, some dozen years after Schinkel had visited Britain; he too had come principally to study new kinds of buildings, notably factories. But by Kreuter's time the impact of structural engineering and especially of the new public projects, such as Brunel's Tunnel under the Thames had grown very considerably and Kreuter made them the principal object of his studies, personally contacting Brunel, Paxton, Decimus Burton and many others. Back home, he found a useful platform for reporting on many such structures Europe-wide in the *Allgemeine Bauzeitung* – arguably Europe's first major architectural periodical - published from 1836 in Vienna by the Munich-trained Ludwig Förster. In some cases Kreuter lifted his material straight from the *Bauzeitung's* London sister publication, the *Civil Engineer and Architect's Journal* - without acknowledgement, as the London editors lamented.

During the 1840s Kreuter planned and built a number industrial complexes, chiefly for the then entirely novel chemical industries, large-scale candle production, gas, asphalt and coal, though hardly anything remains today. To an extent Kreuter himself acted as entrepreneur, or rather, with his wide technical knowledge, as initiator of the undertakings. Around the middle of the century he widened his concerns further to comprise workers' dwellings, drainage engineering and railway construction. Late in life, in the 1880s, he acted as consultant for the Orient Express line through the Balkans.

The crucial point came right at the beginning of his career, when Kreuter decided to aim beyond narrowly defined architectural design and take an equal interest in industrial projects. Kreuter, in fact took a daring decision, in late 1838, after his stay in England, namely to abandon the official (ie. the usual) architectural career, by foregoing his promotion to 'Bau-Kondukteur', a crucial step

on the ladder to any successful architectural practice. Instead, he styled himself 'Civil Ingenieur', a direct take-off from the new English labelling, which, for Kreuter, also implied general commercial entrepreneurship. Thus in effect - as the 'frei-berufliche', the 'free-professional' architect (to use today's formula) had not as yet been properly instituted in German lands - this meant an abandoning of a proper architectural career altogether. Kreuter tried to put all emphasis on the new designation 'Ingenieur', so as to convince potential clients and the public of the independence and the worth of this particular professionalism. But he soon faced the consequences of his step because he was unable to apply directly, by himself, to the City for permission to build, without the plans carrying the signature of a certified builder or carpenter. Kreuter thus found himself treated as an ordinary private citizen and, in matters of building, inferior even to the tradesman. Only after strenuous pleading with the authorities Kreuter managed to change the procedure.

By 1849, however, Kreuter did find favour with the King and projected a new *Wintergarten* for the Residenz, the Munich Royal Palace complex. This was to be placed between two of Munich's most prominent nineteenth century buildings, the National Theatre and the Königsbau-wing, Klenze's new habitation for the King. Kreuter's large iron and glass structure (eventually built only in a reduced version and long since destroyed) was to be very boldly displayed; situated, as it was, directly above an arcade in stone, in the Renaissance style. It would have formed a memorable image, singular with its stark contrasts and inevitably interpreted as a contrast between 'old' and 'new'. Naturally, it serves as the *pièce de resistance* of Christoph Hölz's account. For Kreuter, so the Introduction argues, the division between architect and engineer had not yet occurred.

One has one's doubts as to whether Kreuter, with his early decision of principle, did the right thing in terms of his own career. The famed Munich Glaspalast of 1854, popular with the authorities and the visitors alike, was designed by one of his architect colleagues, August von Voit. In Kreuter's later career in Vienna more orthodox kinds of architecture dominated his output. But clearly, Kreuter's is an important story in the wider context of the relationship between architect and engineer. This problem needs to be pursued further, not only in the German - speaking countries. One of the basic questions was: why did engineering split away from architecture? Reflecting on the situation with regard to Kreuter around 1840, one may well conclude very simply that the split occurred because architects, that is, those architects who were already in a position of power, as well as their patrons and the associated state bureaucracies, considered engineering as something that belonged to the lower sphere of building. To undertake wide-ranging research on a case in the complex web of relationships and to present it clearly, concisely and with lavish illustrations, are the chief merits of this book.

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Builders of Repute: the story of Reader Bros.

Josephine Boyle, 2002

The Suitable Press, 55 Monkams Avenue, Woodford Green Essex IG8 0EX

vi + 272 pp, 109 illus, £20.70 inc. p&p.

ISBN 0 954 1688 0 1

There are relatively few histories of building firms, and most are commemorative puffs, designed to mark some corporate milestone with a chorus of mutual satisfaction. This book, tracing a north east London family building firm from the 1890s to its closure in the 1970s is, at the least, unusual.

