Vermeer’s Camera
by Philip Steadman
222 pp., numerous colour and mono illus.
ISBN 0-19-215967-4
Price £17.99 (hb)

Secret Knowledge: Rediscovering the Lost Techniques of the Old Masters
by David Hockney
Thames and Hudson, London, 2001
296pp., 402 colour and 58 mono illus.
ISBN 0-500-23785-9
Price £35.00 (hb)

Reviewed by David Vila Domini

Up until now art historians have relied on two main factors to explain the extraordinary development of naturalistic realism in painting since the Renaissance: the genius of the painter’s naked eye, and the technique of artificial perspective. Here are two books that offer another explanation. David Hockney suspects that Brunelleschi’s Baptistry experiment leading to the discovery of linear perspective may have relied on a projective lens; and Philip Steadman describes how Vermeer must have used a camera obscura in his work.

Steadman brings to the inquiry into Vermeer’s working techniques the preoccupations of the architect: the use and the representation of space. The title of the book alludes both to the optical device that the painter may have used as an aid to constructing his highly illusionistic canvases, and the space that painter, models and props, and indeed, the device itself would have occupied during the process of creating them.

Anyone who has seen any of Vermeer’s few surviving mature paintings cannot help but be mesmerized by the fine perspective precision with which the seventeenth-century master from Delft rendered apparently everyday scenes. The quiet realism of the figures’ gestures and expressions, the attention to texture, reflections and highlights in domestic materials, and the almost scintillating quality of the light that appears to bathe the scenes all contrive to lend the paintings a rare and delicate introspective beauty.

The extraordinary quality of the linear and atmospheric perspective in the paintings Vermeer produced after the Caravaggioesque influence has led to speculation by some critics since the advent of photography that he might have employed a camera to aid him in some manner in their execution. These speculations have rarely advanced very far, possibly, as Martin Kemp pointed out in The Science of Art, owing to a feeling on the part of the critic or art historian ‘that it is not quite proper for their favoured artists to resort to this kind of cheating’. Leaving this reservation well to one side, Philip Steadman embarks on a detailed examination of the paintings to reveal new evidence to bear on this matter. Despite the absence of documentation on Vermeer’s life, he manages to show that, contrary to the assumptions of some critics, lenses and cameras of the type that might have proved useful in painting were certainly available in Vermeer’s close social circle.

The striking similarities between the spaces in which paintings such as The Music Lesson, The Concert, or Lady Standing at the Virginals are set prompts Steadman to present a compelling argument for Vermeer depicting and working in a single room, some details of which the artist would have altered to suit different works. His argument is based upon accurately calculated and drawn reconstructions of the spaces depicted in the different

‘…fascinating detective stories …’
David Vila Domini on art and optics
plus three other reviews
Hockney drawing a portrait from a mirror lens projection. © David Hockney. Photo by Richard Schmidt

paintings with tiled or marble floors, and relating their dimensions to real items such as known maps which appear in them.

Having established the nature of Vermeer's studio, the reader is then asked to entertain the notion that Vermeer might indeed have painted all these canvases with the aid of a convex lens camera obscura of the cubic type situated at the end of the room. Steadman provides a fascinating account of his researches with crystal-clear language, diagrams and a full-sized replica of the room. The absence of evidence of any preparatory line drawings in the paintings when studied under X-rays, added to optical evidence, such as the 'out of focus' effect which can be observed in the foreground of a number of paintings, the uncanny realism of highlights on curved reflective surfaces, and the distortions characteristic of the images produced by lenses, all support Steadman's claim that Albertian perspective was not employed. But the crucial and deciding factor must be the author's remarkable discovery shown by the reconstructions that the projections of the images onto the back wall of the room are of the same size as quite a number of the paintings themselves. This fact quite seems to settle the whole case for Vermeer's use of a camera, as well as for the dimensions and details of the room he worked in.

A book very different in format, style and scope is David Hockney's Secret Knowledge, though sharing with Steadman's a passion for the detailed study of paintings and a profound interest in the processes by which they are produced. If Steadman brings to Vermeer an architect's eye, Hockney supplies that of a painter to the many works he examines, and in so doing opens up for us whole new vistas into an art history mainly dominated by academics who are rarely themselves skilled in painting.

Hockney's thesis is simply summarized: that Western art from about 1420 onwards has been strongly, if secretly, influenced by two-dimensional images produced with the aid of optics: lenses, mirrors and related instruments such as the camera obscura, the camera lucida, and the concave mirror. His argument makes clear that the influence was neither a fanciful metaphor nor restricted to isolated cases of eccentric artistry, but rather constitutes a direct and widespread application of these optical methods to the production of paintings by such greats as Van Eyck, Rembrandt, Caravaggio or Velázquez.

If economy – the Ockham's razor principle – makes Steadman's single room and camera obscura theory the simplest and most convincing of the several put forward to explain the construction of Vermeer's paintings, then sheer wealth of visual evidence is the power behind Hockney's ideas. As a practising painter, he brings insider knowledge to the paintings themselves in the first and most voluminous of the book's three sections. The illustrations are copious and of high quality and the brief text that accompanies them has the fluency and directness of the spoken word; one is charmingly reminded of a storybook for children.

Hockney draws our attention to a myriad of details that can only be explained through the intervention of optics. He argues that the first to use the methods were probably Flemish painters who, working in a dark space with a single window, used concave mirrors to project onto their paper or canvas the image visible through that opening. This allowed them to study in detail the forms and lighting of faces and hands, probably observed separately. Large paintings were sometimes collages of several of these separately observed subjects – what Hockney calls the multi-window perspective. Later, with the introduction of better-quality lenses, the camera obscura would have been used for painting. Evidence of its use can be found in perspective distortions of recticular grids that would otherwise be straight, such as the patterns on tablecloths, or the carpet used as one in Hans Holbein's Portrait of Georg Gisze.

But one of the most compelling arguments he puts forward is the astonishingly fast change in naturalism that occurs around the dates where optics is introduced. A slow progression towards this sort of realism can be observed from the time of Giotto onwards, but then – as if 'out of nowhere' – there is a dramatic infusion of realism. Elements such as the shine of metal armour, the folds of clothes and drapery and, above all, fleeting facial expressions such as laughter, are transformed.

Hockney tests out his hypotheses by setting up replicas of some of the devices, using them, and then illustrates his points by reproducing the results. He notes that the study of paintings with regard to their relationship with optical devices results in new groupings of works and artists and makes historical leaps that are apposite. He shows us the similarities of pencil line between a drawing traced by Warhol from a projected slide, and Ingres portraits, claimed by Hockney to be traced with the aid of a camera lucida; Van Eyck's Ghent Altarpiece of 1432 demonstrates the same intriguing sense of depth and closeness as Hockney's own Pearlblossom Highway, composed of a collage of small photographs.

For Hockney the defence of the artist's talent requires an explanation as to why these methods, if not a means of cheating, should have been kept secret. The answer is twofold: on
the one hand, he admits, artists are naturally secretive about their working techniques; on the other, religious beliefs about science effectively restricted their dissemination (moving images, like much science of the time, were regarded as akin to black magic). Vermeer’s own attitude to revealing the methods of painting is characteristically ambiguous. *Allegory of Painting* presents us with a typified view of the artist’s working techniques, eyeballing his subject within a single space, but both *The Music Lesson* and *Allegory of Faith* present glasses whose reflections of the back of the room reveal the artist’s set up to be somewhat different to the traditional. In those minute reflections, mysterious boxes appear that may represent the limit to which the Sphinx of Delft is prepared to go in revealing his methods to the viewer.

These books appear at a time when there is great public and academic interest in both vision, and the historical development and application of science and technology. They share some of the better aspects of the growing fashion for literal reconstructions and partake in a certain fetishistic fascination with gadgetry and, indeed, the voyeuristic eroticism of the visual image. In a world obsessed with watching, where television programmes such as *Big Brother* broadcast the limits of the intimate and police cameras record our daily progress through our cities, they should find their way easily onto many domestic bookshelves. What these publications do not do, however, is to place their discoveries within a broader cultural framework (Hockney, though, does speculate that the current use of digitally manipulated photographs and film extends the optical tradition of making pictures: ‘the hand is returning to the camera’). Nor do they really attempt to explore the interpretative consequences that the discovery of particular working methods is bound to have on the works themselves and their historical significance (Steadman restricts himself to ‘just […] some pointers towards the specific impacts on Vermeer’s painting of a camera technique’). But it is through these self-imposed limitations that the two works achieve, each in their own way, an intense lucidity. They implicitly demonstrate the strong links between available technology, the making process, and style, but for a full development of their consequences we shall have to wait for others to fill the gaps between these fascinating detective stories, art history, and that recent and growing interest in the cultural construct of seeing, visuality.