Reader Bros have a reputation for soundness: as one client put it, "they never had a dissatisfied client, except the ones who tried to do alterations and couldn't get through the walls". In Chingford, mid-20th century houses are still advertised as 'Reader-built': sometimes even when they aren't. The Readers themselves had no qualms about living amidst their clientele, in self-built houses, indeed did so as a matter of pride. 'Builders of Repute' shows how attention to detail, in both pricing and design, founded the reputation.

The firm traced its origins to a family of Clerkenwell metalworkers circa 1804. Thomas Joseph Reader, an engineer draughtsman who worked on the Queen's Hall, Langham Place in the 1890s, added practical plumbing and gas-fitting to his draughtsmanship, and his sons Tom and Richard were similarly multi-skilled. Possibly through a family contact, the brothers moved into contracting, and by 1900 T. J. and R. A. Reader were developers acting as their own designers and contractors, first on the Spratt Hall Road estate in Wanstead, soon afterwards in Leyton and Finchley. Their first major development was on the Monkams estate in Woodford Green, 1903-1914, where they built as they would continue, both speculatively and to order. The estate succeeded, the quality of the product and the Edwardian aesthetic appealing strongly to the market for villas in new and greener suburbs. Initial success was however soured by the effects of the Lloyd George land tax of 1910, exploited by a sharp landowner with deeper pockets. Monkams was followed by a spell managing for another contractor at Upper Clapton, but by 1916 the effects of war had taken both partners out of the building business altogether.

After the war a workforce was reconstructed, partly from among former employees who had survived the trenches. The book follows the brothers - different, though complementary, characters - through the inter-war years when they worked both separately and in a loose partnership, ended by the death of Tom Reader in 1935. Richard, the steadier brother, had carried the business through the difficult early post-war period partly on the strength of construction work for both Hackney Council - its first cottage estate - and Poplar Council, with numerous flats. His three sons joined him in the business, and Readers continued where possible to design and build houses in the commercial mock-Tudor style, with carefully individualised detail - at Chingford, Chislehurst, Stanmore, Winchmore Hill and elsewhere - on their own account.

The outbreak of war in 1939 forced the firm's financial strategy, at the margins, into renting, and even mortgage lending. Readers responded by working once again for local authorities, on the construction of air raid shelters and the conversion of evacuated schools. The military's rejection of all three of the third and final generation of building Readers, all of whom had poor eyesight, enabled the business to survive the war years. (Builders were no use to the Royal Engineers, Jack Reader was told: "We don't construct. We destroy.") With many other contractors, they were invoked for a part in the construction of the Mulberry harbours. After the war there was further work for local councils, and a long haul through the bureaucratic thickets of rationing. The firm's designs responded to the market's move towards modernism, though scarcely embraced it, clinging to Tudor porches and tile-hanging against the trend. After the death of Richard in 1950 had proved, too late, the need for estate tax planning, the firm incorporated, but wound down and closed in the

1970s, as the brothers retired.

The author's father was the last building Reader, and her book functions as a family history as well as a business history. The threads are closely interwoven, informal recollections and the family dynamic enlivening a far from formal record grounded in documentary research. Along the way, there is a complete inventory of known Reader buildings, and illuminating sidelights are thrown on an eclectic range of topics - interior design and furnishing; construction of garden walls; suburbanisation of villages; employee relations; the embryonic inter-war planning regime; wartime shortages and labour mobility; cultural life in the suburbs; even how to divert a footpath. Shot through the book, and distilled into an Afterword, there is personal and passionate advocacy of the proper conservation of the early 20th century English suburban house.

Uniquely, the book also serves as an introduction to, and route-map for, the Reader archive of notebooks, plans, financial records and trade literature, which on the advice of the British Records Association the author has deposited in the London Metropolitan Archives (ref. 4430), and which is outlined in appendices.

Isobel Watson

The Soundness of Modernity. Architectural Acoustics and the Culture of Listening in America, 1900 - 1933

Emily Thompson, 2002

Cambridge Mass. and London: MIT Press

500pp. 117 illust. £29.95

ISBN 0-262-20138-0

A book with such a title raises a variety of expectations as to what may be included. It implies a somewhat specialised interest, limited to those of us who work in, or have involvement with acoustics industry. However, Emily Thompson has provided a fascinating historical perspective on the development of the acoustics industry in the first 30 years of the 20th century in the USA, the refinement of technical acoustic skills and the relationship between the aural environment and the construction industry. She has related public expectations of noise to the development of noise legislation.