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**Modern Construction Handbook**

by Andrew Watts

Springer, Vienna and New York, 2001

314 pp., numerous drawings and colour and mono illus.

ISBN 3-211-83491-5

Price £115.90 or approximately £85.00 (hb)

**Reviewed by Alan Brookes**

One of the great disappointments for a teacher of architecture and building technology is to see a student with ambitious ideas at a conceptual development stage have those ideas reduced or abandoned simply because the student lacks the confidence or knowledge to continue those ideas towards a resolved design. Similarly in practice most of us develop knowledge of constructional language within a known palette of materials and are often reluctant to stray outside that knowledge for fear of the unknown dangers involved. Both students and practitioners need to have a convenient means of pursuing other areas of enquiry. A very useful method of gaining new knowledge is through studies of precedent: buildings by others that have a specific relevance to the problem at hand. The success of books like my own *The Building Envelope* and *Connections* is evidence that students and practitioners alike are hungry for good examples of details from practice.

A difficulty with many books on building construction is that they are often written by academics and take time to mature in their realization. Too much time, if the examples chosen to illustrate constructional techniques are out of date or lacking in interest to
students who are well aware of the latest architectural projects through magazines, some of which, like the German magazine Detail, also show clear drawings of their means of construction. A clear benefit of the Modern Construction Handbook (MCH) is that the examples chosen to illustrate types of construction are up to date, perhaps because the author, Andrew Watts, has had considerable experience in practice, particularly in facade detailing. He has worked with Jean Nouvel in Paris and more recently we worked together on the facade for the new Federation Square arts centre in Melbourne by Bates and Smart.

Normally, also, the contents of books on construction are contained by the limits of rectangular frame and infill and rarely do we have a glimpse of the details used in more free-formed buildings such as Gehry’s Guggenheim. But this book includes work by Van Egeraat for the Bank Extension at Budapest and some curiously formed steelwork for the Saltwater Pavilion by Oosterhuis. It also contains some examples of moveable or adaptable architecture, notably the Carter Tucker House in Australia by Sean Godsell.

Exploration of different techniques is often limited by the widespread nature of the information available to architects on the various different technologies and the generally accepted principles for their use. Here, by presenting these principles using the elements of building starting with trends in materials, moving through walls, roofs, structure, and changing relationships between structures cladding and energy, Watts is able to show a wide range of construction available to a contemporary designer in a concise and digestible format. But restricting the information to an element or material type may also be a weakness in that the particular detail of a combination of materials, say moveable facades which could be in timber or metal, would be difficult to find here.

Of course in a book assembled from so many sources there are bound to be some errors in the first edition. On some pages the sections and axonometric drawings do not correlate, for instance, but, more seriously, there is a need for the inclusion of vapour barriers and the means to avoid cold bridging displayed by some of the examples, particularly in the windows to masonry and cavity brickwork section. Notwithstanding these errors this book is essentially very readable. I particularly liked the means of referencing showing the building used for the studies with the names of the architects and references for further study.

Watts doesn’t pretend to have a philosophical viewpoint on detailing such as that expressed by Ford in the wonderful Details of Modern Architecture, for example. He doesn’t discuss issues such as ‘honesty’ or ‘truth’ in modern detailing. The MCH is a sourcebook containing pragmatic information presented in an attractive way. But then the nice thing about reading books about details in architecture is that once one has acquired the taste, it is possible to keep falling in love without losing affection and consideration for old flames. It’s because we love the way they explain in their different ways how combinations of more or less familiar materials and methods can produce a seductive result. Like cookbooks. This is a good cookbook for modern building.

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Anxious Modernisms: Experimentation in Postwar Architectural Culture
edited by Sarah Williams Goldhagen and Réjean Legault
The MIT Press, Cambridge, Mass., with the Canadian Centre for Architecture, Montréal, 2001
335pp., 96 mono illus.
ISBN 0-262-07208-4
Price £23.95 or $34.95 (hb)

Reviewed by John Morris Dixon

This book gracefully and intelligently refutes the perception of ‘the several decades of architectural culture that followed the Second War as an interregnum between an expiring modernism and a dawning postmodernism’. This view of Modern architecture in the years between 1945 and 1965 is said to prevail among architectural historians – understandably, perhaps, because by 1945 most of the archetypes of Modern architecture had been generated and most of the manifestos proclaimed. From the standpoint of many historians today, Modernism had made its major turn towards the printed archives, and so was already history.