We begin with a chapter on the origins of acoustics research. Wallace Sabine's extensive research, and latterly his commercial activities are discussed in some detail. Sabine's work should not be underestimated, as he pioneered the application of scientific principles to the relationship between the space we are in, and how it sounds. It was Sabine who painstakingly investigated the relationship between absorption and reverberation, and it is his equations we use today.

Sabine also developed commercial interests. The author takes us on a tour, through the observation that since 500 BC there is evidence of people being bothered by noises to the instigation of legislation (American of course) in the early 20th century. As a practitioner in the UK in the early 21st century, a wider perspective would have helped place the early work in its true historical perspective.

There is little to aid the reader bridge the gap between today's legislative culture and this research of Sabine, and the early attempts to abate noise in cities. The narrow geographical focus also does not help - Sabine's influence is world-wide, and yet the author has not allowed herself to wander outside of her brief. I would have liked it if she had. That is not a to downplay the interesting stories the author does include. The book includes the early half-baked attempts at vague abatement legislation, as well as well-meaning thorough researchers experimenting, but not understanding what they are finding out. A lot of this work was of great value, and the benefit of the last hundred years allows us to see what was good, and what was not. A co-author, or adviser may well have helped.

We get a terrific tour through the early attempts of product manufacturers to claim acoustic the benefits of their own products. It is beyond me how any architect ever specified a product with confidence. Whilst Sabine seemed to be as precise as he was able in advising manufacturers on this, there were many others who plagiarised his research in attempting to sell off Sabine's established name.

At the same time, the electroacoustics industry was developing, on the back of the radio and recording industries. Sabine's work pervades this area too, and now at the end of the book, we are introduced to Carl Eyring, who developed a Sabine's equations. For me unfortunately, it is too little too late.

The book would benefit from a wider geographical and historical perspective than allowed by the title. The non-American reader may be frustrated to see little mention of world-wide expertise. But these criticisms are minor, compared with what the book does offer.

As an acoustics professional, I found this book insightful and revealing. It has improved my understanding of the early days, and helps me to put current day practice into a historical perspective. I fear for though the non technician - I wonder whether the specific nature of the book,

and the narrow brief adopted by the author, will maintain a more general reader's interest. It provides some of the building blocks of my discipline, which are helpful, but without the others one's understanding is limited.

If you are interested enough, read about the early days in this book. Take on board the author's thorough research into Wallace Sabine, and the way he set up many of the basic principles still in use today in the development of buildings and the aural environment. But do not expect to get the full picture - the author has delivered what is promised in the title. I look forward to future volumes!

Nick Treby

Building Gotham. Civic Culture & Public Policy in New York City, 1898-1938

Keith D. Revell, 2003

Baltimore and London, The Johns Hopkins University Press
x, 328 pp. 16 b & w figures, plus 4 graphs £31.50
ISBN 0 8018 7073 9

Concrete and Clay. Reworking Nature in New York City

Matthew Gandy, 2002

Cambridge, USA, and London, MIT Press
xi, 344 pp. 38 b & w plates and graphs £23.50
ISBN 0 262 07224 6

After decades of Tory fragmentation, the idea of the City-Region has crept back into political discourse and its spatial expression, town and country planning. At a stroke the new Planning and Compulsory Purchase Act has abolished county councils – historic hangovers of dubious socio-economic relevance. In place of the old structure plans there will be Regional Spatial Strategies (the handmaidens of the new Regional Assemblies), realising the dream of that first generation of British planning visionaries. As an added benefit the new system will bring UK planning system – unique in Western Europe – into line with European Spatial Planning. In a Panglossian world we in the UK now finally have the opportunity to integrate different policy sectors into a coherent strategy for our regions and in particular for the London Region, the most influential and far reaching of them all. Planning at this scale must engage with socio-economic infrastructure and of course physical infrastructure; not just road and rail but also ports and waste management, energy generation and so on, all engineering on a grand, very expensive, scale. And at the heart of the new vision are densely populated cities.