In terms of its impact on the world, however, Modernism’s heyday was this same post-war period, when it became the reigning approach not only for corporate offices (hence the often disdainful term ‘corporate Modernism’), but for government offices, institutional buildings, housing, and urban planning as well. In contrast to the scattered pioneering efforts of the years before the Second World War, these were the years when a major part of our Modernist heritage was actually built.
Modern architects faced the post-war world with anxiety, lacking the seeming certainties that stiffened the wills of pre-war Modernists. In ‘Jaap Bakema and the Fight for Freedom’ (a study of the Dutch architect’s 1957 split with CIAM over architecture’s cultural role versus its social and economic mission), Cornelis Wagenaar asserts that ‘in the history of modernism, no phase displays more anxiety than did the 1950s and 1960s’. Yet in a book with over 800 footnotes, no other authority is cited for this dire assessment. Whether or not that period holds a record for anxiety, however, these essays on the stresses of a previous generation make pertinent reading in an era fraught with comparable tensions.

John Morris Dixon is an associate editor of arq
The larger themes that move across the individual chapters are a critique of capitalism that draws heavily on Lefebvre and Harvey; purity and pollution taboos – based on the work of Mary Douglas; and fiction – principally film. The six individual essays deftly link architectural and urban issues to contemporary film treatments. The battle between Brutalism and the Picturesque in 1950s Britain, for example, is contextualized with Passport to Pimlico (1948) and It Happened Here (1956–63). The text on the 1960s office finds its resonances in two films set in Manhattan offices – The Apartment and Sabrina Fair – and two iconic statements about 1960s London, Alfie and Darling. The laudable aim is to widen the discourse and, predictably enough, to admit the transgressive. As Shonfield notes in her end-piece: ‘Attempts to get at an overall theory that “explains” things are out of favour; there is a fashion for the flash of insight, the little observation’. Her avowed aim, in contrast, is to ‘further understanding by making bold connections between apparently disparate circumstances’. Regrettably, the lingering impression – perhaps even the virtue – of this book is to be found precisely in the little observation rather than in any sustained exegesis. Shonfield is good, for example, on the Stevenage interior, c.1957, and even better on the woman as the interior – as the site of solace. The illustrations, too, are tellingly used to support the text. An advert for office desks, for example, offers a range that runs from the ‘status desk for non-stop directors’, via one for ‘dedicated young executives’, to reach the model for ‘pretty typists’. As Shonfield darkly notes, however, the two men in the advert ‘are rather too close for comfort around the pretty typist: they are both handling her fully exposed documents’. With monsters like these lurking, the need for a modesty board to shield mini-skirted legs from the predatory gaze becomes self-evident.

While the architectural or design arguments are illuminated by the narrative comparisons drawn from the movies, hypothesis and evidence tend to be conflated. Alfie’s priapic roamings around London are contrasted, for example, with the plight of his prey – ‘Jane Asher, the adolescent victim’, or ‘Vivien Merchant, the downtrodden housewife’, who are ‘immobilised, identified with and of [sic] the interior’. But where might Marianne Faithfull’s eponymous girl on a motorcycle – that other icon of 1960s male fantasy – fit into this analysis, as she roars across Europe to meet her grey, academic lover, shackled to his desk in Heidelberg? There was surely more to the 1960s sexual revolution than a quick peek up the secretary’s skirt.

However interesting or provocative Shonfield’s analysis, it ultimately rests on a rather dull and undifferentiated definition of architectural Modernism as science-driven, intolerant of difference, and obsessed with the defence of its boundaries and thus its purity. This may have been the case for a brief moment at the end of the 1920s, but the story became much more complex in the post-war decades. As Adorno and Horkheimer noted in the Dialectic of Enlightenment: ‘Myth is already enlightenment; and enlightenment reverts to mythology’.

PS: John Ruskin, contrary to Shonfield’s twice-made assertion, was not in the least interested in structural truth, but in surface narrative and the power of association. As he wrote in The Stones of Venice: ‘While the burghers and barons of the North were building their dark streets and grisly castles of oak and sandstone, the merchants of Venice were covering their palaces with porphyry and gold’. PPS: The banner towed behind the plane in the opening sequences of LA Story doesn’t support the argument that Los Angeles has no ‘identifiable architectural objects’. Quite the opposite: it depicts the Tail o’ the Pup – built in 1938 on La Cienaga and now moved to N. San Vincente Boulevard – the most famous hot-dog stall in the city, hailed by Charles Moore as ‘one of Los Angeles’ most important architectural works’, and by Sam Hall Kaplan as ‘an architectural and gourmand landmark’.

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