There are many ways of understanding the growth of our cities, but surely the one area of inquiry that is fundamental and must underpin, or at the very least accompany, our explanatory models and narratives is how conurbations were engineered. There is a tendency to see this aspect of constructional or industrial history as a chronicle of technological innovation or, more Romantically, as the story of lone, inspired visionaries, prophets of the future who through the application of reason and science can see a clear way through habit and superstition, self-interest and backwardness. But surely engineering at the urban scale must be a political activity, involving conflicting political ideologies and geographical struggles of an imperial nature. Great cities, after all, dominate their hinterlands – this has ever been the case. Thus there are always good historical reasons for why London was drained the way it was, say, even if these reasons are not entirely rational. As historians all we really should be trying to do is provide a cogent explanation.

This relationship between the City-Region idea and infrastructure (and infrastructure spending) will be more and more important to us in the UK over the next twenty years, which is why Keith Revell's excellent book is so very timely, for a British audience certainly but also for our North American cousins who are themselves struggling to come to terms with the spread and spread of towns and cities.

Revell looks at the period that saw the emergence of a 'Greater New York', not just the union of five distinct metropolitan entities (Manhattan, Brooklyn, Staten Island, Queens and the Bronx) but the *de facto* creation of the 'Tri-State' region, New York's hinterland, a hybrid formed of bits of New York State, Connecticut and New Jersey. He has produced an outstanding work of original scholarship, meticulously researched and intricately woven together. His subject is the interaction of infrastructure – his Civic Culture loosely defined – and politics (both ideologies and finance). The book thus has two distinct audiences. Revell himself is a political scientist, and the study is

conceived principally for students of government. But the lessons and analytic methods he uses are directly relevant to students of building technology and engineering.

One recurring theme is the interaction of expert technical knowledge with the regional planning idea, and that amalgam's realisation in political deal making. The lesson is clear: the cleverest technical solution is worthless unless it is politically responsive. This political responsiveness is what pays the bills. Thus the hero of the story is not the railway or hydrological engineer but the engineer-civil servant, administrators with the ability to see both what is achievable in two realms, technically and socially.

In New York the struggle to 1917 was quite simply financing the necessary expenditure in a City riven by local resentments and petty in-fighting (not very different to the struggle between London's early attempts at government and the local parish vestries). Until that point private companies had taken the lead but only insofar as rail infrastructure was concerned, because this infrastructure at least was income generating. The real breakthrough was a change in government that led to a new way of calculating the capital values of New York real estate, and this, in turn, vastly increased the amount the City could borrow. This neat accounting trick happily coincided with drives to improve public service efficiency and reduce rampant corruption. With the public's faith in government restored, administrators could confidently forge links with private financial enterprise. Modern New York City, Revell tells us, was founded on what we might call a mixed economy, something not dissimilar to what the French have achieved (despite some high profile scandals) since the Second World War. Within two decades the physical infrastructure was more or less complete, leaving the City, in the next two decades, to direct its resources to social-service provision. It sounds remarkably like a New Labour lesson in economics.

By contrast this reviewer did not know quite what to make of Matthew Gandy's book on New York. In despair I kept on referring back to the book jacket, which lists five themes and which I shall repeat for my readers' benefit: water supply, public space, the construction of parkways, Puerto Rican environmental politics and the broader, more recent environmental justice movement. The essential idea is that New York, the U.S.'s first megalopolis, provided the impetus for the creation of a peculiarly modern nature, an artificial construct that apes 'real' nature, inflecting its image to specific ideological ends, reflecting class interests and so on.

The most interesting chapter, to this reviewer, was that on Puerto Rican rights. This was all new material, even to this native New Yorker. The rest is based on a strong reading of standard sources, a running commentary on familiar stories told with what I am tempted to call a 'new critical' twang.

Thus Gandy likes to talk about modernities and post-modernities. Nature and culture are bound up in a life and death struggle. This is, in itself, a fine and worthy historical theme. Sadly, though, the writer's quarry is lost in a jungle of impenetrable theoretical jargon of a kind that was fashionable in art history about ten years ago and in literary studies some time before that. I blame MIT. That press's policy is deliberately to keep alive five-and-dime post-structuralist criticism, striking a defiant posture. It may suit some, but the style really does grate and at times I was tempted to hurl the book across the room. This is a disservice to the author, who clearly does have a sophisticated understanding of his subject matter and something worthwhile to say. I blame MIT. Time and again that press publishes what it clearly considers to be uncompromising and radical works of historical writing, and I imagine them striking defiant postures over late afternoon coffees, imagining that their 'new critical perspectives' really are radical. I suspect most readers – and certainly readers of this journal – would rather have more incisive explanations, based on extensive original research, told in a simple prose style. For that we must turn to Revell, whose message is more politically relevant, well informed and astute.

Chris Miele